

21st World Conference

Educating Gifted and Talented Children

- Turning Research Into Practice



10-14 August 2015

Odense, Region of Southern Denmark



FOR THE FIRST TIME IN SCANDINAVIA

World Council for Gifted and Talented Children

www.worldgifted2015.com



22nd Biennial World Conference

Global Perspectives in Gifted Education

Never Stand Still

Arts & Social Sciences

School of Education

20 – 23 JULY 2017
SYDNEY, AUSTRALIA

Hosted by:
School of Education,
UNSW Australia
(The University of New South Wales)

Visit:
www.worldgifted2017.com



World Council
for Gifted and
Talented Children



**21st World Conference
10-14 August 2015
Odense, Denmark**

The 21st Biennial World Conference of the WCGTC
Educating Gifted and Talented Children
- *Turning Research Into Practice*

Odense, Denmark, August 10-14, 2015



Index

| | |
|---|----|
| Welcome to Denmark | 3 |
| Letter from WCGTC President Leslie Graves | 4 |
| Executive Committee | 5 |
| Local Conference Committee | 6 |
| Awards & Scholarships..... | 7 |
| Academic Committee | 9 |
| Program | 10 |
| Pre-conference..... | 16 |
| Keynote speakers | 19 |
| Invited speakers | 24 |
| How to read the program | 27 |
| Workshops | 28 |
| Symposia | 30 |

Parallel sessions

| | |
|--|-----|
| Advocating for the Gifted | 37 |
| Assessment, Screening, and Identification..... | 41 |
| Creativity Research, Practice, and Future Trends | 51 |
| Curriculum and Classroom Practices | 60 |
| Developing Future Leaders | 79 |
| Educational Technology..... | 82 |
| Giftedness Theory, Research, Practice, and Future trends..... | 86 |
| Guidance and Counseling | 96 |
| Homeschooling, Parenting, and Parent Matters | 98 |
| Innovation Education..... | 101 |
| Moral Education, Values, and Social Consciousness | 106 |
| Parenting Globally for Success..... | 107 |
| Social Emotional Needs of the Gifted, Creative, and Talented | 110 |
| Acceleration | 117 |
| Twice-Exceptional | 118 |
| Underachievers..... | 122 |
| Other (Gifted Adults and Music) | 121 |
| Posters..... | 124 |
| History at a glance..... | 137 |
| Delegates & Affiliates | 139 |
| Social media | 140 |
| Floor plan | 141 |
| Exhibitors | 142 |
| Sponsors | 143 |



Welcome to Denmark

“To be of use to the world is the only way to be happy.”

- says Hans Christian Andersen in one of his most famous quotes. While the “world” might be a big word – for the past two years Susanne and I have pretty much spend our lives preparing, organizing and now finally hosting this 21st Biennial World Conference. Being of use to all of you who have chosen to come to the conference and hopefully this will be of use to gifted children in the years to come!

If you come from Denmark or our fellow Scandinavian countries – welcome to the conference. As part of the small group of dedicated professionals and volunteers working with gifted children, we know this is a most neglected area in our countries. If this is your first conference, enjoy the spirit. It is addictive. Let you inspire by the knowledge and experiences shared and let us keep in touch and have Scandinavia’s first resource centre for gifted and talented children and the professionals working with them become a reality.

To all of you from the rest of the world: Welcome to Denmark. We do hope you will enjoy your time in Odense. Enjoy your time with old and new acquaintances, nurture your network or even better let it grow. Enjoy the good food, the Flower Festival, the exquisite local beer and remember you can go to the house of Hans Christian Andersen in every break, as it is located very close to the venues main entrance.

Most of all enjoy the program we have for you these intense 3½ days. It is a packed program with a total of 506 abstracts being submitted for the conference ending up 1 Nordic Forum, 1 Open Case Forum, 8 workshops, 23 abstracts sharing 14 Symposia, 268 presentations in parallel sessions, and 43 poster presentations. Spicing it up, we welcome 9 keynotes from Brazil, USA, Taiwan, Australia, Scotland, South Africa, and Finland and proudly present three Danish invited speakers.

Compared to former hosts of the World Conference, Odense is small. We see it as the perfect opportunity for you to live in the global village the next days. Remember to join community.worldgifted2015.com and be part of the online global community. Online you can also see the detailed version of the program and design your own individualized conference schedule.

We have more than 45 nationalities represented, which is just amazing. Remember we all come from different cultures, have different customs and use of the English language depending on our mother tongue. Also, have in mind that, despite our differences, the “gifted issue” is a universal one. Gifted children all over the world experience the same feelings of being different, awkward, and even stupid while at the same time perhaps also struggling to understand their potential and use it. The most interesting thing you hear this week may come from an unexpected angel.

To quote Hans Christian Andersen again: “Travelling expands the mind rarely.”

Enjoy the conference, your stay – and remember we are all doing what we do to improve the lives of children.

On behalf of the Local Organizing Committee



*Tina Refning
Conference Manager and Conference Chair*





World Council for Gifted and Talented Children

Worldwide Advocacy for Our Gifted Children

Welcome to the 21st Biennial World Conference of the World Council for Gifted and Talented Children. Networking is always a highlight of the World Conference. With such a multitude of countries represented, this conference will prove to be quite conducive to making new friends and renewing old acquaintances that we can look forward to seeing every two years.



This year we have a broad range of international keynote speakers that will surely inspire and inform our diverse participants from many distinct areas around the globe. The invited speakers have various unique perspectives on the topics they will be presenting and the knowledge they will be sharing. There will also be a great number of terrific parallel sessions to choose from, as well as several intriguing symposia – enough choice for all participants including researchers, professionals, practitioners, educators, psychologists, counsellors, teachers, homeschoolers, and parents and families.

Parents and young adults are uniquely honored at this conference. Not only has Dr. Dorothy Sisk repeated her kind offer of assisting two parents towards attending the conference, but also, we have a full Parent Day. Furthermore, there will be a mini-youth model united nations that will be a wonderful and growth-producing opportunity for gifted adolescents to learn about different aspects of education.

With Denmark being an intensely child friendly country, there will be plenty to entertain the very young, and very young at heart in Odense and surrounding areas. Some of these include the wonderful storybook attractions of Hans Christian Andersen, Odense zoo, tours to Legoland, Egeskov Castle, among others.

This conference could not happen without the tireless work of so many people. I extend a grateful applause to all the members of the organizing committee including the local organizing committee, the WCGTC Executive Committee, and the volunteers and helpers who worked to make this conference a success.

Finally, I would like to extend a personal welcome to all of our worldwide members and attendees. I ask that we welcome the warmth and collegial excitement of mutual learning, adventure, and encounter – gifted, talented, innovative, and creative minds feeding and flowing together. I look forward to raising awareness, networking with you, and learning together to enhance the world of gifted education.

A thousand welcomes,

Leslie S. Graves- Ireland

President

World Council for Gifted and Talented Children

World Council for Gifted and Talented Children (WCGTC) | Gary A. Ransdell Hall | Room 2007 | Western Kentucky University | 1906 College Heights Boulevard #11030 | Bowling Green, KY 42101-1030
WEBSITE: www.world-gifted.org | EMAIL: headquarters@world-gifted.org | PHONE: 270.745.4123 | FAX: 270.745.4124



Excutive Committee



Leslie S. Graves
President

Exceptionally (Gifted)
Able Input Post Graduate
Studies in SEN
Occasional Lecturer
University College in Dub-
lin, Ireland



Ken McCluskey
Vice President

Dean and Professor of
Education
University of Winnipeg
Manitoba, Canada



Humphrey Oborah
Secretary

President, African Fed-
eration for Gifted and
Talented
Nairobi, Kenya



Julia Link Roberts
Treasurer

Mahurin Professor of Gift-
ed Studies and Executive
Director of The Center for
Gifted Studies, Western
Kentucky University
Executive Director of
the Carol Martin Gatton
Academy of Mathemat-
ics and Science, Bowling
Green, Kentucky USA



Ümit Davaşlıgil
Member

Professor, Educational
Psychology, Gifted Edu-
cation
Maltepe University
Istanbul, Turkey



Denise Fleith
Member

Psychologist, Associate
Professor, Institute of
Psychology
University of Brasilia
Brazil



Leonie Kronborg
Member

Senior Lecturer/
Coordinator of Postgrad-
uate Studies in Gifted
Education
Monash University
Clayton, Victoria,
Australia



Tyler Clark
Executive Administrator

World Council for Gifted
and Talented Children
Bowling Green, Kentucky,
USA



Local Conference Committee



Tina Refning
Conference Chair
Academic Committee Secretary
tina@worldgifted2015.com



Susanne Hoff-Clausen
Vice Conference Manager
Social Media & Webmaster
susanne@worldgifted2015.com



Ole Kyed
Head of Academic Committee
ole@worldgifted2015.com



Pia Ryding
Press & PR coordinator
press@worldgifted2015.com



Ulla Koch
Parent Day coordinator
ulla@worldgifted2015.com



Brian Truelsen
IT coordinator
brian@worldgifted2015.com

WCGTC World Conference 2015, Conference book - July 2015
Published by World Gifted Conference Committee Denmark

Susanne Hoff-Clausen, Vice Conference Manager & Editor-in-chief
Tina Refning Larsen, Conference Manager & Co-editor



Printed in Denmark by Just-Print. www.just-print.dk

All rights reserved® No part of this book may be duplicated or circulated without prior written consent from the keynote speakers, authors of the abstracts or WGCCD, Denmark in accordance with the current Copyright law. Exceptions are quotations; WCGTC World Conference 2015 Conference Book may be quoted when this edition is indicated as the source in accordance with good practice and to the extent that the purpose requires.

World Gifted Conference Committee Denmark, Solskinshøjen 9, 5250 Odense SV, Denmark. CVR 35 26 47 87
Email: info@wgccd.dk // Homepage: www.wgccd.dk



Awards and Scholarships

In conjunction with the WCGTC biennial conference, the Executive Committee of the World Council presents awards in four different areas of recognition: distinguished service, creativity, research, and leadership. Applications for these awards are submitted to Headquarters, and the Scholarship and Awards Committee assumes the responsibility for selecting the recipients.

The WCGTC Scholarship and Awards Committee has reviewed the nominations and announced three World Conference Awards that will be officially presented at the 2015 World Conference in Odense including:

| | |
|--|---|
| <p>The World Council Distinguished Service Award</p> <p>Ken McCluskey</p> | <p>The International Creativity Award</p> <p>1999 Morris Stein 2003 E. Paul Torrance 2005 Donald J. Treffinger 2009 Ken McCluskey 2013 Todd Lubart 2013 Peter Csermely</p> |
| <p>The International Creativity Award</p> <p>Klaus K. Urban</p> | |
| <p>The International Award for Research</p> <p>June Maker</p> | <p>The International Award for Research</p> <p>2013 Sally M. Reis 2013 Nicholas Colangelo</p> |
| <p>PAST WINNERS</p> | <p>A. Harry Passow Award for Leadership in Gifted Education</p> |
| <p>The World Council Distinguished Service Award</p> <p>1999 Wu-Tien Wu 2003 Barbara Clark 2005 Klaus K. Urban 2009 Edna McMillan 2011 Edna McMillan 2013 Joyce VanTassel-Baska</p> | <p>1997 E. Paul Torrance 1999 John F. Feldhusen 2005 Joseph Renzulli 2007 James J. Gallagher 2011 Dorothy Sisk 2013 Taisir Subhi Yamin</p> |

In any given conference year, the nominated Scholarship and Awards Committee tries to provide some financial assistance to a small number of individuals who may otherwise not be able to attend the World Conference. Normally this is done through application. After a review of the applicants, and dependent on their statements of need, and other criteria, a small number may be selected and offered one of a number of scholarships.



For 2015, the WCGTC Scholarship and Awards Committee has granted:

Three World Conference registration scholarships to:

- Yalew Endawoke Mulu – Ethiopia
- Luc Bugingo Tabu – Rwanda
- Cigdem Selik-Sahin – Turkey

The goal of the scholarships is to make World Conference participation possible for those who would otherwise be unable to attend due to financial constraints. The Scholarship and Awards Committee thanks all those who applied for a 2015 World Conference Scholarship.

Edna McMillian Scholarships

Dr. Dorothy Ann Sisk, founding member and long-time supporter of the WCGTC, has (for a second time) generously offered to donate two special scholarships. The scholarships are each \$1000 to help two individuals, who otherwise would not be able to attend the World Conference. Dr. Sisk awards these scholarships in the name of her dear friend and colleague *Dr. Edna McMillan*, former WCGTC EC member also having served as Secretary and Vice President, and who passed away in 2012. The two recipients of this scholarship are Ms. Lucia Riet (Estonia/Uruguay) and Rebecca Howell (England). Ms. Riet is a trained psychologist and parent of two gifted children. She has since been involved in the set-up of gifted programs in two schools- the International School of Estonia and Tallinn English College – where her advice to families and kids and her guidance and help to the teachers has proven invaluable. She also maintains her practice of counselling families with gifted issues. Ms. Howell became involved with the gifted community when her eldest child began showing signs of extreme giftedness. She has set up parent training programmes, become involved with Potential Plus UK, and runs an online support group.



Academic Committee



Ole Kyed, Denmark
Chairman



Tina Refning, Denmark, Secretary



Poul Nissen
Denmark



Kirsi Tirri
Finland



Julia L. Robert
USA



Klaus K. Urban
Germany



Sunday August 9th, 2015

Your Child is Gifted – What Now? – A Parent's Day

Registration at: www.wgccd.dk

Venue: Mødecenter Odense
Buchwaldsgade 48, 5000 Odense C

7:30 Registration opens

8:00 Networking and Breakfast Buffet

8:55 Welcome from the Local Organizing Committee

9:00 **"Your Child is Gifted. What Now?"**

Dr. Shirley Kokot, South Africa

"What Does It Mean to Be Gifted in a Danish Culture? – Challenges and Barriers"

Educational Psychologist Ole Kyed, Denmark

10:30 Networking and reflection (coffee/tea included)

11:00 **"Is It ADHD or Just Energy?"**

Vice President of the WCGTC Ken McCluskey with his wife Andrea and daughter Amber McCluskey

12:30 Lunch Buffet

13:30 Focus Groups

| Gifted and Talented Children – The Basics | Perfectionism | Advocacy and Educational Strategy | Coping with Dual Exceptionalities |
|---|------------------------------|-----------------------------------|---|
| <i>Ole Kyed, Denmark (in English)</i> | <i>Dr. Dorothy Sisk, USA</i> | <i>Dr. Julia L. Roberts, USA</i> | <i>Dr. Shirley Kokot, SA and Leslie Graves, Ireland</i> |

14:45 Networking and reflection (cake'n'coffee included)

15:15 Focus Groups

| Gifted and Talented Children – The Basics | Perfectionism | Advocacy and Educational Strategy | Coping with Dual Exceptionalities |
|---|------------------------------|-----------------------------------|---|
| <i>Ole Kyed, Denmark (in Danish)</i> | <i>Dr. Dorothy Sisk, USA</i> | <i>Dr. Julia L. Roberts, USA</i> | <i>Dr. Shirley Kokot, SA and Leslie Graves, Ireland</i> |

16:30 **"Three Generations of Giftedness – No Bed of Roses"**

President of the WCGTC Leslie Graves

17:15 Rounding up a Parent Day

18:30-20:00 Optional dinner

Educating Gifted and Talented Children – Turning Research into Practice

Registration at: www.worldgifted2015.com

Venue: Radisson Blu H.C. Andersen Hotel
Claus Bergs Gade 7, 5000 Odense C

18:00-20:00 Registration is open



Monday August 10th, 2015

Educating Gifted and Talented Children – Turning Research into Practice

Registration at: www.worldgifted2015.com

7:30 Registration opens Foyer 2

8:30 Pre-conference workshops

| | | |
|--|---|--------|
| Gifted and Talented in Early Years – Practical Activities for Children Aged 3 to 6 | <i>Dr. Margaret Sutherland Scotland</i> | Room A |
| Unravelling the causes of learning difficulties in the twice-exceptional child | <i>Dr. Shirley Kokot South Africa</i> | B |
| Creating a school concept with clear academic and educational guidelines for Gifted Children | <i>Pernille Buch-Rømer Denmark</i> | C |
| Over-excitabilities: How do they predict school learning and social adjustment? | <i>Dr. Ching-Chih Kuo Taiwan</i> | D |
| The “State of the Art” in the Science of Creativity: Theory, Research, Education, and Assessment | <i>Dr. Jonathan Plucker USA</i> | 1 |
| <i>Developing Future Thinking in Innovative Blended Learning Environments: The Multidimensional Curriculum Model</i> | <i>Dr. Hava Vidergor Israel</i> | 5 |

11:30 Lunch Foyer 2

12:30 Pre-conference workshops

| | | |
|--|--|--------|
| Providing Optimal Learning Environments to Motivate Teachers and Gifted Students | <i>Dr. Leonie Kronborg Australia</i> | Room A |
| Nurturing and Developing Spiritual Intelligence ‘A practical guide in helping gifted students find meaning in their lives and education’ | <i>Dr. Dorothy Sisk USA</i> | B |
| Exploring Creative Lives: International Coaching for Creative Adolescents | <i>Dr. Barbara Kerr USA</i> | C |
| Differentiating with biography: Talent development through non-fiction reading | <i>Dr. Ann Robinson USA</i> | D |
| Why Bright Kids Get Poor Grades: An Educational Epidemic | <i>Dr. Sylvia Rimm USA</i> | 1 |
| How to foster students’ creativity in the classroom: Techniques and strategies | <i>Dr. Eunice Alencar Brazil</i> | 5 |

14:30 Networking cake’n’coffee Foyer 2 & 3

16:00 The 21st World Conference opening ceremony Carl Nielsen Hall

16:15 **Legacy Keynote Dr. Shirley Kokot:** “Planting a Garden: A historical overview of Experiences both in WCGTC and Starting a South African School for Gifted Children”
Chair: Humphrey Oborah

17:30 The Royal Ballet School, Odense

18:00 **Keynote Dr. Henry Tirri:** “The Shift – Giftesness in the 21st Century”
Chair: Tina Refning

19:45-20:30 Conference Welcome Reception Amfiscenen, Brandts Klædefabrik

Page # 11



Tuesday August 11th, 2015

Educating Gifted and Talented Children – Turning Research into Practice

09:00 **Keynote Dr. Margaret Southerland:** Carl Nielsen Hall
 “A Collaborative Approach to Building the Bridges between Research and Practice”
Chair: Susanne Hoff-Clausen

10:00 Morning coffee/tea Foyer 2 & 3

10:30 Parallel sessions A see website for details on rooms

| Poster | Topic 1 | Topic 13 | Topic 9 | Topic 4 | Topic 3 | Topic 7 | Topic 2 | Topic 12 | Topic 7 | Topic 10 | Topic 17/15 | Topic 4 | Topic 4 | Symposium 7 |
|--------|---------|----------|---------|---------|---------|---------|---------|----------|---------|----------|-------------|---------|---------|-------------|
| | 1-88 | 13-49 | 9-53 | 4-82 | 3-79 | 7-39 | 2-86 | 12-10 | 7-31 | 10-115 | 17-408 | 4-323 | 4-317 | S7-258 |
| | 1-145 | 13-70 | 9-149 | 4-138 | 3-80 | 7-121 | 2-99 | 12-93 | 7-198 | 10-418 | 17-427 | 4-428 | 4-318 | |
| | 1-377 | 13-314 | 9-383 | 4-183 | 3-410 | 7-141 | 2-288 | 12-264 | 7-269 | 10-458 | W15-46 | 4-475 | 4-357 | |
| | 1-468 | 13-461 | 9-454 | 4-481 | 3-456 | 7-432 | 2-299 | 12-489 | 7-286 | 10-465 | | 4-480 | 4-499 | |

12:30 Tapas buffet Foyer 1

13:30 **Invited speaker Hans Henrik Knoop:** Carl Nielsen Hall
 “Positive Psychology in Education: How fairness, well-being and performance are mutually depending aspects of future education”, *Chair: Pernille Buch-Rømer*

14:30 Parallel sessions B see website

| Posters | Topic 2 | Topic 10 | Topic 12 | Topic 15 | Topic 2 | Topic 3 | Topic 3 | Topic 7 | Topic 13 | Topic 4 | Topic 4 | Topic 4 | Symposium 9 | Symposium 7 |
|---------|---------|----------|----------|----------|---------|----------------|---------|---------|----------|---------|---------|---------|-------------|-------------|
| | 1-215 | 2-32 | 11-20 | 15-112 | 2-176 | 3-197 | 3-68 | 7-114 | 13-217 | 4-42 | 4-252 | 4-24 | S9-195 | S7-144 |
| | 1-223 | 2-218 | 11-348 | 15-227 | 2-184 | 3-319 (S3-241) | 3-208 | 7-147 | 13-237 | 4-62 | 4-308 | 4-220 | S9-272 | S7-476 |
| | 1-421 | 2-492 | 11-450 | 15-353 | 2-495 | 3-361 | 3-320 | 7-329 | 13-253 | 4-291 | 4-330 | 4-419 | | |

16:00 Afternoon networking cake’n’coffee Foyer 2 & 3

16:30 Parallel sessions C see website

| Topic 2 | Topic 10 | Topic 12 | Topic 5 | Topic 6 | Topic 3 | Topic 7 | Topic 7 | Topic 4 | Topic 2 | Workshop 13/4 | Topic 4 | Symposium 15 | Symposium 4 |
|---------|----------|----------|---------|---------|---------|---------|---------|---------|---------|-------------------|---------|--------------|-------------|
| 2-122 | 10-228 | 12-109 | 5-19 | 6-128 | 3-285 | 7-182 | 7-188 | 4-233 | 2-200 | W13-139 W4-486 | 4-17 | S15-52 | S4-14 |
| 2-159 | 2-276 | 12-117 | 5-25 | 6-166 | 3-374 | 7-219 | 7-332 | 4-497 | 2-235 | | 4-67 | S15-173 | S4-81 |
| 2-436 | 10-386 | 12-467 | 5-356 | 6-321 | 3-463 | 7-336 | 7-341 | 4-342 | 2-443 | | 4-464 | S15-267 | |

18:00 **Keynote Dr. Sylvia Rimm:** Carl Nielsen Hall
 “From Underachievement to Wondrous Achievement: Practical Strategies for Motivating Gifted Students”, *Chair: Ümit Davasligil*

19:00 See you tomorrow

20:00-? Networking Dinners at local restaurants. See website for details

For members of the World Council for Gifted and Talented Children:

19.15-20:00 WCGTC General Assembly

Carl Nielsen Hall

20:00-20:45 WCGTC Delegates Meeting

Carl Nielsen Hall

Page # 12



World Council For Gifted and Talented Children 21st Biennial World Conference

Educating Gifted And Talented Children - Turning Research Into Practice

10 – 14 August 2015 Odense, Denmark

www.worldgifted2015.com // info@worldgifted2015.com

Wednesday August 12th, 2015

Educating Gifted and Talented Children – Turning Research into Practice

09:00 **Keynote Dr. Eunice Alencar:** Carl Nielsen Hall
 “Creativity in the School Setting: Challenges, Pathways and Strategies of Assessment”
Chair: Jo Hermann

10:00 Morning coffee/tea Foyer 2 & 3

10:30 Parallel sessions D see website for details on rooms

| Posters | Topic 2 | Topic 13 | Topic 3 | Topic 6 | Topic 3 | Topic 15 | Topic 3 | Topic 4 | Topic 5 | Topic 7 | Topic 4 | Topic 7 | Workshop 4 | Workshop 3 |
|---------|---------|----------|---------|---------|---------|----------|---------|---------|---------|---------|---------|---------|------------|------------|
| | 2-9 | 13-56 | 3-100 | 6-43 | 3-18 | 15-119 | 3-221 | 4-36 | 5-95 | 7-107 | 4-132 | 7-158 | W4-7 | W3-511 |
| | 2-47 | 13-85 | 3-111 | 6-73 | 3-292 | 15-278 | 3-252 | 4-54 | 5-240 | 7-238 | 4-372 | 7-281 | | W3-136 |
| | 2-55 | 13-103 | 3-363 | 6-130 | 3-387 | 15-384 | 3-363 | 4-337 | 5-433 | 7-326 | 4-429 | 7-296 | | |
| | 2-243 | 13-209 | 3-413 | 6-469 | 3-449 | 15-401 | 3-349 | 4-482 | 5-478 | 7-473 | 4-441 | 7-339 | | |

12:30 Tapas buffet Foyer 1

13:30 **Keynote Dr. Ching-Chih Kuo:** Carl Nielsen Hall
 “Gifted Brains: Studies of Gender Differences”, *Chair: Leslie Graves*

14:30 Parallel sessions E see website

| Posters | Topic 1 | Topic 2 | Topic 13 | Topic 9 | Topic 6 | Topic 10 | Workshop 2 | Topic 7 | Topic 4 | Topic 4 | Topic 4 | Topic 4 | Sym-po-sia 3 | Sym-po-sia 7/1 |
|---------|---------|---------|----------|---------|---------|----------|------------|---------|---------|---------|---------|---------|--------------|----------------|
| | 1-27 | 2-196 | 13-302 | 9-75 | 6-34 | 10-120 | W2-496 | 7-22 | 4-33 | 4-161 | 4-157 | 2-137 | S3-265 | S7-151 |
| | 1-131 | 2-214 | 13-343 | 9-448 | 6-113 | 10-274 | | 7-97 | 4-124 | 4-172 | 4-312 | 2-284 | S3-400 | S7-266 |
| | 1-156 | 2-385 | 13-438 | 9-455 | 6-140 | 10-300 | | 7-125 | 4-315 | 4-287 | 4-392 | 2-289 | | S1-190 |

16:00 Afternoon networking cake’n’coffee Foyer 2 & 3

16:30 Parallel sessions F see website

| Topic 1 | Topic 10 | Topic 13 | Topic 4 | Topic 14 | Topic 3 | Topic 7 | Topic 4 | Topic 7 | Topic 4 | Topic 2 | Topic 2 | Sym-po-sia 7 | Sym-po-sia 4 |
|---------|----------|----------|---------|----------|---------|---------|---------|---------|---------|---------|---------|--------------|--------------|
| 1-201 | 10-77 | 13-180 | 4-186 | 14-50 | 3-135 | 7-29 | 4-162 | 7-8 | 4-226 | 2-37 | 2-268 | S7-125 | S4-501 |
| 1-279 | 10-96 | 13-453 | 4-389 | 14-51 | 3-154 | 7-216 | 4-163 | 7-153 | 4-376 | 2-143 | 2-280 | S7-294 | |
| 1-290 | 10-293 | 13-189 | 4-439 | 14-78 | 3-333 | 7-316 | 4-460 | 7-398 | 4-423 | 2-381 | 2-283 | | |

18:00 **Invited speaker Søren Rågård:** Carl Nielsen Hall
 “Bridging Physical and Digital – Enabling every student to succeed”, *Chair: Denise Fleith*

19:00 See you tomorrow



Thursday August 13th, 2015

Educating Gifted and Talented Children – Turning Research into Practice

09:00 **Keynote Dr. Ann Robinson:** Carl Nielsen Hall
 “What Makes a Practice “Best”? Evidence-based Recommendations in Gifted Education”
 Chair: Ken McCluskey

10:00 Morning buffet Foyer 2 & 3

10:30 Parallel session G see website for details on rooms

| Topic 8 | Topic 13 | Topic 16 | Topic 10 | Topic 3 | Topic 5 | Topic 4 | Workshop 4 | Topic 4 | Sym-po-sia 4 | Sym-po-sia 2 | Topic 2 | Workshop 12 | Sym-po-sia 17 |
|---------|----------|----------|----------|---------|---------|---------|------------|---------|--------------|--------------|---------|--------------|---------------|
| 8-28 | 13-225 | 16-45 | 10-148 | 3-83 | 5-76 | 4-174 | W4-90 | 4-35 | S14-171 | S2-502 | S15-309 | Nordic Forum | S17-512 |
| 8-416 | 13-451 | 16-102 | 10-490 | 3-84 | 5-105 | 4-344 | | 4-74 | | | | W12-6 | |

11:30 Parallel session H see website

| Topic 8 | Topic 13 | Topic 16 | Topic 6 | Topic 9 | Topic Music | Topic 4 | Workshop 4 | Topic 4 | Sym-po-sia 17 | Sym-po-sia 2 | Sym-po-sia 2 | Workshop 12 | Sym-po-sia 4 |
|---------|----------|----------|---------|---------|-------------|---------|------------|---------|---------------|--------------|--------------|-------------|--------------|
| 8-69 | 13-457 | 16-229 | 6-239 | 9-212 | 17-307 | 4-345 | W4-146 | 4-415 | S17-232 | S2-118 | S15-309 | Nordic | S17-512 |
| 8-199 | 13-504 | 16-440 | 6-321 | 9-503 | 17-442 | 4-351 | | 4-137 | | | | Forum | |

12:30 Networking lunch bag Foyer 1 or outside

13:15 **Keynote Dr. Jonathan Plucker:** Carl Nielsen Hall
 “Critical Issues and Practices in Gifted Education: What the Research Says”
 Chair: Julia Roberts

14:15 **Invited speaker Kristoffer Henriksen:** Carl Nielsen Hall
 “The Ecology of Talent Development in Sport”, *Chair: Poul Nissen*

15:15 Afternoon networking cake’n’coffee Foyer 2 & 3

15:45 **Keynote Dr. Leonie Kronborg:** Carl Nielsen Hall
 “Teaching Teachers to Teach the Gifted: What Have I Learned and What to Teachers Need to Know?”, *Chair: Ole Kyed*

16:45 Youth Summit presents resolution paper Carl Nielsen Hall

17:00 Closing ceremony Carl Nielsen Hall

17:30 Hans Christian Andersen Parade Carl Nielsen Hall

18:00 Thank you for attending the 21st World Conference! See ya at the 22nd in Sydney, Australia

19:00 Departure for Gala Dinner

20:00 Gala Dinner and a night of celebration



Friday August 14th, 2015
Post-conference reflection and networking

10:00-13:00 Would you like to work through all of the information gathered at the conference? Join this free optional three hour post-conference. You book one of the sessions and find more information at community.worldgifted2015.com, go to "Schedule"



Pre-conference

Monday 10 August 2015

Participants may attend one morning and one afternoon workshop. To register go to registration and select the workshop(s) in the drop down box.

Morning session 8.30 – 11.30 am:

- Creating a school concept with clear academic and educational guidelines for Gifted Children

School Founder Pernille Buch-Rømer (Denmark)

In the public school system in Denmark it has never been a tradition to deal with the identification of gifted students. This group of children has always been overlooked and, in addition, the Danish teacher training has never focused on this student group's characteristics and specific needs. For many students, the teachers' lack of knowledge and subsequently, lack of stimulation, has had a negative impact on their academic and social development, and thus their self-image. After tutorials, extensive research, personal experience with a highly gifted son, and debate in magazines and television, I felt obliged to act and I developed and created a school concept with clear academic and educational guidelines with children's well-being as the top priority. In this workshop, I want to share my experience with the whole process of the establishment of a school for gifted children and the importance of the composition of subjects, teaching materials, and selection of both teachers and students based on practical experience from over 10 years of work and four school openings. Let us discuss alternative models and solutions, and last but not least, how gifted students are met and mentally stimulated individually, in order to get a meaningful education.

Pernille Buch-Rømer (Bio)

After completing teacher's training, Pernille Buch-Rømer initiated the development of a school concept Mentiqa for education of children with special endowment assumptions. She managed to stimulate debate about gifted children's conditions in the Danish school system and for the first time in decades, the problems of these children's social, emotional and intellectual development were on the media agenda in Denmark. She was one of the initiators of the establishment of the parent network "Gifted Children" in association Mensa and implemented by extension, a very comprehensive survey of parents of gifted children and continued based on the spectacular results the development of the educational philosophy behind Mentiqa. Establishment of Denmark's first school for children with special endowment assumptions became a reality in Søborg just north of Copenhagen in 2004. Pernille's work has since formed the basis for the opening of three more Mentiqa schools in Odense, Denmark, Hadsten and Aalborg and she has served as principal and educational consultant until July 2008, when she resigned her positions. At present Pernille continuously works for the wellbeing of Gifted and Talented Children and their families as a consultant. Also, Pernille is a part of the Local Conference Committee and has Press and Marketing as her area of expertise for the World Conference.

- **Over-excitabilities: How do they predict school learning and social adjustment?**

Dr. Ching-Chih Kuo (Taiwan)

Over plus excitabilities meant that the reaction on personal interaction or some event last significantly longer, occur with greater frequency, and express stronger than average. Dabrowski named the consistent and over-reacted performance over-excitabilities including psychomotor, sensual, intellectual, imaginal, and emotional dimensions. Since Dr. Dabrowski (1938) raised his theory of positive disintegration of gifted individuals, several instruments for rating OE's have been invented. Prof. Kuo has chaired a series of OE studies at National Taiwan Normal University using the OE's related scales, including The Me Scale, The Me Scale II, and The Emotion Scale since 2001. During this workshop there will be an introduction to these scales and analysis of the effect of OE's on learning and social adjustment; there will also be some suggestions for guidance and counseling services among gifted students suffering from high sensitivity and intensity psychologically and physically.

Dr. Ching-Chih Kuo is keynote speaker on 12 August.

- **Unravelling the causes of learning difficulties in the twice-exceptional child**

Dr. Shirley Kokot (South Africa)

In many, but not all, countries it is accepted that gifted children can and quite frequently do experience learning difficulties. Labels such as ADHD, Dyslexia, Auditory Processing Problems and so on, may be misleading because they seldom explain the reasons for the difficulties. Labelling children usually results in professionals becoming blinded as to the real underlying causes in their attempts to treat the labels – usually with medication. This workshop explains the principles of a neurodevelopmental approach that is eco-systemic in nature. This means that the child's sensory motor systems interact with many and varied systems in the environment. By studying the various systems that support the child's ability to learn and the possible negative influences on those from the environment (including the impact of, amongst others, poor diet and pollutants) it becomes possible to understand the real reasons for the child's underperformance. Once the underlying causes are recognised, it is possible to offer really effective help. Integrated Learning Therapy (ILT) recognises the role of movement in brain structure and function. Particular movement activities are used to regulate the functioning of the child's systems and reorganise neural networks that are needed for learning. In addition, this workshop will demonstrate some of these movements and how they relate to healthy neurodevelopment as well as looking at ways of possibly preventing the onset of difficulties before school age.



Dr. Shirley Kokot is legacy keynote speaker 10 August.

- **The “State of the Art” in the Science of Creativity: Theory, Research, Education, and Assessment**

Dr. Jonathan Plucker (USA)

Creativity is often mentioned as a key “21st century skill,” but the conventional wisdom is that creativity can’t be defined, no one knows how to enhance it, and it can’t be measured. Fortunately, reality far outpaces this conventional wisdom. The goal of this workshop is to provide an update on the rich theory, research, and intervention work that has emerged over the past 20 years, which has truly been a golden age of the study of creativity. As a result of this workshop, participants will be able to define creativity and contrast it to related but distinct constructs such as intelligence and giftedness, identify potential interventions for increasing creativity, and describe strategies for assessing creativity in a variety of

Dr. Jonathan Plucker is keynote speaker on 13 August.

- **Gifted and Talented in Early Years – Practical Activities for Children Aged 3 to 6**

Dr. Margaret Sutherland / Dr. Niamh Stack (Scotland)

The early years setting offers a wonderful opportunity to build on the many experiences that gifted and talented children may have encountered in the first few years of their lives. Their learning journeys start in the home and this is where the foundations of their learning identities are put in place. Early years educators play an integral role in helping children to continue developing their personal narratives and learning identities. Based on our previous successful experiences using children’s literature with early years educators and inspired by being in the birthplace of Hans Christian Andersen, this practical workshop will focus on the narratives that gifted and talented young learners bring to the early years settings and how educators in these contexts can play their role in these on-going narratives. Using a range of international examples from children’s literature we will demonstrate practical strategies and activities showing how these texts can be used to challenge, inspire and ignite a passion in our future storytellers.

Dr. Margaret Sutherland is keynote speaker on 11 August.

Niamh Stack (Bio)

Dr Niamh Stack lectures in Developmental Psychology in the School of Psychology at the University of Glasgow and is the Development Officer for the Scottish Network for Able Pupils also situated in the University of Glasgow (SNAP – <http://www.gla.ac.uk/schools/education/ablepupils/>). As part of her work in SNAP she is involved in supporting professional knowledge exchange partnerships with Scottish Education Authorities through providing continuing professional development activities to teachers focused on gifted development. She is also actively engaged in research and publication activities related to the development and education of children with high abilities

- **Developing Future Thinking in Innovative Blended Learning Environments: The Multidimensional Curriculum Model**

Dr. Hava Vidergor (Israel)

Developing future thinking is essential for gifted and able learners, as well as incorporating self-regulated and personalized learning using blended learning. The multidimensional Curriculum Model (MdCM) helps teachers to better prepare gifted and able students for our changing world, acquiring much needed skills. It is influenced by general learning theory of constructivism, notions of preparing students for 21st century, Teaching the Future Model, and current comprehensive curriculum models for teaching gifted and able students integrating ICM, PCM and FPSP. The Uniqueness of the proposed model is expressed in the three key dimensions or perspectives portraying how experts think. These key perspectives focus on the personal, global and time dimensions, inter-connected among themselves, and with basic content, process and product dimensions. Special attention will be given to hands-on practice and ideas of incorporating the model in blended learning environments.

Hava E. Vidergor (Bio)

Ph.D. in learning, instruction and teacher education with specialization in gifted education from the University of Haifa, Israel. Hava is the director of HV Gifted Expertise Center and supervises M.A. theses in Gordon Academic College and Oranim College. She has 30 years experience in teaching and holding various administrative positions at school. She was a pedagogical coordinator and lecturer in a certification program for teachers of gifted students at Oranim Academic Teachers’ College in Israel, and taught leadership at Oranim Gifted Education Center. She is also an invited lecturer in certification programs for teachers of gifted in Israeli universities and from overseas, as well as a large number professional development programs for teachers of high achievers. She has presented a number of papers, posters and has conducted workshops in World Council, Asia-Pacific and ICIE international conferences. She has published several research papers in top gifted education journals, and is the initiator and co-editor of *Applied Practice for Educators of Gifted and Able Learners* with C.R. Harris, and *Enhancing the Gift of Leadership* with D.A. Sisk. Hava has developed a comprehensive Multidimensional Curriculum Model (MdCM) for teaching gifted and able students. She is an active member of the World Council for Gifted and Talented Children (WCGTC) and currently serves as the Israeli delegate.



- **How to foster students' creativity in the classroom: Techniques and strategies**

Dr. Eunice Alencar/ Dr. Denise Fleith (Brasil)

There is no doubt that the improvement of students' creativity is a viable educational goal. As a consequence, numerous studies have suggested ways to cultivate creativity in the educational setting. Several cognitive and affective strategies for helping teachers to foster students' creativity will be presented in this workshop, including developing creative abilities such as fluency, flexibility, and originality; applying creativity strategies to content areas; exploring ways to deal with common blocks to creativity. Specific teaching procedures will be presented as well as a number of techniques and practical activities which can be used in the school environment to enhance creativity. Furthermore, how to establish a creative climate in the classroom will be discussed.

Dr. Eunice Alencar is keynote speaker on 12 August.

Denise Fleith (Bio)

Psychologist and an associate professor at the Institute of Psychology, University of Brasília, Brazil. She received her doctoral degree from the University of Connecticut (USA) in gifted and talented education. Dr. Fleith is the author of numerous books and articles on creativity and giftedness, a consultant for the Ministry of Education, and a researcher at the National Council of Scientific and Technological Development in Brazil. She has conducted numerous training sessions for teachers of the gifted throughout Brazil. She founded, with other scholars, the Brazilian Council for Giftedness and was the first vice-president of this council (2003-2004). Dr. Fleith is a member of the Executive Committee of the World Council for Gifted and Talented Children.

- **Providing Optimal Learning Environments to Motivate Teachers and Gifted Students**

Dr. Leonie Kronborg (Australia)

Teachers are often keen to develop their teacher expertise, but need relevant educational opportunities and encouragement to extend their own learning. The school leadership has a responsibility to provide intellectual, social, emotional and physical support to teachers, to increase their knowledge and understanding of gifted students' cognitive and affective learning needs through professional learning opportunities. Teachers and school leaders can structure effective educational opportunities by implementing a range of educational strategies, such as high ability grouping within comprehensive and selective secondary schools, mixed-ability grouping and curriculum differentiation, cluster grouping, extending and accelerating learning opportunities for gifted and talented students. Findings from research I have been involved in related to effective strategies, and specific educational Australian examples will be discussed and explored in this workshop.

Dr. Leonie Kronborg is keynote speaker 13 August.

- **Why Bright Kids Get Poor Grades: An Educational Epidemic**

Dr. Sylvia Rimm (USA)

Underachievement Syndrome has become an educational epidemic. Many gifted children who sit in our classrooms do not work up to their ability in school. This workshop will focus on ways that parents, teachers, counselors, and psychologists can identify the patterns of underachievement at home and at school and on ways they can help these children in the prevention and cure of underachievement syndrome. The TRIFOCAL Model for reversing underachievement will be introduced. The workshop will involve educators in identifying and planning for an underachieving student. Participants are encouraged to bring a case study of a gifted underachiever to work through during the session.

Dr. Sylvia Rimm is keynote speaker on 11 August.

- **Exploring Creative Lives: International Coaching for Creative Adolescents**

Dr. Barbara Kerr (USA)

Creative adolescents throughout the world receive little help in understanding the invisible pathways toward creative careers in arts, technology, design, and entrepreneurship. Would you like to become a coach for creative young people who are struggling to find their way to their future? Creative Lives: Exploring Your own Story is a web-based, comprehensive advising and coaching program for future innovators. Creative students learn how to identify their "flow" and make life decisions based on their flow. CLEOS provides online, research-based, personality and creativity assessment; individual coaching through video conferencing; and information about creative careers, educational opportunities, and internships throughout the world. Coaches are educational consultants and masters level counselors who know how to work with imaginative, nonconforming teens to find their flow, create a career goal, choose advanced training, and find the mentoring they need. This workshop introduces the concepts and skills necessary for providing academic and career support for creative adolescents. Participants will learn to skillfully explore the activities in which the students experience flow consciousness states. They will then integrate information about abilities, personality, and values; to interpret online assessments; to provide crucial and hard to find information about creative colleges, internships, and apprenticeships; and to help students set and stay true to their goals.

Barbara A. Kerr (Bio)

Ph.D. holds an endowed chair as Distinguished Professor of Counseling Psychology at the University of Kansas. Her research has focused on the development of talent and creativity within the context of a gendered society. She directed research projects for the National Science Foundation for fifteen years that focused on women, science, and innovation. At KU, she founded the first laboratory for the study of the creative adolescents and adults, where over one thousand young people have received career guidance and therapy. She is co-founder of the Lawrence



Creates Makerspace, a living laboratory for the study of creative community. She is the author of the first *Smart Girls*, *Gifted Women* a best-seller in education; *Smart Boys*; *Counseling Girls and Women* and over a hundred other scholarly works in the her area. She is an American Psychological Association Fellow, and was named one of the twenty-five most influential psychologists in the study of intelligence and creativity by APA. Her latest book, *Smart Girls in the Twenty-First Century* explores how a new generation of young women can be encouraged to take leadership roles in scholarship, innovation, and social action.

- **Differentiating with biography: Talent development through non-fiction reading**

Dr. Ann Robinson (USA)

A great biography in the hands of a child will accomplish what no other genre can. Biographies provide gifted children with important role models and ignite their imaginations. They provide a pathway for understanding the talent development of creative and innovative individuals from every part of the world. During this workshop, participants will learn the benefits of using biographies to teach non-fiction reading strategies and to meet the affective needs of talented learners. Examine curriculum guides created especially for teaching biography in the classroom, and leave with an instructional template for any biography you choose. Explore the nature of talent development through the study of biography, and learn creative strategies for inspiring the 21st century's Van Goghs, Marian Andersons, Marie Curies, Nelson Mandelas, Albert Einsteins, and Hans Christian Andersons. Workshop materials include new tools for analyzing portraiture and for teaching with the primary-source documents that bring eminent people to life.

Contents will follow soon

Ann Robinson is keynote speaker 13 August.

- **Nurturing and Developing Spiritual Intelligence**

'A practical guide in helping gifted students find meaning in their lives and education'

Dr. Dorothy Sisk (USA)

This pre-conference will focus on the importance of addressing Spiritual Intelligence as a natural fit for gifted students who want to make a difference. We will examine the traits of Spiritual Intelligence (SI) as defined by Sisk and Torrance in their book *Spiritual Intelligence: Developing Higher Consciousness*. Seven specific ways teachers and parents can use to develop Spiritual Intelligence will be demonstrated. The importance of addressing Spiritual Intelligence will be discussed as a means of meeting one of the strongest intellectual and emotional needs of gifted students, that of finding meaning in their lives and in their education.

Dorothy A. Sisk (Bio)

Ed.D., Ph.D., specializes in the field of gifted education, focusing on creative behavior and leadership development. She is currently a professor in education at Lamar University where she holds the C.W. and Dorothy Anne Conn Chair for Gifted Education and directs the Gifted Child Center. She coordinates teacher training in gifted education. Dr. Sisk has authored and coauthored numerous chapters, articles, papers, and books. She has served as the director of the U.S. Office of Gifted and Talented; president, vice president, and executive administrator of the World Council for Gifted and Talented Children; and president of The Association for the Gifted (TAG). She was the first president of The American Creativity Association (ACA) and currently serves on the board of directors. She also served as editor of the *Gifted International* journal and is an associate editor of the *Journal for Creative Behavior* and *Gifted International*.

Keynote Speakers

Dr. Shirley Kokot

Planting a garden

The title of the talk is taken from a quote by Ray Bradbury. In his book, *Fahrenheit 451*, he wrote that it is important that what you do changes something from the way it was before you touched it into something that's like you after you take your hands away. The difference between the man who just cuts lawns and a real gardener is in the touching, he said. The lawn-cutter might just as well not have been there at all; the gardener will be there a lifetime.

This talk will share Shirley's experiences with those in WCGTC and the broader field of gifted education who, through their legacies, helped her create the only school for gifted children in South Africa – how that happened, the unique approach at the school and the lessons she learned along the way that has led to the continued success of the school. This will hopefully be her legacy to others that follow.

Biography

Dr Shirley Kokot is an educationalist and psychologist who specialises in the field of gifted education and neurodevelopment. She was Associate Professor at the University of South Africa, where she was primarily responsible for teacher training courses in gifted education. She served as President of the National Association for Gifted and Talented Children in South Africa for many years as well as a member of the Executive Committee of the WCGTC for 9 years.

In 1995, she founded Radford House, the only school for gifted learners in South Africa. She has published many research articles, two books on gifted children (one translated into Chinese), another aimed at fostering thinking skills in youngsters and yet another on helping teachers ensure learning readiness in school beginners. She has visited most countries around the world in the course of her work and has presented at many national and international conferences.



Dr. Henry Tirri

“The Shift” – giftedness in the 21st century

Giftedness is conditioned by the human development environment. Up until the 21st century technology and related human development has essentially been linear and geographically local. For 21st century this environment will be exponential and global – it already is. For many of us such current technological and global changes are difficult to envision or even to understand. However, these developments are driven by highly gifted individuals or communities of gifted individuals in enterprises and non-profit organizations globally from Silicon Valley to Tel-Aviv to Beijing. Understanding these modern day Argonauts and their missions offers us our best opportunity to study the types of giftedness that shape and make an impact in the 21st century. It also teaches us something about how to nurture and grow such giftedness. This talk focuses on some of these individuals and technologies they are driving, their fundamental impact as well as the skills we can see evolving in such environments.



Biography

Dr. Henry Tirri is the former Executive Vice President and Chief Technology officer of Nokia reporting to CEO. In that role he was responsible for setting Nokia's technology agenda, owned all forward-looking R&D and drove Nokia's core innovation. He was part of the Nokia Leadership Team from September 2011 until September 2014. Henry began his Nokia career 2004 as a Research Fellow and led NRC Systems Research before being appointed as Senior Vice President and the Head of Nokia Research Center. He has extensive experience in running global research and development activities with sites in 18 countries from China to Bay area. His personal research interests span Artificial Intelligence, information theory, search technologies and Programmable world/Internet of Things.

Before joining Nokia, Henry was a tenured Professor of Computer Science, Head of the Graduate School and the Intelligent Systems Laboratory at the University of Helsinki, leading a world-class research group in probabilistic modeling. Prior to that, Henry held various academic positions including Visiting Scholar at the University of Texas at Austin; Research Scientist at Microelectronics and Computer Technology Corporation (MCC); Member of Technical Staff at AT&T Bell Laboratories; and Visiting Scientist at NASA AMES, where he contributed to the Mars Rover technology for the 2003 mission. Henry has been a Visiting Professor at Stanford University and most recently an Adjunct Professor of Civil Engineering at University of California at Berkeley. He is the author and co-author of numerous academic papers in various fields of computer science, social sciences and statistics and holds many patents. Henry holds a Ph.D. in Computer Science from the University of Helsinki, Finland and an Honorary Doctorate from University of Tampere, Finland. In 2011 he was awarded to become First Class Knight of the Order of White Rose of Finland for his contributions to the Finnish society, business and education.

Dr. Margaret Southerland

A collaborative Approach to Building the Bridges Between Research and Practice

Academic theories and research findings sometimes have a poor reputation with practitioners who can view academics and researchers as being too removed from practice and out of touch with reality. Conversely researchers and academics can hold stereotypical views of practitioners as generalists lacking in expert specialist knowledge or worse can regard schools and children as merely a source of data for academic publications.

Such stereotypes can be destructive as they can lead to mistrust and the valuable contribution that each partner can offer for the advancement of education can be lost. In recognition of these issues there is a growing awareness that practitioner knowledge has a significant role in research but it is acknowledged that mining practitioner knowledge from its social and cultural context can be problematic. Acknowledging each others' value and committing to a desire to work together is the easy part of collaboration, agreeing on how to best move forward together is where both the challenges and possibilities lie. Real and meaningful collaboration can be easy to say but hard to do.



This presentation will explore the possibilities that exist where practitioners and researchers work together. It will examine how early years practitioners might work collaboratively with researchers in a meaningful way to develop and better understand the needs of highly able young children.

This approach offers a realistic but an optimistic outlook as dialogue starts from the familiar – the individual's frame of reference – and moves towards collective, communal meaning making.

Biography



Dr. Margaret Sutherland lectures in additional support for learning at the University of Glasgow, Scotland. She is the Director of the Scottish Network for Able Pupils and Deputy Director of the Centre for Research and Development in Adult and Lifelong Learning. She has 33 years teaching experience in schools and higher education.

She has written in the field of gifted education and is the author of a number of academic papers, chapters and books on the subject. Her book, **Gifted and Talented in the Early Years** has been translated into German. She is on the editorial board of the Korean Journal of Educational Policy. She speaks at conferences and has worked across the UK and with staff and students in Tanzania; Malawi; Korea; Virginia, USA; Slovenia; The Netherlands; Poland and Denmark.

She is an elected member of the general committee of the European Council for High Ability (ECHA) and a member of the World Council for Gifted and Talented Children (WCGTC).

Dr. Sylvia Rimm

**From Underachievement to Wondrous Achievement:
Practical Strategies for Motivating Gifted Students**

Underachievement Syndrome has become an educational epidemic. Many gifted children who sit in our classrooms do not work up to their ability. Patterns which cause underachievement take place at home and in the classroom. Parents and teachers may overlook or misinterpret the symptoms and may be manipulated by children in ways that accidentally maintain the problems.

This presentation will focus on ways that parents, teachers, counselors, and psychologists can identify the patterns of underachievement at home and at school and on practical strategies they can help these children in the prevention and cure of underachievement syndrome.

The TRIFOCAI Model for reversing underachievement will be introduced. Related materials include the **AIM-TO test instrument** for identification, the book **Why Bright Kids Get Poor Grades** and **What You Can Do About It**, and the Guidebook, **Underachievement Syndrome: Causes and Cures**.

Biography

Dr. Sylvia Rimm is a psychologist who directs the Family Achievement Clinic in Ohio and specializes in working with gifted children and adults. She is also a clinical professor at Case Western Reserve University School of Medicine. Dr. Rimm speaks and publishes internationally on parenting, giftedness, creativity, and underachievement. Among her many books are *Education of the Gifted and Talented*, *Why Bright Kids Get Poor Grades* and *What You Can Do About It*, *How to Parent So Children Will Learn*, *Keys to Parenting the Gifted Child*, *See Jane Win®*, *How Jane Won*, and *See Jane Win for Girls*. *See Jane Win®* was a New York Times Best Seller and was featured on *The Oprah Winfrey Show* and in *People* magazine. Dr. Rimm was a longtime contributor to *The Today Show*, hosted *Family Talk* on public radio nationally, and served on the Board of Directors of the National Association for Gifted Children. She has received the prestigious Anne F. Isaacs, Robert Rossmiller and Palmarium awards for her lifetime contributions to gifted children.



Dr. Eunice Alencar

**Creativity in the School Setting:
Challenges, Pathways and Strategies of Assessment**

Creativity is a key resource for individuals and societies. It enables the individuals to take greater benefit from opportunities, and to cope better with challenges and difficulties in their personal and professional lives. Creativity is also a vital element for societies' progress and culture. For this reason the promotion of conditions for the development of students' creative abilities should be a prime objective of schools, and initiatives should be taken to implement educational policies in this direction. However, the encouragement of creativity in the school setting is a challenge. Although there is agreement that students should be creative, most teachers are not familiar with characteristics of learning and teaching environments that promote creativity. A school culture characterized by conformism pressure, resistance to change and the introduction of innovation is also very frequent, as well as misconceptions about creativity, such as its view as a natural talent, present only in some individuals. An overview of the main challenges to the flourishing of creativity in school will be addressed, followed by a description of strategies to infuse the school environment with elements conducive to creativity. Recent instruments designed to assess factors associated with the promotion or inhibition of creativity in educational settings will be also described.

Biography

Eunice M. L. Soriano de Alencar, Ph.D., is Professor Emerita of Psychology at the University of Brasília, Brazil, and researcher from the Brazilian Council for Scientific and Technical Development. She has served as President of the Brazilian Association for the Gifted at the Federal District, and Vice-President of the Ibero-American Federation of the World Council for Gifted and Talented Children. Over the last 40 years she has carried out research projects and published several books and numerous articles, especially on giftedness and creativity. Among her books are: *Psychology and Education of the Gifted*; *Psychology*



of Creativity, How to Develop the Creative Potential, Managing Creativity, The Child in the Family and in the Society, Creativity and the Education of the Gifted, Creativity: Multiple perspectives and Theory and Practice of Creativity Measurement. She is on the editorial board of journals in Brazil and abroad, and is an honorary member of the Brazilian Council for Giftedness.

Dr. Ching-Chih Kuo

Gifted brains: Studies of Gender Differences

This talk will introduce the findings in neuroscience with mathematically and scientifically talented students (MST) in Taiwan. The speaker has chaired a series of research studies from 2006 to 2014, including comparing brain structural differences, brain activation differences on numerical, figural, working memory, and emotional tasks between MST students and their typically developing (TD) peers. Sex differences were found in brain structural and functional tasks. Since the gifted females in this study demonstrated similar levels of math and science achievement as the gifted males, it is essential that the teacher exhibits positive expectations towards all gifted females to develop their mathematical and scientific skills, and understanding such expectations can contribute to increases in student achievement. Knowledge generated by the research mentioned above on mathematically and scientifically talented students has significantly advanced the understanding of their social and neuropsychological characteristics.



Biography

Dr. Ching-Chih Kuo is the Professor of Special Education at National Taiwan Normal University (NTNU). She has received two masters' degrees from NTNU and University of Pittsburgh from 1983 to 1986 and her Ph.D. in gifted education, guidance and counseling in 1992. She has been involved in gifted and talented education for 35 years. Her publications and interests include classroom practice and effective pedagogies, cognitive development of children with special needs, assessment and identification of gifted students, counseling for gifted females, preschool gifted education, and the brain and learning. Dr. Kuo's current research focuses on neuropsychological and imaging studies of gifted students, policy development in gifted education, and a program for gifted and talented university students.

Dr. Kuo has actively collaborated with government agencies and organizations to explore new ways of enhancing support for the gifted. She has been a member of the World Council for Gifted and Talented Children (WCGTC) since 1987 and serves as a delegate since 2000. Dr. Kuo is a frequent participant of WCGTC and APCG events, serving as the Taiwan group leader for many times to attend gifted conferences in Bangkok, Daejeon, New Orleans, Warwick, Singapore, Vancouver, Sydney, and Kentucky. Now she is serving her second term as Vice-President of the Asia-Pacific Federation on Giftedness Limited, an affiliation to the WCGTC, which she was first elected to in 2004. Dr. Kuo also currently serves on the advisory boards of the CAGE, Chinese University of Hong Kong, and Program for the Gifted and Talented by the Po Leung Kuk.

Dr. Ann Robinson

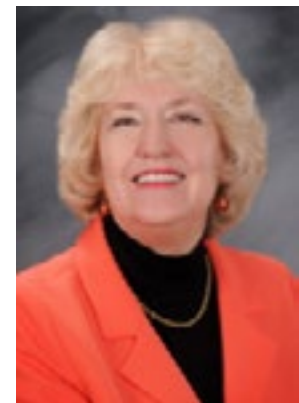
What Makes a Practice "Best"?

Evidence-based Recommendations in Gifted Education

Committed educators want to do what is best for our advanced learners. From every direction we are bombarded with advice about the upbringing and education of talented children and youth. How do we sort through the exhortations to find the practices that stand the test of time, the acceptance of skilled practitioners, and the scrutiny of research? Once we have applied these multiple criteria, what are key examples of practices that remain in our best practice toolbox?

Biography

Dr. Ann Robinson is Past President of the National Association for Gifted Children (NAGC) in the USA, and a former editor of *Gifted Child Quarterly*. She has received the Early Leader, the Early Scholar, the Distinguished Service and Distinguished Scholar Awards from the Association. Ann is currently a Professor of Educational Psychology and Founding Director of the Jodie Mahony Center for Gifted Education at the University of Arkansas at Little Rock. Before she began working with teachers at the university level, she taught high school English and elementary enrichment classes in grades three through six. Over the course of her academic career, Ann has secured over \$20 million in external funding including three Jacob K. Javits demonstration projects in curriculum, instruction, and evaluation. She presents and consults internationally and has held visiting appointments at Wolfson College and the Cambridge Institute of Education, University of Cambridge (U.K.), University of Brunel (U.K.), Monash University (Australia), and the University of New South Wales (Australia). With Bruce Shore, she co-authored two books on practices in gifted education: *Recommended Practices in Gifted Education: A Critical Analysis*, Teachers College Press, and *Best Practices in Gifted Education: An Evidence-based Guide*, Prufrock Press. Her most recent book is *A Century of Contributions to Gifted Education: Illuminating Lives* for Routledge.



Dr. Jonathan Plucker

Critical Issues and Practices in Gifted Education: What the Research Says

Gifted education has a rich history and a solid if uneven research base. As policymakers and educators around the globe increasingly turn their attention to advanced students and educational excellence, the time is ripe for a dispassionate analysis of the field's conceptual and empirical strengths and weaknesses. The purpose of this session is to share the results of two recent reviews of both basic and applied scholarship on giftedness, gifted education, and talent development. Specifically, Prof. Plucker will highlight advances in theories and research, note several promising areas for additional research, and propose next steps for improving the quality and utility of conceptual and empirical work in these important areas.

Biography

Jonathan Plucker is Raymond Neag Endowed Professor of Education at the University of Connecticut, where he teaches in the Educational Psychology and Educational Leadership programs. Prof. Plucker is best known for his work studying excellence gaps, the development and assessment of 21st century skills, and the development of new ways to teach students to be more creative and innovative. A former high school chemistry teacher and elementary school gifted education teacher, he has received numerous honors for his work, including distinguished scholar awards from the National Association for Gifted Children and American Psychological Association. His work is widely mentioned in the media, including CNN, The Wall Street Journal, New York Times, The Washington Post, and Newsweek.



Dr. Leonie Kronborg

Teaching the Teachers to Teach the Gifted:

What have I learned and what do teachers need to know?

Effectively educating gifted students is an issue of social justice. Using research to underpin the study of gifted education, creativity and talent development, I have felt a responsibility to inform teachers and psychologists I teach to understand the relevant theories of giftedness and talent development.

To raise teachers' awareness, knowledge and understanding of the individual differences of gifted students we need teachers to think about developing gifted students from a creative individual paradigm, so that students with gifted potential are intrinsically motivated to advance their intellectual and emotional development and transform their abilities and competencies in supportive social contexts with intellectual peers.

If students with gifted potential and high abilities are in nurturing educational learning environments, with enthusiastic teachers who have positive attitudes towards them and who facilitate challenging differentiated curriculum opportunities across domains, gifted and creative students will reveal their high abilities and engage in developing their diverse talents!

Biography

Dr. Leonie Kronborg, is a Senior Lecturer and Co-ordinator of Postgraduate Studies in Gifted Education in the Faculty of Education, Monash University, Victoria, Australia. Her research interests have focused on education of gifted students, teacher education, and talent development and gender. She supervises Higher Degree Research students with related interests. Additionally, she coordinates a Gifted Educational Advisory Service for parents and teachers of gifted children at the Krongold Centre, Monash University.

She is a past president of the Victorian Association for Gifted and Talented Children and Australian Association for the Education of Gifted Children. She was an elected Executive Member of the World Council for Gifted and Talented Children, 2009-2013 and re-elected 2013-2017. She gained the Dean's Award for Teaching Excellence in 2012 and the Monash University Vice-Chancellor's Award for Teaching Excellence in 2013. She is on the Editorial Board of the Gifted and Talented International Journal and the Australasian Journal of Gifted Education.



Invited speakers

The Ecology of Talent Development in Sport

Kristoffer Henriksen, PhD, licensed psychologist. Associate professor at University of Southern Denmark

Research on athletic talent in sport has evolved from talent detection to talent development with both perspectives focusing on an individual athlete. In contrast, ecological approaches to talent development in sport acknowledge the role of the overall environment in athletes' development.



The Holistic Ecological Approach to talent development in sport acknowledges that some sporting environments are more successful than others in nurturing athletes' development, and stimulates a researcher to describe successful athletic talent development environments (ATDE) and explain their success. With inspiration from systems theory, ecological psychology and cultural psychology, the ATDE is described as a dynamic system comprising an athlete's immediate surroundings at the micro-level, the interrelations between these surroundings and the larger context in which these surroundings are embedded, as well as the organizational culture of the sports club or team, an integrative factor of the ATDE's effectiveness. Using a case study approach, we have examined successful environments in different sports and countries. Together, these studies suggest that although each environment is unique, successful ATDEs (at least within a relatively similar cultural setting) share a number of features.

In terms of applied practices, adopting an ecological perspective will inspire coaches, sporting organizations and sport psychology practitioners to look beyond the individual athlete and focus on developing and maintaining environments that underpin athlete development.

Although these perspectives originate from a sport context, it is a sound hypothesis that the ecological perspective, the working models of the framework, the list of features describing successful environments, and the applied guidelines hold the potential to develop and enrich the research and practice initiatives in other areas of performance

Biography

Kristoffer Henriksen, PhD, licensed psychologist. Associate professor at the Institute of Sport Science and Clinical Biomechanics, University of Southern Denmark. This employment includes a specialized function as Sport Psychology Practitioner in Team Denmark (the Danish Elite sport Organization).

Kristoffer's research in talent development in sport has contributed to an international change in focus from the individual athlete to successful environments. For this innovative approach he received the "Developing Scholar Award" of the International Society of Sport Psychology (ISSP).

As a sport psychology practitioner, he works with international top level athletes from several sports such as Olympic sailing, track and field, Triathlon, Orienteering and motorsport. This work includes working with individual athletes, smaller crews and national teams, as well as coach supervision. His applied work includes themes such as handling stress, training mental skills and creating winning cultures. As a sport psychology Practitioner, Kristoffer has supported athletes during international events such as European and World Championships and the Olympic Games.

Positive Psychology in Education:

How fairness, well-being and performance are mutually depending aspects of future education

Hans Henrik Knoop, Associate Professor, Department of Education (DPU), Aarhus University

For more than two centuries, the world has built educational systems on principles of mass production and industry. In many ways it has been a very successful endeavor, as still more people have learned to read, write, count and have been introduced to scientific, artistic and moral understandings of the world, far beyond what their home surroundings would allow for. Yet, it has also become increasingly clear that education comes with a price, not only as concerns the financial budget but also immaterially, personally, socially. For as education has grown more and more powerful in selecting young people for different paths in life the risks of young people losing self-efficacy, direction and ultimately hope has increased too.



To be sure, competition between people can be great fun, educational, and very productive as we see in sports, gaming and all kinds of voluntary activity in which people immerse themselves in tough challenges (thereby “competing with the challenge”). But there are delicate limits to be respected if to avoid fun turning into to anxiety, and learning turning into desperation. One such limit is the mere level of challenge. As the level increases the fun and excitements goes up too, until a certain point where fun morphs to fear, where learning changes to self-defense, and where phobia and similar auto-immune reactions begin to flourish, rather than the person hosting them.

Intuitively, talented pupils may seem less affected by these problems than others, but indeed, in certain ways they are actually more vulnerable.

With special focus on the gifted, in this keynote Hans Henrik Knoop offers a positive psychology based model and a strategy for bringing new life to education for the benefit of everyone involved rather than the few, and indeed without thereby hurting anyone.

Biography

Hans Henrik Knoop is Associate Professor of educational psychology, Director of the Positive Psychology Research Unit at the Danish School of Education, University of Aarhus, Denmark, and Extraordinary Professor, North West University, South Africa. His work is focused on learning and creativity in education and professional work, having involved more than 15.000 pupils and 2.500 teachers.

For more than a decade Hans Henrik Knoop has been involved in research cooperation with colleagues at Harvard University, Stanford University and at Claremont Graduate University in the GoodWork® Project and as researcher he has participated in development projects for LEGO (1998-2004), Danfoss Universe (2005-2010), SIS Academy (2004-2008) and Royal Greenland Academy (2006), among others. In 2006-2007 contributed to the Danish DR2's programs on talent development in schools, and he was the scholarly anchor of the Danish TV2's reality documentary series “Plan B” (2006-2007) and “SKOLEN – verdensklasse på 100 dage” [The School – WorldClass in 100 Days] (2008) concerning efficient education. “Plan B” received international attention in being nominated for the prestigious television award Golden Rose of Montreux in 2007. From 2007-2010 he was Research Director at the Universe Research Lab in Denmark.

As academic expert he has contributed to Danish governmental committees on cross-curricular competencies and wellbeing (2000-2001, 2009, 2014), pedagogical appliance of IT (2002-2003), pedagogical planning (2004-2005), talent development (2005), the Government's Committee on School Initiation (2005-2006) and the Danish Evaluation Institute's project concerning teaching environment in primary and secondary school (2006). Hans Henrik Knoop is a member of the Board of Directors of the International Positive Psychology Association (IPPA) (2009-2015) and current President of the European Network for Positive Psychology (2010-2014). In collaboration with colleagues at Aarhus University he was responsible for hosting the 5th European Conference on Positive Psychology in Copenhagen in 2010.

He has carried out research based consultancy for a large number of institutions and municipalities in Denmark (1994-) and internationally he has been involved in major EU-financed development projects in Latvia (1993-1999) and Lithuania (1995-1998) as well as contributing to evaluation of development projects for EU (1997-1998).

Hans Henrik Knoop is a requested speaker, who has presented his work through more than 900 invited keynotes and lectures in Denmark and at conferences in many countries including Australia, Austria, Croatia, China, Finland, France, Germany, Iceland, Latvia, Lithuania, Norway, Portugal, Russia, Scotland, South Africa, Slovenia, Spain, The Philippines, the U.K. and the U.S.

He has authored and co-authored more than 160 publications including 8 books.

Bridging Physical and Digital – Enabling every student to succeed

Søren Rågård, Director, Digital Experiences, LEGO Education

By providing the best digital and physical resources for hands-on and creative learning experiences, LEGO Education believes that teachers and students will experience a new way to learn that is more effective, engaging and motivating for students at all levels. The LEGO Group's Mission is to Inspire and Develop the Builders of Tomorrow'



and LEGO Education's interpretation of this is to bring solutions to educators that will enable every student to succeed.

Biography:

With a wide and strong background in Teaching, Digital Technology, Innovation and Leadership, Søren Rågård has a broad experience in leading the agenda of digitalization across different industries and segments, with a dedicated focus on being at the edge of the disruptive digital future, implementation and how it will affect our lives. Søren have played a very active and visible role in the digitalization of the public sector in Denmark and have brought many new innovative solutions to the market.

In LEGO education Søren is Director of Digital Experiences, with the responsibility of driving the digital experience strategy and the digitization of the LEGO education classroom. Through graphical intuitive solutions for programming, LEGO education brings teaching in Science and Technology (STEM) to a new level by implementing the creative thinking and the collaborative mindset of the 21st century skills in a unique way, by supporting the diversity of the students and the modern classroom. With new solutions in Math and Literacy, LEGO education combines and integrates the physical tactile elements with the digital components and interfaces, and raises the bar for the differentiated project based and progressive education.

Søren Rågård is highly influential in driving this unique seamless integration between the physical and digital experience, together with his team of talents and all the highly engaged colleagues across the global LEGO education organization.



How to read the program

In order to use the program optimally we would like to call your attention to the structure of the content. All categories (workshops, symposia, parallel, and poster sessions) are divided into the following topics:

1. Advocating for the Gifted
2. Assessment, Screening, and Identification
3. Creativity Research, Practice, and Future Trends
4. Curriculum and Classroom Practices - MANGLER
5. Developing Future Leaders
6. Educational Technology
7. Giftedness Theory, Research, Practice, and Future trends
8. Guidance and Counseling
9. Homeschooling, Parenting, and Parent Matters
10. Innovation Education
11. Moral Education, Values, and Social Consciousness
12. Partnering Globally for Success
13. Social Emotional Needs of the Gifted, Creative, and Talented
14. Acceleration
15. Twice-Exceptional
16. Underachievers
17. Other (Gifted Adults and Music)

Example:

1 in Europe

1-421, Slovakia, Practical Experience

Author: Jolana Laznibatova, laznibatova@centrum.sk

Co-Authors:

In Europe, the education of gifted children

Title

1 (topic) – 421 (abstract number), Country, Practical Experience or Research

Author: Jolana Laznibatova, laznibatova@centrum.sk

Co-Authors:

In Europe, the education of gifted children

In the program outline you will be able to identify the parallel session by (ex.) 1-421 organized in numerical order.



Workshops

15-46, United Kingdom, Practical Experience

Author: *Diane Montgomery, dmont507@aol.com*

Co-Authors:

Delegates are invited to attend this forum and bring case examples of gifted children with special needs on which they would welcome advice from an informal panel of experts chaired by Professor Dr Diane Montgomery. The cases should be of gifted children with e.g. dyslexia, Asperger Syndrome, ADHD, DCD (Dyspraxia), SEBD (Social, Emotional and Behavioural Difficulties) or a combinations of these. The needs can be for specialist provision or general teaching interventions in regular classroom. Delegate teachers and educators will also be welcome to share examples from their own experience of strategies that have worked. a) Cases can be presented verbally in the forum. b) Cases can be presented in advance in writing to the chair at dmont507@aol.com c) Cases can be presented during and after the conference in writing to the chair and each will be sent a written advisory report. If the case already has a diagnostic report and this is submitted a second opinion report will be sent at no cost. (A similar session was very successfully held at the 2011 Conference in Prague)

Nordic Forum

12-6, Denmark, Norway, Sweden, Finland, Practical Experience

Author: *Kari Kolberg, info@wgccd.dk*

Co-Authors: *Tina Refning Kirsten Balzter Linda Mattson Birgitte Arnvig, Susanne Hoff-Clausen, Ole Kyed*

In the Nordic countries, Denmark, Sweden, Norway, and Finland there has for the past couple of years among other things been an initiative to establish an "Nordic Talent Network". At the same time the small Local Conference Committee for this World Conference has had as a goal for the conference to gain momentum and after the conference open a (small) knowledge or resource center for teachers and parents of gifted children. In this two hour session all conference participants from the Nordic countries are encouraged to participate. There will be brief presentations on the work being done and future plans – but especially the forum will be a place to network and plan for the future. (An extended abstract for this forum is available on our online community)

Use One Protocol With Products Rather Than Multiple Rubrics

2-496, USA, Practical Experience

Author: *Julia Link Roberts, julia.roberts@wku.edu*

Co-Authors: *Tracy Ford Inman*

The DAP Tool (Developing and Assessing Product Tool) is a protocol to guide students in developing products and teachers to use when assessing them. It offers consistency as the DAP Tool includes the same four components for all products: content, presentation, creativity, and reflection. The DAP Tool has no ceiling, and it has three tiers to allow the teacher to differentiate levels of sophistication for students. This session will provide the opportunity to examine the DAP Tool, use the protocol to assess products, and discuss using products to engage students in high-level learning.

Workshop: Ladder of Creativity

3-136, Kuwait, Practical experience

Author: *Mohammad Rawwas, dr.af2012@hotmail.com*

Co-Authors: *Abdulnaser Fakhrou*

Work shop : LADDER of Creativity

Presenters : Dr.Abdulnaser Fakhrou (Kuwait) and Dr.Mohammad Rawwas (KSA)

- Time : 30 minutes
- Goals: helping participants to get information and practices how to increase creativity and enhance thinking skills in a funny, attractive and practical ways.
- Content : Practical strategies to enhance creativity in regular classroom.
- Timetable :
 - Welcoming and introduction (definitions of creativity , history of building the LADDER (5 mnts)
 - Contents of the LADDER. Step by step to get through curriculum of any school subject (5 mnts)
 - Exercises : visual , individual, groups (15 mnts)
 - Wrap up: conclude the most effective points and create action plan to active the LADDER of creativity in participants own districts (5mnts)

Creativity: Assessing, Challenging, Nurturing

3-511, Germany, Practical Experience

Author: *Klaus Urban, klausurban@aol.com*

Co-Authors:

After a short creative activity for/with all participants, which is picked up later on, creativity as a personal and evolutionary power is discussed and theoretical models of creativity are presented. These will be used to formulate stock-taking questions which may be put towards educational settings in order to identify creativity hindering or fostering elements. The question of identifying creative potentials will be exemplified by means of the "Test for Creative Thinking - Drawing Production (TCT-DP)". Finally recommendations for fostering creativity are given, including a new handbook with "Creativities" for educators and parents.



Can you prove that?! Teaching creative writing and languages to gifted adolescents

4-7, Denmark, Practical experience

Author: *Tina Refning, info@wgccd.dk*

Co-Authors: *Jo Hermann Susanne Hoff-Clausen*

This workshop will present some of our practical experiences structured in a theoretical frame.

Rimm's model for relationships between efforts and outcome in the classroom is the off set to explain the dynamic in a class of gifted students where most underachieved. Participants will try an assignment in creative writing and discussion of Hans Christian Andersen's fairy tale "The Shadow" (can be read here: http://www.andersen.sdu.dk/vaerk/hersholt/TheShadow_e.html).

We offer this workshop because it is areas related to science and logical thinking that often identify gifted students. Having all taught at a school for gifted children, we have however seen the gifted supposedly only logical children had hidden or perhaps undeveloped skills in the humane sciences. Often these skills had not been identified or developed either because of lack of interaction with like-minded peers but more often because no teacher had invited the child to perform at a level high enough to take the child from comfort zone to the Zone of Proximal Development.

During this session we will discuss the pedagogical aims of teaching gifted (underachievers) and discuss the importance of discussion and cooperation when you teach a subject that raises questions without definitive answers.

Teaching creative writing and languages to gifted adolescents

4-90, USA, Practical Ideas for Improving Critical Thinking and Writing

Author: *Nathan Levy, nlevy103@comcast.net*

Co-Authors:

This workshop will help educators assist their children in developing fluency of writing and thinking. They will develop options for problem-solving and critical thinking. Participants will gain time-saving strategies and creative ideas. A variety of writing and critical thinking activities that have been used successfully with gifted children will be shared in this engaging, interactive presentation. How :

- To provide for growth in children's imaginative and intuitive functioning
- To encourage divergent thinking
- To give children the experiences of working cooperatively, rather than competitively, on a common problem
- To increase cognitive skills and discrepancy resolution through successful experiences
- To provide enjoyable changes-of-pace for task-oriented learning environments

21st Century skills in the context of curriculum design for individualized programs and differentiation

4-146, Israel, Practical experience

Author: *Hava Vidergor, vidergor@bezeqint.net*

Co-Authors: *Carole Ruth Harris*

This workshop presents aspects of gifted and talented service delivery with focus on teaching approaches derived from theory. An overview of current comprehensive theoretically derived curriculum models will be presented followed by product-oriented teaching strategies, with outcomes directed to higher order thinking, problem solving and enhancing creativity, along with incorporating technology and distance learning. Special attention will be placed on the development of 21st century skills in the context of curriculum design for individualized programs and differentiation in various subject areas including interdisciplinary units, social responsibility, individualized program development for special talents, language arts, and social studies. The session concludes with discussion of adaptation of these models for viable application in different settings.

Seeking the Heights: Nurturing, Cultivating and Celebrating Maori Student Achievement

4-486, New Zealand, Practical Experience

Author: *Laura Swan, lswan@masseyhigh.school.nz*

Co-Authors:

Seeking the Heights: Nurturing, Cultivating and Celebrating Maori Student Achievement

A student and teacher co-lead workshop, this presentation will focus on answering the questions: What does it look like to achieve as Maori? What contribution are a new generation of students making to their whanau, culture, and society through their achievement? How is achievement and the potential for achievement recognised, nurtured and celebrated for our Maori students at Massey High School? This presentation reports on the identification of gifted and talented Maori students in various aspects of the school setting, bilingual and mainstream Gifted and Talented programmes, and how those students turn their opportunities into achievement pathways for their future.

Exploring the Social and Emotional Needs of the Creative and Talented Programme at Pinelands North Primary School, Cape Town

13-139, South Africa, Practical experience

Author: *AnnMorton, principal@pnps.co.za*

Co-Authors:

The Creative and Talented Programme at Pinelands North Primary School, in Cape Town, South Africa has been running since 2008, and has been continually modified to meet the changing needs of our diverse pupil population. Ann will give the history of the Creative and Talented programme she developed in 2007, share her curriculum based on ideas from Jeannette Plaque Parker and share the three aspects of learning: social and emotional development, thinking skills use, general knowledge and problem solving, that make up the programme but the focus will be on the social and emotional development of the children participating.

We have worked with some of these children for as long as 5 years and have therefore chosen to investigate the impact of the social and emotional learning of the children and their ability to articulate their thoughts and feelings, within these lessons and throughout their school day. Our data consists of pupil questionnaires, video clips of lessons, and parent and pupil reflections, guided by the two staff who have taught them for sometimes as long as five years. The workshop presenter, Ann will share the data gained and the children, will through a video recorded demonstration lesson, reflect on their thinking, and social and emotional growth over the years.



Symposia

The Gifted Children Effect on the World Economy: A spark of hope for funding special education programs

1-190, Mexico, Research

Author: *Maria Elena Labastida Tovar, melabastida@anahuac.mx*

Co-Authors:

It is argued among economists that for boosting economic growth, a relevant factor that governments and firms need to take into account is to increase their competitiveness vis-à-vis their trade partners in the world economy. Yet, for this competitiveness to be achieved, a relevant variable needed is cognitive capital. An important body of literature has showed that it is the intellectual class, the individuals at the 95th percentile, which most contribute with their cognitive capital to the positive relationship between cognitive ability and economic growth. Intelligent wealth as coined by Lynn & Vanhanen is an essential component of national wealth. Despite the evidence, gifted children are still lost in the standardized public education system path. They are not identified, diagnosed appropriately or provided with the gifted education special programs they need so their intellectual potential can flourish. The purpose of this study is to find further empirical support on how national IQ but mainly cognitive ability at the 95th percentile is positively correlated with economic growth when mediated with two 17 variables: competitiveness and high achievement in science, technology, engineering and mathematics. The empirical methodology employed is structural equation modeling. Governments and firms that are interested in increasing their competitiveness in the world economy do need to act promptly by investing in special education programs for gifted children.

Teach and Evaluate for Success: Fostering Talent Development

2-118, USA, Practical experience

Author: *Rhoda Rosen, s-corwith@northwestern.edu*

Co-Authors: *Susan Corwith*

Educators often struggle with identifying the next academic step that will best meet an advanced student's needs, where to find that next academic opportunity, and how to establish a seamless, vertically aligned, educational pathway. Join us for a discussion about research and best practices to develop academic talent and help educators measure growth, particularly for students who reach the ceiling of grade-level assessments. Learn how to use diagnostic testing and prescriptive instruction effectively and efficiently - pre-assessment; individualized academic student plans; creative, rigorous and process-oriented, student-centered learning experiences in school and supplementally; and growth-focused evaluation - to help students achieve academically and develop psycho-social skills necessary for success. Learn to use a diagnostic testing and prescriptive instructional model to define frameworks for success for both students and educators. Sample rubrics, evaluation tool, and activities for developing creative thinking skills in the classroom will be provided.

Global Partnerships to Adapt and Validate the DISCOVER Performance-Based Assessment of Creative Problem Solving in Thailand and Chile: Research Results and International Procedures

2-502, Chile & Thailand, Research

Author: *June Maker, junemaker@hotmail.com*

Co-Authors: *Maria Cecilia Jara Usanee Anuruthwong*

In 1992, because of a concern with the underrepresentation of children from low income groups and diverse cultures in programs for gifted students, Maker and colleagues began the development of a unique assessment of creative problem solving that includes hands-on activities in a group setting with observers. Research on the assessment has continued for the past 22 years, including studies of reliability, concurrent validity (comparison with group-administered and individually administered IQ tests, creativity tests, and teacher judgments), and predictive validity.

Methods included correlational studies comparing sub-tests and total scores on existing tests with sub-tests and overall scores on DISCOVER and studies using linear regression to evaluate the effectiveness of the assessment in predicting students' grades and scores on state and national standardized tests of achievement.

Results of these studies showed that the assessment has high reliability, including 96% agreement on the highest ratings (indicating giftedness), and that expert observers have higher agreement than experienced and novice observers. Studies also showed high correlations between activities in DISCOVER and sub-tests of other measures of the same construct. Predictive validity studies showed that DISCOVER was effective in predicting students' grades and achievement 6 years later, and a recent study comparing DISCOVER and the Raven Progressive Matrices showed that both instruments were significant predictors of achievement in Navajo students: the Raven explained approximately 19% of the variance in achievement while DISCOVER explained 46% of the variance.

Implications for practice include the application of the assessment in different countries and with varied cultural groups. Based on these results, we also recommend the development of additional assessments in the talent areas of music, bodily-kinesthetic, science, and technology.

In this session, we will describe the implementation and validation process in Chile and Thailand as well as plans to develop and validate new assessments of creative problem solving based on the same principles.



The Assessment and Promotion of Creativity Worldwide: Past, Present, Future

3-265, USA, Research

Author: *Bonnie Cramond, bcramond@uga.edu*

Co-Authors: *Elizabeth Fairweather Sarah Sumners*

As our world becomes more complex and our problems more global, creativity and innovation have become more valued commodities. Centers and programs designed to enhance creativity are proliferating, and the number of scientific studies have steadily increased. Valid and reliable assessment is a part of all of the studies as a key means of evaluating people's levels of functioning and determining the effectiveness of programs. Thus, this presentation will report on recent research on the validity and reliability of the Torrance Tests of Creative Thinking, which is the most widely used and researched creativity assessment instrument in the world. In addition, it will look forward to new studies, new measures, and new formats that look promising for the future. Also, it will report on the role of assessment in promoting creative development worldwide.

Developing an identification tool for creatively gifted students

17-400, Australia, Research

Author: *Susan Nikakis, snikakis@ceomelb.catholic.edu.au*

Co-Authors: *Carmel Meehan*

Problem explored: Experienced educators believe that they are able to identify conventionally gifted students but what about the creatively gifted students? Even with the Torrance and Lubart (2014) tests of creativity there are blockers to identification. Creatively gifted students may be introverted, suffer poor self-esteem, experience peer pressure to conform or be twice exceptional. With the inclusion of socioeconomic and cultural differences how can educators possibly utilize just one method of identification?

Purpose of study or project: The selection of identification approaches many educators employ for creatively gifted students is often flawed. What is required is to routinely examine individual student profile data rather than group data. This student data can then be utilized when making school-based decisions about the optimal matches of students to varying differentiation or acceleration options.

Methods: Case studies will focus on informed reflection, and on the merits of identifying individual children who are suspected as being creatively gifted.

Findings and results: In some schools 'identification' of gifted students is still executed with an eye to expediency rather than finding "well-rounded" students with "academic peaks." Where does this leave the identification of creatively gifted students? Carmel and Susan have a solution!

Implications for practice: Educators are encouraged to develop strong identification systems which are flexible and dynamic. This ensures use of non-traditional measures to identify creatively gifted students rather than those tests traditionally perceived as appropriate for the 'academically' gifted. What is needed is a reliable instrument which includes students from other cultures, varied socio economic backgrounds and twice exceptional.

Conclusion: Ms Carmel Meehan and Dr Susan Nikakis have developed their own 'down under' identification tools and will showcase them at the conference.

An Examination of the Evolution, Achievements, and Creative Productivity of a Unique School for Gifted Learning

4-14, USA, Practical experience

Author: *Derek Cavilla, derek.cavilla@galileogiftedschool.org*

Co-Authors: *Gillian Eriksson Jana Spitalnick*

The Galileo School for Gifted Learning, a tuition-free public charter school in the USA, emerged from a need to provide students with a gifted learning environment that honors student interests in a culture of highly individualized instruction – something that was not happening with effectiveness or fidelity at many public schools within the community due to intense focus on standardization and remediation as a response to the reform movement that has enveloped the USA's educational system. Taking individual ability and interest into account, teachers at Galileo utilize curriculum compacting, highly differentiated, small-group instructional placements based on academic mastery rather than age, and an infused program of Creative Productivity to enhance the gifted education experience for all students within the school. A balanced approach between academic and affective curriculum also serves to alleviate the effects of asynchronous development resulting in students who perform at the highest levels of proficiency as compared to 17s across the state of Florida. The panel, comprised of one of the founders of the school, the on-site gifted instructional coach, and a master teacher trained in best practices for gifted education, will provide research-based theory and rationale for the establishment and formation of the school, an evaluation of the curriculum and pedagogical practices from both the academic and affective perspectives, and insight into the day-to-day operations and interactions between teachers and students at this highly successful school for gifted learning.

You wouldn't use a hammer to screw in a nail!

4-81, USA,

Author: *Marianne Solomon, marianne@fpspi.org*

Co-Authors: *April Dennis*

Very few students have photographic memories – and that's probably okay. But after early childhood most students aren't naturally creative, and that's not okay. Creative thought is a must. Within formalized education, many students turn off their imaginative thinking as information bombards them. Classrooms are driven by standards, requirements, and testing – leaving little room for play or stretching of the mind. Today's teachers and students must realize that it is not only permitted



to think outside the box, but it's required for success. Once ideas are flowing and students focus in on the quality ideas, creativity can't be stopped!

With the 21st Century opening doors to a world hard to imagine, teachers must be equipped with a multitude of thinking tools to utilize as they develop the minds of the thinkers needed for this new strange world! Students must be provided the thinking tools/techniques needed to encourage the flow of ideas. Once those ideas exist, they must know how to capture the best solution. When these tools are mastered and incorporated into the teacher's toolbox for daily use, generating/focusing tools can be used in every subject to enable students to develop unique ideas. By adding creativity into the classroom, teachers can energize the classroom environment, opening the minds of the students once again to creativity.

Through this presentation, teachers become acquainted with multiple thinking tools to be used in any curriculum as they address the standards and prepare students for assessment.

Global Partnerships to Create Evidence-Based Curricula and Programs for Gifted Students in Saudi Arabia and Chile: Research Results and Practical Recommendations

4-501, Chile & Saudi Arabia, Research

Author: *June Maker, junemaker@hotmail.com*

Co-Authors: *Maria Cecilia Jara Faisal Alamiri*

Saudi Arabia

In 2014, researchers interested in developing curricula for gifted students in Saudi Arabia commissioned a research team from the University of Arizona's DISCOVER Projects to (a) conduct a review of literature and research on curricula for gifted students, (b) make recommendations for curricula for special schools, and (c) create sample curricula and teaching units based on these recommendations.

Methods included hand searches of all abstracts in 6 major journals from 2005 to 2014; reference-chasing; keyword searches; involvement of curriculum experts in 6 other countries who reviewed literature available only in these countries; and evaluation of all studies using quality indicators recommended for special education research.

The resulting synthesis included these conclusions: (a) the content, process, product, and learning environment principles for differentiation in Maker's books are supported by research in a variety of settings, including studies of student perceptions; (b) few teaching models have been studied extensively, and fewer have been evaluated for their impact on gifted students, and (c) researchers need to focus efforts in this area rather than repeating studies of student characteristics.

Practices should include: (a) selection of evidence-based models that can be combined and/or supplemented so they address all content, process, product, and learning environment principles; (b) "localization" of these practices to fit the cultural context; and (c) administrative structures must facilitate, not inhibit delivery of curricula.

Chile

In Chile, a similar study was commissioned by a private foundation (FundacEK) with the goal of finding and developing exceptional talent in gifted children from underprivileged families attending schools in which few opportunities are available. In this review of research, methods also included interviewing Chilean experts in the areas to be served by the foundation: intellectual, musical, artistic, and bodily-kinesthetic. In this symposium, the results of the interviews will be reported to supplement the results reported for the international literature search and provide a unique perspective, both from Chile and from experts in various areas of talent.

Challenges in the development of a gifted program in South America: two countries, three different stories

7-125, Brazil, Practical experience

Author: *Susana Pérez Barrera Pérez, susanapb@terra.com.br*

Co-Authors: *Soraia Napoleão Freita Karen Bendelmann*

How gifted education is viewed in a country significantly impacts the success of gifted programs. The support of government together with long-held beliefs among teachers and the general public are crucial when developing the program. This symposium will present the stories of three programs in Brazil and Uruguay, and will discuss the lessons learned and describe the steps already implemented – from early identification and teacher training to educational services to meet the needs of gifted students.

The first program was developed by the municipal department of Education at Sapucaia do Sul, a town in the Brazilian southernmost state – Rio Grande do Sul – where the process included teacher training, identification of students at their schools and referral to attend two resource rooms placed at two local schools.

The second program was developed by the Education Center of the Federal University of Santa Maria, also Rio Grande do Sul, where students from different public and private schools are identified in their own schools and referred to an 17, where the program was based, offering interest clusters such as Robotics, Dance, Journalism, etc.

The third experience is in Uruguay, a country that has traditionally neglected gifted education. The Ministry of Education is now offering a professional development program in gifted and talented education for the first time in the history of the country.

The lessons learned developing these programs would inspire administrators and teachers in 17 countries to develop their own programs whether in public or private, elementary, secondary or higher education schools.



Conceptualizing Global Giftedness

7-144, New Zealand, Research

Author: Rose Blackett, rose.blackett@gmail.com

Co-Authors:

A wider range of definitions of “giftedness” exists now than ever before. As a sociocultural construct, giftedness is dynamic, and responsive to time and place. There is however, disagreement internationally on what constitutes giftedness, as different cultures interpret exceptional abilities in different ways. Globalization is challenging gifted education. A major challenge is the international diversity in conceptualizing giftedness.

This presentation will offer a snapshot of gifted concepts from around the globe. It is based on a literature review and focuses on groups often marginalized within societies. Some of the concepts presented may not align with the internationally accepted mainstream definitions of giftedness, so participants will be encouraged to reflect on their own knowledge and theories of giftedness. This presentation may lead to the co-construction of new knowledge for participants, about whether we can truly capture a global conceptualization of ‘giftedness’.

The Rise of Lifestream—A Narrative Inquiry on a Community of Low Socioeconomic Status Gifted Students

7-151, Taiwan, ROC, Practical experience

Author: Chia Chao Li, u9210376@gmail.com

Co-Authors: Chao Yi Chen

This study aims to depict the story of socioeconomic status which is unfavorable for gifted students, including me and our lives participating in the story.

The study can be divided into six chapters, the way it depicts the story is through the flow of the stream. The story begins with the source of a lifestream, which is the starting point of the whole story, depicting the socioeconomic status which is unfavorable for gifted student group, it is also the origin of the project to teenager investments and the purpose of my connection in this group. In the chapter of upstream, it explains the aspect, thought and research method of depiction. In the midstream chapter, it tells the story of my five participants and me participating in this situation, reflecting the light of our lives. The story of my life is presented in the downstream chapter, including my family and learning process and finding out the essence of this period of life. At last, in the purpose chapter, I over view the whole process and regard it as a magnificent progress. It is the precious of me talking to myself deeply and relationship which I have been searching for between the knowledge and the group. In the ocean if lives chapter, I explore the journey of my inner hero and depict the expectations after this story.

Evidence about Acceleration: Educating Advocates

7-171, USA, Research

Author: Laurie Croft, laurie-croft@uiowa.edu

Co-Authors: Leslie Graves Lianne Hoogeveen Susannah Wood

Acceleration in its many and varied forms has a robust history of research support and positive outcomes as a programmatic option for gifted and talented youth. Educators, however, may not have had access to accurate information on acceleration. Without this knowledge, teachers and 17 professionals may default to anecdotal or erroneous information. They may not advocate or support one of the many types of acceleration as an appropriate option for students. Educators benefit from professional development that encourages them to reflect on their existing attitudes about acceleration and to review research-based findings about the practice, so that they can provide effective advocacy for acceleration options when they are appropriate for gifted learners. The dissemination of contemporary scholarship promotes effective professional learning, including both independent learning and professional learning communities. Participants will learn more about international research about acceleration, including the new publication, *A Nation Empowered: Evidence Trumps the Excuses That Hold Back America's Brightest Students*, and about ways to promote changes in educator attitudes and understandings related to the practice.

Gifted children in Norway: A case study of how gifted children and their parents experience the meeting with the Norwegian school system.

7-195, Norway, Research

Author: Jørgen Smedsrud, Jorgen.smedsrud@lpd.uio.no

Co-Authors: Kjell Skogen

The study was done in 2012 as part of my master thesis. Research question: “How does gifted children and their parents experience school?” Case study method was applied to answer the research question, and we used open interviews. Even though we have little knowledge about gifted children in Norway, we had an assumption through Skogen (2010) research, which showed that gifted children in Norway don’t thrive or receive stimulation from their learning environment. Teachers report little knowledge and understanding for giftedness in school, and we tend to mix gifted children with children who perform highly, which of course sometimes is the same children.

The main findings in the study were first of all the same as Skogen (2010): Gifted children often are at danger for developing psychosocial difficulties, because we are not able to meet their complex needs. Also we have no knowledge about the children in our school system. Both teachers and educator lack knowledge about this group. We tend to misdiagnose some of the children and focus on negative aspects, instead of their learning capabilities. We have no system for what we do when we identify children as gifted, and therefore we tend to leave them by their own.



We need to implement knowledge in teacher education, general pedagogy and special needs education if we wish to fulfill our goal about inclusion and giving all children the same opportunities to thrive and develop in school.

Policies, Research and Effective Practices of Gifted Education in Hong Kong

7-258, Hong Kong, Research

Author: *Anna Hui, annahui@cityu.edu.hk*

Co-Authors: *Alfred Lau Calvin Wong Karen Cheng*

Gifted education has the mission of providing favorable learning environment and opportunities for the developmental trajectory of gifted students in quality education. In this symposium, researchers will share evidence on the policies, research and practices of gifted education in Hong Kong. The first paper examines how educational policies in gifted education are developed and evaluated. The second paper discusses the dual roles of using concept maps as program evaluation and as identification. The third paper looks into the learning experience of early admission to university of gifted learners and their parents. Implications and discussions will be made.

The Intellectual Enhancement program for gifted students, a twenty years old differentiated methodology with 5,000 cases experience

7-294, Mexico, Research

Author: *Andrew Almazan, almazananaya@cedat.com.mx*

Co-Authors: *Dunia Anaya Asdrubal Almazan Dalynn Somuano Maria Labastida*

Gifted students, the worlds most brilliant minds, despite their importance for science and humanity development have not received an appropriate attention in education. There has been a large educative research lack in this field for nearly 70 years after Lewis Termans genetic studies on genius were made and when the enrichment program was proposed, however thousands of gifted students worldwide have already been lost by this lack of an educative program for them. Therefore a solution for this problem was conceived by creating an educative program supported with more than 5,000 cases of research worldwide. It is called the Intellectual Enhancement Program, official model of several Latin-American largest differentiated centers of giftedness. It was designed to increase intelligence and academic performance with 2,083 annual effective hours at its most intensive branch (11 hours per-day). It is also the first psychological and educative methodology based on research with gifted students in Latin America, and was created as a contemporary reliable educative program designed for brighter minds at schools that have yielded remarkable success cases on gifted children.

This symposium aims to make a deep analysis on the objectives and results that this Program has produced in Latin America's and especially in Mexico's gifted students. It aims to gather professionals that have worked with this innovative program for the last twenty years in the larger centers of giftedness.

A proposal of intervention for improving social interaction in educational contexts.

7-476, Spain, Practical Experience

Author: *Elena Rodríguez-Naveiras, naveiras@ull.es*

Co-Authors: *Maria Cadenas Christina Falcon Natalia Herranz Armando Gonzalez-Posada Isabel Maria Rodriguez*

Manuela Rodriguez Gabriela Lopez Aymes Dolores Valadez Sierra Rogelio Zambrano Guzman Matilde

Duaz-Hernandez

The out-of-school enrichment programs have specific characteristics which differ from the regular educational system. These programs are characterized by creative work which represents a challenge and an incentive for gifted students. Because of this it is not recommendable to use the same educational strategies and intervention procedures that could be used at school: different contexts require different solutions. In this paper we present an intervention proposal for improving the social relations in an out of school enrichment program for children with high intellectual abilities and their families, the Comprehensive Program for High Abilities (Programa Integral para Altas Capacidades, PIPAC). After assessing the social interactions between the participants through observation and a sociometric test, an intervention with a double aspect was designed. The implementation is collective and the activities are the same for all of them, but the organization of the different work groups and the various roles that the participants have to play are decided taking into account the individual characteristics and needs of each child. The participants are ten children between 7 and 9 years old who attend the program consistently. The process of design and planning, implementation and subsequent evaluation of the proposed intervention is presented.

Key words: social interaction, peers, intervention, out of school enrichment program.

The Edna McMillan Scholarships Symposium : Passion, Profession and Parents who Inspire -Putting Parent Potential into Practice. (a TED style talk)

9-272, Ireland, Practical Experience

Author: *Dorothy Sisk, lgraves@eircom.net*

Co-Authors: *Leslie Graves Lucia Riet Rebecca/Howell*

In keeping with the purpose of the Edna McMillan Scholarship: "To Acknowledge, not only educators/researchers, but also the very real hard work, sacrifice and ability/strength of Parents and 17 Advocates to do amazing things for their communities when needed"™-This TED style Symposium will celebrate parents creativity, advocacy, motivation and



above all courage. Introduced and moderated by Dr. Dorothy Sisk (Lamar University, Tx) & Ms Leslie S. Graves (WCGTC President)-Speakers will include the two EM Scholarship recipients, Ms Lucia Riet from Estonia & Uruguay and Ms Rebecca Howell from the UK as well as two Danish participants Ms Tina Refning our LLC WC conference manager and Ms Susanne Hoff-Clausen vice-conference manager. Hopefully, hearing all of their stories, will inspire and encourage 17s to continue in their work, and maybe even follow in their footsteps, creating inspiring spaces of their own.

During this special Symposium- by means of short TED style talks, we honour them, and 17 parents worldwide, by giving them a place at the table (with a microphone!). By allowing them to share/show case what they are doing/have done, no matter which country they are from. Their very real, valuable and important work, and through this, we hope this, we hope to encourage all our populations (ie academics, educators, researchers, interested parties, students and families) to not only see the value of their work but also to see what is possible with determination.

THE CHALLENGES IN IDENTIFYING THE TWICE-EXCEPTIONAL CHILDREN IN NIGERIA

15-52, , Practical experience

Author: *Aniefiok Akpan Ufford, akpanufford2015@gmail.com*

Co-Authors:

The twice –exceptional children abound in every society. These are children who despite their handicapping conditions show some exceptional talent in some areas of human endeavours. These children are often missed out in the identification process because of professional's pre occupation with the readily obvious handicap. The situation has led to their under representation in gifted education programmes and resultant lost of talent. In fact in Nigeria, no student with disability has been placed in the Federal Government Academy, Suleja where gifted students are trained. This paper examined challenges in the identification process which include the developmental lags in cognitive processes, language or motor activities, the general misconception of equating giftedness with scholarstic ability are limited interaction of these group of children with the environment, as a way out of these challenges, this paper advocates for multi- criteria approach to the identification process, involving the use of standardized tests and gathering of information from various sources to complement the tests results. It also stresses the adaptation of the test content to suit the learners need, as well the modification of the form and process of test administration. With this approach, the talent of these group of learners could be identified and this will lead to possible inclusion in special programmes for the gifted in Nigeria

KEYWORDS: Twice –Exceptional, Handicapping, Giftedness, Multi-Criteria

Title: Building the Bridge; Successes in Frustration Tolerance across cultural boundaries.

15-173, USA, Research

Author: *Brian Lux, office@camp-sequoia.com*

Co-Authors:

Abstract:

This author continues action research in twice-exceptional populations drawing from a global population of twice-exceptional learners from ages 8-16. Utilizing a layered framework of intake questionnaires from relevant stakeholders (students, educators, parents, counseling professionals) with corresponding outcome indicators, practical strategies for building frustration tolerance were developed that show efficacy across cultural boundaries.

These strategies (in brief) indicate success of several inquiry-based methodologies including building shared successes, appropriate externalization of internal struggles, and dynamic role-playing. All showed not only short term successes with participants but demonstrated more longitudinal positive impact outside the resident setting as applicable to school, home and transition to post-secondary life. Specifically, frustration tolerance strategies developed were adopted by participants and were seen as highly transferable beyond the established training sessions.

Global participants (who were involved in either 3 or 6 week residential sessions) responded well to innovative strategies for building frustration tolerance, and were able to internalize the framework catering to multiple intelligences across cultural boundaries. The implications for twice exceptional-youth are significant, providing them meaningful and personal tools of empowerment and socially acceptable communication thereby mitigating the potential long-term negative consequences for unresolved internalized frustrations. These findings, and implications for practice are presented in this symposium as an accessible Practitioners Guide on building Frustration Tolerance in twice-exceptional youth.

A Comprehensive Model of School Collaboration for the Identification of Twice-Exceptional Students

15-267, Lebanon, Research

Author: *Anies Al-Hroub, aa111@aub.edu.lb*

Co-Authors:

In this symposium (or paper), we will introduce a multidimensional comprehensive model for the identification of the untapped potential of mathematically gifted children with learning disabilities. We will discuss the apparent contradiction between mathematical giftedness and learning disabilities and how it can be resolved through a characteristic profile of cognitive and perceptual strengths and weaknesses. We will also present evidence that the use of a multidimensional model enables teachers and parents to identifying five subgroups of twice-exceptional learners. The model was used in several schools in Jordan and England. It involves eight criteria of formal and informal assessment. The formal assessment involves a combination of three psychometric tests (i.e. WISC-III or WISC-IV, Perceptual Skills Tests, and dyslexia Screening Test) and one dynamic mathematics assessment. The informal assessment involves collecting data from four different sources: School reports, teachers, parents, classroom observation.



Young artists with Autism Spectrum Disorders: Their learning and creating experiences

15-309, Taiwan, ROC, Practical Experience

Author: Ching-Chih Kuo, kaykuo@ntnu.edu.tw

Co-Authors: Hua-Shan Chung Wu-Peng Huang Leland Lee

An enrichment program for twice-exceptional artists was designed to give the opportunity to study a wide range of topics in an area of visual arts within a creative environment. This Symposium will consist of four presentations. Professor Kuo will report the participation feedbacks, including: 1. The enrichment program offers participants a wider horizon experience out of the box they had explored before. 2. Their positive learning attitudes and active participation helped enrich their talents and skills during and after the program. 3. Most participating youths has been awarded indicating their potentials being recognized and realized in both personal and professional endeavors. The second to the fourth presenters will be three participating youths, Hua-Shan Chung, Wu-Peng Huang, and Leland Lee. Hua-Shan is less likely to speak but very talkative only when talking about her artworks. You will feel an inner battle and desire to seek a friend from her artwork. Wu-Peng is a poet and artist. In his presentation, he will introduce his experience in visual creation and his current concern that art should reflect reality. Leland's presentation is about his Amazing Grace Amazing Art! It will start from Leland's art exhibition in Rome last year meeting Pope Francis and traveling back to Germany's flower exposition.

Holistic assessment: Its management, utilization and benefits in the field

17-232, USA, Practical Experience

Author: Trevor J. Tebbs, trevor@tebbbpsychology.com

Co-Authors:

When facilitating healthy empowerment via realization of potential in gifted pre-K / postsecondary youth, a paucity of professional knowledge regarding their exceptionalities and needs is often encountered. When pursuing appropriate services, I take a holistic approach, purposely striving to expand knowledge and deepen understanding in homes, schools, health centers and wherever else this population is observed. This has led to years of "Action Research", e.g., interviews with many young people, parents, teachers, school psychologists and 17 professionals in educational and clinical settings; conducting comprehensive holistic psychological evaluations and writing positively didactic reports. Private interdisciplinary research, attending conferences and teaching workshops worldwide has augmented these activities. The most important result, and, ergo, what it implies, is reflected in growing numbers of better accommodated, challenged and more fulfilled clients, relieved parents and/or 17 advocates sustained by a new understanding. This research gave birth to a methodology and a supportive software program developed in collaboration with the Institute of Gifted Child in Ukraine. Both promote the multiple benefits derived from gathering, presenting and explaining rich academic and non-academic data to key players and decision makers alike.

How saving education can save the world

17-266, India, Practical Experience

Author: Kiyanush Karanjia, kiyanushk@adityabirlaworldacademy.com

Co-Authors:

In today's world, one thing dominates the first-25-odd years of a person's life - the dangerous insatiable need for marks,

Today's education system is no longer the saviour of the masses. Instead, it is the bane of childhood, the friend of future developmental ailments, a medium for ultracompetitiveness, and, in some truly unfortunate cases, the enemy of the gifted. Here's why. Due to an undying thirst for marks, people no longer go to school to get educated. They go to get marks, and have to suffer years of unnecessary work they don't like, to get those grades. This robs them of their childhood, which is comprised of vital years, in which children must play. This prevents them from developing issues like hypotonia/low muscle-tone. The ultracompetitive "tiger-moms" end up pushing their offspring into this swirling mess none can avoid. Even worse, is the fate of education "few want to learn" anymore. To get to a point where you are "allowed" to learn what you want to, you go through hell. The gifted must go at the same pace as the mainstream in certain countries, instead of using their gift, and excelling early in what they were born to do.

The solution lies in abolishing the marking system. Learning is free "having to be allowed" to learn what you want to, is wrong. That's what being gifted is all about - having an inventive, advanced mind at a young age. Most gifted people know what they want to do from a young age - Why stop them from starting as early as they want to?

Exploring Spiritual Intelligence from a Multicultural View

17-512, , Practical experience

Author: Dorothy Sisk, siskda@lamar.edu

Co-Authors: Eunice Alenca June Maker Bob Seney Sandra Kaplan Kristi Kowalske

E. Paul Torrance

This panel of six individuals who are co-authors of a special issue of Gifted Education International will explore the emerging field of spiritual intelligence from the indigenous contribution from Brazil with Eunice Alencar, the wisdom of the the Kabbalah with Sandra Kaplan, the Anglican view with Bob Seney, performance assessment with June Maker, a case study analysis of a spiritually intelligent adolescent with by Kristi Kowalske, and spiritual intelligence as defined by E. Paul Torrance and Sisk with Dorothy Sisk.



Parallel sessions

Advocating for the Gifted

Beware the Trojan Horse: A Critical Discourse Analysis of the Common Core State Standards

1-88, USA, Research

Author: *Yee Han Chu, yeehan.chu@und.edu*

Co-Authors:

The Common Core States Standards (CCSS) have been adopted in a majority of the jurisdictions in the USA. The CCSS does not provide any recognition of the specialized needs of high ability students. CCSS do, however, borrow considerably from the language of gifted education. The standards purport to cultivate higher-order skills that support innovation. Does the CCSS use of this language mean that the promise to provide educational excellence extends to high ability students? This study uses critical discourse analysis to examine how language and concepts integral to the understanding of gifted education have been used in the CCSS and their supporting literature. The study concludes that many of appropriated gifted concepts have been changed by the CCSS to mean something 17 than what has been commonly accepted in the gifted education community. Often, the changes in meaning are not apparent from the standards themselves, but must be discovered through a review of documents upon which the standards are based. The study provides a warning for gifted educators that the use of the language of gifted education does not mean that the needs of high ability students have been considered or incorporated into the CCSS. Perhaps more importantly, the coopting of the language may make it more difficult to advocate for the retention or development of differentiated programs for high ability students because it creates the false impression that such programs are no longer necessary.

Gifted Education in South Africa: The Perceptions of Principals and Teachers

1-131, South Africa, Research

Author: *Marietjie Oswald, mmoswald@sun.ac.za*

Co-Authors: *Jeanne-Marie de Villiers*

Despite progressive policy and concerted effort from the South African government to transform the education system to ensure quality education for all students, education is not making the grade. The South African model of inclusive education calls for the respect of differences in students and for enabling educational provision for all. In more recent documents the gifted student is mentioned as one category of exceptionality when curriculum differentiation is discussed. From previous research it was, however, evident that the gap between policy development and implementation remains a challenge in South African schools and classrooms.

In light of this, our study explored the perceptions of eight primary school principals and sixteen teachers in the Foundation Phase (Grades 1-3) concerning gifted education. The inquiry was conducted as a qualitative interpretive study. Data collection methods included individual semi-structured interviews with the principals and two semi-structured focus groups with the teachers. Qualitative content analysis was employed to reveal themes constructed from the data. Despite their diversity in terms of culture and language all the participants acknowledged the marginalisation by default of gifted learners. These learners were not receiving appropriate education. The country's propagation of democratic and inclusive education should not confuse equal with identical but rather work from a notion of equality of challenge, where the learning experience is linked to the potential achievement gap. A refocus on gifted education was necessary for education authorities and practitioners.

Mathematical Abilities Exposed During Problem-Solving: Are High-Achieving Students Necessarily Mathematically Gifted?

1-145, Sweden, Research

Author: *Attila Szabo, attila.szabo@stockholm.se*

Co-Authors:

Despite increasing emphasis on the education of gifted and talented students, we still have limited empirical data about their mathematical abilities during problem-solving. Moreover, teachers usually consider that high-achieving students are as well mathematically gifted.

The present study focuses the interaction of talented pupils' mathematical abilities, by investigating remarkably high-achieving students (16-17 years old) from Swedish secondary school in the context of challenging problems

The students were observed individually during problem-solving activities and every observation was followed by a contextual interview. The transcriptions underwent qualitative content analysis; the basic patterns in the students' solutions and verbal utterances were coded and categorised according to a scheme which was developed in order to identify the mathematical abilities focused in the study.

The analysis shows that a specific ability, i.e. mathematical memory, is critical for the choice of methods and thereby also for the success of the problem-solving activities. If the initially selected method does not lead to a desired outcome, the students find it very difficult to modify it; thus, the participants were not acting flexibly when solving new and challenging problems. The study confirms some qualitative differences in problem-solving between high-achievers who are not essentially gifted and mathematically gifted students.

The results indicate that pupils should be taught more general and flexible approaches to problem-solving, and pupils should also be encouraged to elaborate their solution methods through discussion and explanation.



Representing the Underrepresented: Exploring the Impact of an Academic Enrichment Programme on Second-Level (Aged 13-17 Years) Students from Socio-Economic Disadvantaged Schools in Ireland

1-156, Ireland, Research

Author: *Elizabeth Breslin, eileen.breslin2@mail.dcu.ie*

Co-Authors:

This research paper focuses on 'Aiming High' an initiative launched by the Centre for Talented Youth, Ireland (CTYI) in 2010 which aims to target high-ability, low-income second-level (aged 13-17 years) students from socio-economic disadvantaged areas within Dublin, Ireland. The need for such a programme, and in turn, for such research developed from an awareness regarding the under-representation of students from areas of disadvantage within programmes focusing on the development of academic talent. The study purposes to explore the impact of the initiative by applying a qualitative case study methodology and through the use of a number of research methods, (questionnaires, interviews, & focus groups) with different sets of research participants (students, parents & schools) and across a number of years (2011-2015 Symposia). The research findings indicate four key themes; academic, social, and personal benefits together with a small number of negative implications. This case addresses a deficit in the literature calling for strategies focusing on the talent development of high-ability, low-income students (Olszewski-Kubilius and Clarenbach, 2012) through the presentation of a detailed description of this programme. The insights from this case study provide important lessons about this special population of students should the programme wished to be replicated in the future.

Best Practices for Advocating for Gifted Children

1-201, USA, Practical Experience

Author: *Julia L. Roberts, julia.roberts@wku.edu*

Co-Authors: *Lynette Baldwin*

Advocacy for children and young people with gifts and talents is so important, yet many parents and educators are reluctant to speak out on behalf of this special population. This session will highlight best practices for advocates to know and be able to use in order to be effective. It will focus on setting the goal, crafting the message, developing relationships, and using excellent written and oral communication. Planning plays a very important role in launching an advocacy campaign at the school, school district, state, or national level. Important consideration for advocacy is that the number of advocates matters. This session will describe characteristics of effective advocates, one of which is being willing to persevere. Presenters will share examples of practices that lead to successful advocacy as well as to practices to avoid when advocating, and these examples will be ones described in the literature on advocacy and from experiences as advocates.

The Leiden Approach

1-215, Netherlands, Practical Experience

Author: *Lineke van Tricht, lineke@bureautalent.nl*

Co-Authors: *Phil Rhebergen Lilian Snijders Nathalie van der Arend Laura Rijsbergen Maarten van der Plas*

In Leiden some schools, some experts and the city council were working on gifted education separately. The idea came up that we could offer good education for gifted children from 0-24 if we started to cooperate. That's how the Leiden Approach was born. In 2013 we had a symposium during which groups were formed who wanted to cooperate in their field of work. In December 20 Symposia and January 2015 an agreement was signed by around 60 parties. The collective goal is to come to a leading, evidence-based approach that allows gifted children to flourish and helps them complete their schools successfully.

We want to reach that goal by working on diagnosing, tailor-made programs, coaching and transfer. We are also working on developing a community learning centre that offers materials, activities, training programmes and a list of experts. National and international research will be a part of the Leiden Approach.

At the WCGTC we would like to show what we have done so far and how we want to reach our goals. We would like to set an example and inspire 17s to start a productive network like this one.

Giftedness in Norway; The Bothersome Children

1-223, Norway, Practical Experience

Author: *Jan Terje Bakler, jt@fabulinus.no*

Co-Authors:

Giftedness is not acknowledged in any part of the Norwegian society. There is no mention of high intelligence or giftedness in the legislation on education or government white papers with but very few exceptions. The subject of gifted and talented is not in the curriculum in teachers education, special education or for psychologists.

There is no programs for gifted children in public or private schools 17 than local initiatives for talents in mathematics. Nor is it endorsed in sports, art or music, and children with such talents are depending on private initiative and resourceful parents, in combination with a teacher who recognises giftedness and talent, and school management supporting this all the way through the education of the students.

This session will present the results of a study of the situation for gifted and talented children in Norway, and examples from the authors first hand experience with supporting schools, psychologists, psychiatrists and parents will be used to illustrate the situation further.



Economic Arguments for Gifted Education: Persuading Policymakers with Human Capital Data

1-279, USA, Practical Experience

Author: *Pamela Clinkenbeard, clinkenp@uww.edu*

Co-Authors:

PROBLEM: while most of us in the field are deeply committed to research and practice re: gifted and talented children, policy-makers who fund such activities may need to be convinced with arguments on economic outcomes and development of human capital. **PURPOSE:** to look at advocacy through an economic lens, summarize several economic arguments (data-based and rhetorical), suggest research directions, and offer a strategic plan for making these arguments to various groups. **METHODS:** human capital arguments (including gifted education and more broadly) from a variety of sources will be presented, including documents of WCGTC countries, World Bank, OECD, and EU. A brief methodological overview of economic research on education, models of successful arguments, and research suggestions will be shared. **FINDINGS/RESULTS:** Most nations make human capital arguments for the importance of education. Economics research on education focuses on outcome variables that gifted education researchers rarely consider. Policy research on early childhood education uses economic arguments successfully. **CONCLUSION/IMPLICATIONS FOR PRACTICE:** in order to persuade policy-makers to fund gifted education, we need to communicate economic benefits of gifted education (one strategic plan provided). Whether polishing our rhetoric or collecting economic outcome data, we need to make a clear and compelling case for gifted education to 17 education groups, to business leaders, and to governmental entities.

From a Nation Deceived to a Nation Empowered: What Has Changed?

1-290, USA, Practical Experience

Author: *Susan Assouline, susan-assouline@uiowa.edu*

Co-Authors: *Ann Lupkowski-Shoplik*

A Nation Deceived informed us of research-based practices for challenging academically talented youth. A Nation Empowered tells the story of how well we have applied what we have learned. The purpose of A Nation Empowered is to inform educators, parents, and policy makers of current research on acceleration and how that information has been applied to educational policy throughout the nation. The purpose of this presentation is to present the 20 forms of acceleration, review the robustness of the research findings, and address new issues that have surfaced over the past decade in light of the evidence that refutes these excuses. The 20 forms of acceleration will be presented and case studies of the most effective forms (single-subject and whole-grade) will be discussed. The results are conclusive: acceleration is effective. The question is not, should we accelerate; rather, why aren't we implementing this practice more often?

Narratives on Intuition, Grit, Discovery and Acceptance

1-377, USA, Research

Author: *Joy M. Scott-Carrol, joymaria57@outlook.com*

Co-Authors: *Neeraj Kulkarni Jennifer Quamina*

Purpose: The presenters will summarize findings from two narratives to be published as chapters in the edited book, "Running the Long Race in Gifted Education: Narratives and Interviews from Culturally Diverse Gifted Adults", (Editors Scott-Carrol and A. Sparks (USA)". Potential contributing chapter authors were selected if they met certain criteria: minimum 24 years of age; identified as gifted or had participated in gifted/talented programs as children; and, able to communicate compelling insights on navigating high intelligence in childhood and adulthood. **Problem:** Foreign born individuals interested in submitting manuscripts and not exposed to gifted and talented programs in their country of origin, were selected if the compelling narrative introduced new knowledge or expounded upon existing knowledge useful to the gifted education community in general, and applicable within the country they represent. **Findings & Methods:** In "The Pursuit of Intuition: A Narrative of Grit, Kulkarni, a medical doctor educated in India and currently a doctoral candidate in biomedical engineering, describes how a highly gifted and highly educated individual pursues his specialized dream when faced with obstacles,---by methodologically and intellectually distancing himself from hurtful situations, couching an approach that reflects his culture. Quamina, presents a unique narrative in "British, Gifted and Disabled: A Personal Narrative of Discovery and Acceptance". Finally identified as gifted in adulthood, Quamina discloses a rarely heard perspective on her adult identification. Her narrative is complicated by twice-exceptionalities: being highly gifted and coping with a unique disability in her youth, and adulthood. **Conclusion:** Both are compelling narratives appropriate for multiple audiences.

1 in Europe

1-421, Slovakia, Practical Experience

Author: *Jolana Laznibatova, laznibatova@centrum.sk*

Co-Authors:

In Europe, the education of gifted children is currently being approached with much care. In the beginning, all activities towards the support of giftedness were affected by the attitude that "it is elitism," or that there is no need to support the gifted, because "they are able to help themselves," as well as the declaration that "every man has talent." The system of "unified school" remains thanks to an egalitarian approach to education deeply rooted in the minds of the laic, teachers, and psychologists. Promoting the talent and care of the gifted has a marginal importance in the educational system of several central European countries / Slovakia, Czech Republic, Poland, etc. / Many educators believe that schools should pay more attention to the trouble-making children, hyperactive children, children with behavioral problems and children with learning



disabilities. These days gifted children are being integrated or included in the classrooms, therefore specific approaches and practices in the education of gifted children are harder to enforce. Nevertheless, we consider the promotion of education of gifted and talented children and students an essential strategy in schools, relevant institutions, ministries or government of progressively thinking countries. Because gift and talent is a phenomenon to be discovered, promotion and development is needed to ensure optimal conditions for all-around development and success in life. Because they are our future.

Common Core State Standards and Gifted Education Models: Relationship Opportunities between Federal Education Initiatives with Gifted Education Models and Systems for Achieving Instructional Differentiation

1-468, USA, Research

Author: Bronwyn MacFarlane, bdmacfarlane@ualr.edu

Co-Authors:

A theoretical basis exists for the implementation of the 21st Century Skills, the Common Core State Standards, and the Next Generation Science Standards Initiatives in connection with gifted education models and systems. Opportunities for substantive relationships between gifted education and American federal education initiatives can be built with an overt focus on the shared intent of the standards initiatives and the talent development goals of gifted models and systems. This session will focus on the steps necessary for supporting this applied relationship in order to achieve educational differentiation in the classroom for high ability learners.

This theoretical discussion and assessment will build upon the comparative content analysis of extant curriculum models in gifted education (VanTassel-Baska & Brown, 2007) and the compendium of systems and models (Renzulli et al., 2009) which should be used as guides for school practitioners to select models and make decisions about curriculum implementation with gifted learners.

Implications for the implementation of the expectations and differentiation of the Standards will be strengthened with professional articulation of a theoretical gifted models undergirding. A continuum of professional development for understanding and articulating theoretical models and systems from gifted education and overtly linking specific models with the implementation of the 21st Century Skills and standards expectations will be paramount for the future of delivering differentiated instruction to gifted and talented learners.



Assessment, Screening, and Identification

Identifying, Selecting and Assessing Students with Giftedness and Talent at the Western Academy in Beijing 2-32, China, Research

Author: *Michelle Parsons-Sim, michelle_parsonssim@wab.edu*

Co-Authors:

The Western Academy of Beijing (WAB) is an international school with students from over 50 contributing countries. WAB needed to develop a sustainable, easily used, multiple criteria E-Checklist that was personalized to our student community, to assist in identifying, selecting and assessing students with giftedness and talent throughout the elementary school from Kindergarten to Grade 5. The purpose was to develop an E-Checklist for teachers to identify, screen and assess our exceptional students so that we could provide ACTIVE differentiated instruction for students from Kindergarten to Grade 5. Developing the E-Checklist was a 4 year process. Cluster teachers and the Enrichment committee had regular professional learning community meetings to refine WAB's E-Checklist. The E-Checklist is an Excel based document completed in collaboration with the Support Services team, Single subject teachers and Homeroom teachers. Students are logged on POWERSCHOOL and differentiated support provided through student case managers. Implementing the E-Checklist has enabled WAB teachers to identify those students who need ACTIVE differentiated instruction and those students who are MONITORED for differentiated opportunities within homerooms, across individual Grades and vertically aligned across the elementary school. The E-Checklist is an evolving document that continues to be refined and streamlined to enable teachers to apply with their New to WAB students. WAB's E-Checklist allows teachers to think critically about their students and to identify ACTIVE and MONITOR enrichment students across individual strands of gifted dispositions. Using an Excel spreadsheet, the selected students can be sorted into different groups for additional extension and enrichment opportunities.

Casting a Wide Net

2-37, USA, Practical experience

Author: *Julia Watson, jwats880@gmail.com*

Co-Authors:

Participants in this session will understand current limitations of quantitative measures for identification and become aware of the necessity of developing a body of evidence in order to include students from under-represented populations in a Potential Pool.

Tools for the 21st Century: A New Instrument for Determining Attitudes toward Ability

2-47, USA, Research

Author: *Antonia Szymanski, toniszym@iun.edu*

Co-Authors: *Laurie Croft*

Much of the research in gifted education is done using outdated tools or those created without psychometric standards. The purpose of this study is to demonstrate the Determining Attitudes Towards Ability (DATA) instrument as a valid, reliable tool as evidenced by field-testing results. The DATA was created according to principles outlined in the Standards for Educational and Psychological Testing. Experts in the field examined the questions for accuracy and two focus groups were conducted to verify the understanding and interpretation of the questions. The instrument was created using factorial analyses to determine the most appropriate subscales based on the factor loading based on responses from 124 initial participants. The field-testing used empirical methods of correlation and ANOVA to investigate differences between teachers based on years teaching, amount of contact with gifted students, and level of education. The field-testing results indicate that the tool is reliable and valid for use in research regarding teacher attitudes towards gifted students. Overall findings from this study indicate that an up-to-date, valid, reliable instrument has been created that will aid researchers in their future investigations regarding teacher attitudes towards gifted students. Implications from this research may reveal new areas of research regarding the relationships between teacher attitudes and various behavioral measures such as providing differentiated instruction or accelerating students. Practical implications may include designing specific professional development training for teachers based on the DATA results as a pre-assessment.

Identifying Highly Gifted Children by Analyzing Human Figure Drawings

2-55, Netherlands, Research

Author: *Sven Mathijssen, s.mathijssen@its.ru.nl*

Co-Authors:

In the present study, human figure drawings (HFDs) of 47 highly gifted children and 73 non-gifted children aged 7 to 9 years were examined. The Goodenough-Harris Drawing Test (GHDT) and Naglieri's Draw-a-Person: A Quantitative Scoring System (DAP:QSS) were used. None of the instruments showed significant differences in drawing-IQ between both groups of children. However, closer examination showed that different items were present in the HFDs of highly gifted and non-gifted children. Out of 135 found items, 30 items were considered to be 'exceptional' and possible indicators for giftedness. These findings suggest that analyzing HFDs on item level may be more helpful in identifying highly gifted children than computing drawing-IQ's. Continuation of this line of research should result in a well-founded diagnostic screening instrument which can be used in a larger test battery; a stepwise scoring system of exceptional items in HFDs, with which highly gifted children can be detected in diagnostic assessment at an early age.



I Think My Young Child Is Gifted: How Parents Identify Giftedness

2-86, Australia, Research

Author: Anne Grant, anne.grant.education@gmail.com

Co-Authors:

Recent discussions in the literature have provided information about what behaviours parents identify as indicating giftedness in their very young child. However there has been little discussion about how parents decide, before seeking formal assessment, that certain behaviours potentially indicate giftedness. A combination of professional uncertainty about how parents identify giftedness, alongside reported teacher scepticism about parental identification, create difficulties in satisfactory communication between professionals and parents about a gifted child's learning needs.

This study sought to explore the why and how of parental identification of giftedness before the process of formal identification. The sample was a small group of parents with identified gifted children. A mixed method approach was used with data being collected from a quantitative questionnaire, plus qualitative descriptions about behaviours parents identified as advanced.

Findings showed parents observed developmental differences between their child and age-typical children. Such awareness was fostered from both their own observations and those of 17 adults. Conclusions drawn were that parental identification was a complex process, but as recommended to professionals in the literature, parents also base identification on information from a variety of sources. The implications of these findings are that with evidence-based information about parental identification of giftedness, early childhood educators will be better able to use families understanding of their children to support children's learning and development.

Talent Identification in Dubai: The Development of a Gifted Identification Kit

2-99, Germany, Research

Author: Tobias Debatin, albert.ziegler@fau.de

Co-Authors: Albert Ziegler Heidrun Stoeger Abdullah Aljughaiman Mariam Ali AlGhawi

Education researchers and economists throughout the world acknowledge the importance of identifying and developing individual talents in every society. Yet findings consistently indicate that the talents of young individuals generally go undetected. When individuals' talents are detected, their societies often fail at helping them transform talents and strengths into high achievements and excellence. Individuals and societies pay a high price for such lost opportunities. To prevent this from happening in Dubai and the United Arab Emirates, the Hamdan Bin Rashid Al-Maktoum Award for Distinguished Academic Performance (represented by Mariam Ali AlGhawi) develops in co-operation with the International Research Association for Talent Development and Excellence (represented by Albert Ziegler, Heidrun Stoeger, Abdullah Aljughaiman) a Gifted Identification Kit for the United Arab Emirates. It will reflect recent developments in giftedness research by redirecting the diagnostic focus towards students' learning abilities and motivation. In the contribution we present the underlying identification model and report about first results from pre-studies.

Identifying Gifted English Language Learners in Saudi Arabia

2-122, United Kingdom/Saudi Arabia, Practical experience

Author: Badriah Alkhannani, b.alkhannani.1@research.gla.ac.uk

Co-Authors: Margaret Sutherland Niamh Stack

Saudi Arabia has gone through remarkable development in the last twenty years. The official language of Saudi Arabia is Arabic. However English language proficiency has often been linked to modernisation and development and as such there has been increased demand for English Language acquisition. In spite of this increased demand, in terms of gifted education provision the focus has remained on STEM subjects. In Saudi Arabia, there are supporting educational bodies that are concerned with helping gifted learners in maths and science however there are apparently few equivalent resources provided to support Gifted English Language Learners (GELL). In addition, there is a paucity of research investigating the best practices for identifying and supporting GELL in a Saudi Arabian context.

The present study focuses on GELL in the Saudi context and explores factors related to this group including measures of identification, attitude and beliefs of teachers, teaching practices and perceptions of appropriate support. This presentation will present findings from ten semi-structured interviews with English language teachers in six secondary schools in Saudi Arabia. The main themes from the analysis will be presented. Initial findings suggest that Saudi teachers are in charge of the identification of GELL. However this is not unproblematic as a lack of official documentation combined with teacher beliefs and attitudes may result in potential mis or non-identification of GELL.

Validity and Reliability of an Instrument to Measure Gifted Female's Perceptions of the Learning Environment and Their Attitudes in the Science Classroom

4-137, Singapore, Research

Author: G Sundari Pramathevan, sundari.pramathevan@rgs.edu.sg

Co-Authors:

There is little evidence that the desired features of the learning environment suitable for the gifted exist, and whether there is a difference between technology-based and regular science classrooms. This study was the first in the Singapore context to focus on gifted female students in technology-based science classrooms in a secondary school setting. The purpose of this paper is to report the validity and reliability of a learning environment and an attitude questionnaire used in the study. The questionnaire was administered to 722 students and the responses were quantitatively analyzed for factor structure,



internal consistency reliability, discriminant validity and the ability of the questionnaire to differentiate between classes. Statistical analyses suggested that the questionnaire is valid and reliable for appraising students' perceptions of the learning environment and their attitudes when used with gifted female students at a secondary school in Singapore. Cross-validating the questionnaire makes an instrument available for assessing the effectiveness of technology-based gifted classrooms in future studies and to make meaningful contributions to the fields of gifted education and learning environments.

High-Achieving Māori and Pasifika, Secondary School Boys: Elements Contributing to Their Success

0-143, New Zealand, Research

Author: *Graeme Miller, millers@vodafone.net.nz*

Co-Authors:

In many countries of the world, students from minoritised cultures are under-represented in programmes for the gifted and talented. In the New Zealand context there is particular concern about the under-representation of Māori and Pasifika boys.

This study focused on Māori and Pasifika secondary school boys who were achieving highly in the academic sphere within the context of mainstream boys' state secondary schools in New Zealand. The purpose was to identify the key elements involved in their success in order to inform educators and whānau (extended family) of current and future students.

The methodology was primarily built upon narrative inquiry. The main method of data collection was by interview, both individually and in focus groups. Supplementary methods were questionnaires, classroom observations and analysis of documentation.

The findings suggest the elements most contributing to high academic achievement amongst the students in the study were: family influences, intrapersonal characteristics, and schools and teachers. It seems that success was generally related to the complex interplay of these three components rather than any one facet in isolation.

While there are several implications arising from the research, all are linked to the need for administrators and educators to address the issue of the under-representation of Māori and Pasifika students in programmes for the gifted and talented, in consultation with students and whānau. Policies, practices and relationships need to be examined to evaluate how effectively they contribute to gifted and talented Māori and Pasifika students receiving the academic opportunities they deserve.

Assessment of Advanced Learning

2-159, USA, Practical experience

Author: *Tracy Ford Inman, tracy.inman@wku.edu*

Co-Authors: *Julia L. Roberts*

According to Pre-K-Grade 12 Gifted Programming Standards (2010), students with gifts and talents demonstrate advanced and complex learning as a result of using multiple, appropriate, and ongoing assessments. Educators understand the critical role that assessment plays in providing appropriately challenging opportunities for continuous learning. What exactly does that mean for our world's advanced learners? Programming Standards (2010) argue that educators should "differentiate their curriculum and instruction by using pre- and post-, performance-based, product-based, and out-of-level assessments. As a result of each educator's use of ongoing assessments, students with gifts and talents demonstrate advanced and complex learning." In actuality, few educators know how to "use differentiated pre- and post- performance-based assessments" (Standard 2.4.1) or "differentiated product-based assessments to measure progress of students" (Standard 2.4.2). Participants in the session will examine assessment of advanced learning, provided with practical examples of and strategies for preassessment, formative assessment, and summative assessment, including a protocol for authentic product assessment.

Preassessment is the linchpin of appropriately challenging learning experiences. Studies show an increase in learning gains greater than one-half standard deviation from focus on formative assessment (Black & Wiliam, 1998; Shepard, Hammerness, Darling-Hammond, & Rust, 2005). Some preassessments to be shared include Buzan's Mind Map, Interest Inventories, T-W-H Chart, Venn Diagram, and more. Sample formative assessments will also be discussed. Finally, participants will examine authentic summative assessment strategies, including the Developing and Assessing Product (DAP) Tool protocol (Roberts & Inman, 2015) that guides students in product development, facilitates differentiation, simplifies assessment, and removes the learning ceiling.

A Study of the Correlation between level of IQ, Executive functions and academic linguistic success and study skills among the gifted and talented students.

2-170, Turkey, Research

Author: *Nurcan Tekcan Agca, ntekcan@gmail.com*

Co-Authors: *Oya Gungormus Ozkardes*

Academic success of gifted and talented students may vary due to various aspects. In this study to what extent features such as executive functions, study habits, motivation and language aptitude of gifted students determine their academic successes in the field of language competence is sought.

229 students of a private school named TEVITOL of gifted and talented students have taken part in this study and they are from prep, 9th, 10th and 11 grades. WISC-R IQ test has been administered to determine their IQ levels. All students have 130 or over IQ scores.

To evaluate executive functions Wisconsin Card Sorting Test, Gisd-B Scale, Metacognition Scale and digit repetition subtest of WISC-R have been administered. Besides these tools motivation scale, study habits scale and a language aptitude test have been conducted. For the linguistic success criteria aver ages of Turkish, English (firstforeignlanguage), German or French (sec-



and foreign language) school exam results have been taken into consideration.

For the analysis of the data SPSS has been utilised.

The findings of this search suggest that executive functions related to the linguistic successes of the gifted students could be important in determining the effect of study skills and on their motivational levels. These findings are instrumental in gifted students' awareness of their own characteristics which affect their academic successes.

Teachers' perception of gifted and high achievement students in Mexico

2-176, Mexico, Research

Author: *Pedro Sanchez, psanchez@uady.mx*

Co-Authors: *Rubi Martinez*

Research on perceptions and attitudes of teachers with respect to high achieving students in Mexico and many 17 Latin-American countries is scarce. Arguably, teachers in developing countries are usually more concerned with learning disabilities, school difficulties and academic delay than with the apparently minor issues associated to brilliant and distinguished students.

This work discusses the difficulties in screening for gifted students in the Mexican school system. Particularly, it focuses on perceptions of teachers regarding high achievement students and their difficulties in understanding the various factors associated with school success and the differences between high achieving and giftedness.

Research results from three studies, with teachers in different educational levels are presented and discussed. Perceptions, attributions and beliefs about the behavior, personality, emotional setting of these students are the focus of analysis. Particularly, their views regarding the origins and potential of high school achievement.

Overall results, evidence a lack of training in gifted education, the intrusion of positive social and affective issues in the judgment of high ability, and the importance of discerning between the fulfillment of behavioral and working expectations in the school setting and the true screening for cognitive potentials inherent to the concept of gifted.

Students' Characteristics Leading Teachers to Nominate Them as Gifted: Lithuanian Experience

2-196, Lithuania, Research

Author: *Sigita Girdzijauskiene, sigita.girdzijauskiene@fsf.vu.lt*

Co-Authors: *Grazina Gintiliene Kestutis Dragunevicius Dovile Butkiene Irena Zukauskaite*

Teacher nominations of students are one of the most popular methods used to screen gifted and talented in order to supplement or even replace standardized tests of reasoning abilities. The purpose of this study was to identify student characteristics that might influence teachers' nomination in referring students as gifted. In this study 262 gifted 11-16 old students were identified as gifted according to SPM plus or APM results of a sample of 5602 Lithuanian students. 579 teachers were requested to nominate their students according to some common characteristics of gifted children (i.e. excellent reasoning, ingenious, wide range of interests, rapid learner etc.). The analysis of students' characteristics (i.e., gender, grades, and personality traits) indicated that students' grades predict teachers' nomination in 11 of 15 characteristics of gifted children. Teachers are more willing to assign common characteristics of gifted to students who are more open to experience. Mediating effects of students' gender and personality traits in nomination were analyzed. It is recommended to train teachers through in-service education system to enable them to develop competences in recognition of the gifted and talented students.

A Pilot Study: Can Concept Map Be Used as a Programme Evaluation or Screening Tools for Gifted Students?

2-200, Hong Kong, Research

Author: *Chun Ho Wong, calvinwong@hkage.org.hk*

Co-Authors:

Currently, our gifted programme evaluation merely relies on the self-perceived Feedback Form_SFF on the intended learning outcomes. Traditional assessments cannot evaluate the quality of students' learning, let alone higher-order learning. Besides, screening assessments are pre-designed tests which are difficult to assess gifted students' prerequisite knowledge or differentiate individual mastery of a specific topic. This study investigates the use of concept map_CM in evaluation and as a screening tool for gifted programmes and gifted students. The study obtained data from 10 gifted programmes with 133 gifted students of the Hong Kong Academy for Gifted Education. CM was conducted before and after the programmes. Results supported the validity of CM in programme evaluation with a significant moderate correlation with the SFF. However, CM and SFF did not correlate to test performance. Additionally, CM positively correlates with the programme duration but negatively correlates with the no. of sessions. Results underlie that no single method is perfect for assessment or evaluation of gifted students. CM should be adopted as a supplement rather than a replacement of existing assessments. Results suggested that intensive gifted programme is not most beneficial to students' learning, especially for primary students. Moreover, CM could be used as an instructional and learning strategy during the gifted programme and serve as a formative assessment for both teachers and students.

Gender Specific Differences in Mathematical Performances of Mathematically Highly Talented Children

2-214, Germany, Research



Author: *Nina Krüger, Nina.Krueger@uni-hamburg.de*

Co-Authors:

The aim of this study was to explore gender differences in mathematical performances assessed with the German Scholastic Aptitude Test-Mathematics (GSAT-M) and the Hamburger Test of Mathematical Creativity and Giftedness (Hamburger Test fuer Mathematische Begabungen, HTMB), two well-proven measuring instruments for mathematical giftedness. In the scope of the "Talentsuche Mathematik" around 200 6th graders from three federal states of Germany are assessed annually since 1983. Approximately the top 25% of the tested students participate afterwards in the fostering program for mathematically gifted children (Hamburger Modell, Kießwetter/Wieczerkowski). Data from this best quarter of students of two decades, the eighties and the post-millennial years, were compared in both mathematical tests. Analyses of variance revealed no differences between the decades. Over all decades, boys showed higher point values for the GSAT-M than girls and girls achieved significantly higher point values for the HTMB than boys. These gender differences in mathematical performances of highly talented children could be interpreted as differences in knowledge versus creativity. All calculated effects are small. Further explorations showed, that it was not only an effect of language competences: Significant correlations between grades in mathematics and the G-SAT-M and the HTMB, but no significant correlations with the grades in German were found. These results might implicate, that different assessments and different fostering programs are necessary depending on gender.

Underrepresentation of Indigenous Students in Gifted Education: The Role of Culture

2-218, Canada, Research

Author: *Sal Mendaglio, mendaglio@ucalgary.ca*

Co-Authors: *Jackie Ottmann*

In the field of gifted education, we recognize that giftedness is a culturally bound construct and that it is found in all racial and cultural groups. Nevertheless, indigenous students, such as Canadian First Nations, USA Native Americans, Australian Aborigine and New Zealand Maori, are underrepresented in gifted education programs. A common explanation for underrepresentation is the use of standardized tests for selection of students because tests reflect the majority culture. While the use of tests has received attention to explain this state of affairs, the role of culture itself has not. If giftedness is culturally bound, the conception of giftedness may vary according to cultures. If this is the case, then it is not simply the use of tests but also the conception of giftedness that contribute to underrepresentation of indigenous students. The purpose of the study, reported in this session, was to explore the role of culture in conception of giftedness among a sample of First Nations peoples. The sample consisted of three Elders, seven students, three faculty members and five staff members at a Canadian university. All participants completed a conceptions of giftedness questionnaire followed by an interview. Analysis revealed themes that differentiate giftedness significantly from its conceptualization in gifted education programs. Themes included spirituality, altruism, community, and universality.

Evaluation of EPTS Identification Model According To Some Socio-Demographic Variables

2-235, Turkey, Research

Author: *Ercan Opengin, opengin@gmail.com*

Co-Authors: *Bahadır Ayas Fatih Tokmak*

The Education Programs for Talented Students (EPTS) serves as a university based, after school program at Anadolu University/Turkey. Each year about 28 students who are talented in math and science accepted to the program. EPTS identification model has been used for assessment of candidate students. Since the EPTS emphasizes excellence in mathematics and science, a combination of mathematical ability and scientific creativity is used in the EPTS identification model. This model has been used with little changes from 2007, but it is not evaluated according to socio-demographic variables yet. In this study, fairness of the model has been evaluated by using some socio-demographic variables of participants. The Study designed as a descriptive study which conducted with candidate of EPTS. A questionnaire was designed to collect socio-demographic information of volunteer candidates. The scope of socio-demographic variables is students' gender, sibling number, and their status between siblings, parents' income, and education level. Information was gathered from 171 participants between 288 candidates. There are 24 gifted participants who were accepted the EPTS. Results demonstrate that the Identification Model seems fair based on participants' gender. There are differences between gifted and non-gifted parents' income and education level. There should be some arrangement for disadvantage groups in evaluation process.

Differences in Cognitive Abilities between Intellectually Gifted Students

2-243, Lithuania, Research

Author: *Grazina Gintiliene, grazina.gintiliene@fsf.vu.lt*

Co-Authors: *Sigita Girdzijauskiene Kestutis Dragunevicius Dovile Butkiene Irena Zukauskaitė*

Identifying gifted students is challenging activity. One important criterion for the intellectual component of giftedness is that the child must score in range at or above the 98th percentile of intellectual functioning on a test of intelligence. However this criterion could be flexible because it depends not only on psychometric measure of intelligence but also on existing educational system including program goals. This study explored the structure of intelligence and cognitive abilities across different abilities groups of gifted 12- 16 year olds using the Lithuanian version of Berlin Structure of Intelligence Test for Youth: Assessment of Talent and Giftedness (BIS-HB). Sample of intellectually gifted consisted of 118 students: 62 students with score of General Intelligence (BIS g) in range of 95-97 percentile and 56 students at or above 98 percentile. Confirmatory



factor analysis indicated the structural invariance of BIS model for both ability groups. However means of Processing Speed and Creativity scores as well as Verbal, Figural and Numerical abilities scores were significant higher for group of highly gifted. No significant differences between groups were found for Reasoning abilities and Memory mean scores and also for grade average in mathematics and Lithuanian language. Main conclusion is that interpretation of cognitive abilities for identification of highly gifted children is more relevant than a diagnosis based on a single score of intelligence test.

Identification of Gifted STEM Students in Egypt

2-268, Egypt, Practical Experience

Author: *Nermeen Abou Gazia, yhussein@alalfifoundation.org*

Co-Authors:

Identifying gifted and talented students in science, technology, engineering and mathematics (STEM) subjects is complicated because most identification schemes favour measures of verbal ability and prior attainment. The Al Alfi Foundation's mission is to identify gifted STEM students in Egypt nurture their talents via enrichment programmes and scholarships. They need a reliable and accessible assessment that ignores the impact of the variable quality of teaching experienced by applicants that might result in exceptional students not being correctly identified. There is strong evidence for the correlation between ability in spatial thinking and success in STEM subjects. The Foundations tests a range of cognitive abilities including verbal, non-verbal and quantitative thinking but they particularly focus on spatial ability as a marker of students with ability in STEM. The tests are taken in English or Arabic depending on school. Successful students are offered advanced summer and after-school programmes and each year 5 International Baccalaureate fellowships are provided. Scholarships are available for undergraduate and post graduate students who have demonstrated academic excellence in qualifying subjects. Analysis is ongoing but to date 85 scholars have graduated from leading universities including Imperial College and Columbia University. The Foundation believes that they have a replicable model that would support similar initiatives elsewhere.

"Resource Room" Approach and Increasing Societal Awareness: A Project from Turkey

17-280, Turkey, Practical Experience

Author: *Mehmet Hilmi Eren*

Ayça (Köksal) Konik Dr., akoksal@istanbul.edu.tr

Co-Authors:

This Project is supported by Istanbul Development Agency. The vision of this agency is; working for a global city Istanbul, people-oriented and sensitive to the environment, to be effective, and that a solution to the central direction. The aim of this project is to identify the gifted and talented students in Istanbul (Bahçelievler district) and to give them a differentiated program in resource rooms. The steps of the project are listed below: All elementary school students in the district are given Basic Mental Abilities Test (BMAs) and according to the results, gifted and talented students are identified. Psychological counselors are trained about gifted and talented students by field experts. After that training period, counselors trained the parents and teachers of gifted and talented children. Large group seminars about gifted and talented children's developmental characteristics are implemented in order to increase the awareness of school administrators, elementary and middle school teachers and parents. Twenty five resource rooms are opened in different schools for gifted and talented students. The resource rooms are equipped with mental games and educational materials. The teachers who will work in resource rooms, are trained in depth about program differentiation for gifted and talented students by field experts from universities. All parents of the children who had taken BMAs test were instructed about developing children's thinking skills in the home environment.

On the Importance of Sherlock Holmes for Psychological Work: Techniques in Screening Intelligence Revisited

2-283, Germany, Research

Author: *Sabine Küster, kuester.fahrdorf@web.de*

Co-Authors:

The use of biographies as a means to understand intelligence has a long tradition: Francis Galton, pioneer in psychometrics and personal psychology, used biographies as a basic source. For any work on such texts it is essential to keep philological techniques in mind: Biographies don't tell "the truth"; neither are novels just "inventions". Both mirror the author's knowledge and the readers' expectations. This is especially true for novels of the literary realism, beginning around 1850. Writers focused on everyday life and characters. Since intelligence was a topic of general interest, novels of that time deal with it. They reflect specific convictions concerning intelligence, even before psychological research started properly. Therefore, analysis of these novels can shed light upon the contemporary approaches. Some of them lost their importance within the psychological trends, 17s are thrillingly related to modern convictions. Thus, these roots can help to understand the foundations of our concepts of intelligence. An exemplary approach is possible with the figure of Sherlock Holmes. He is conceived in a manner, which seems directly related to the modern "characteristics of gifted individuals" and was contemporary to the starts of measuring intelligence. Therefore, modern identification practices can be differentiated historically. Furthermore, a deeper knowledge of, how novelists dealt with concepts of intelligence, can support bibliotherapeutic work.



Relationship between Mathematical Ability and Subcomponents of General Intelligence

2-284, Turkey, Research

Author: *Bilge Bal-Sezerel, bilgbal@gmail.com*

Co-Authors: *Nazmiye Nazli Ozdemir*

In this study an investigation was carried out to examine whether there is a relationship between mathematical ability and subcomponents of general intelligence or not. Research participants consisted of 404 fifth-grade and 324 sixth grade students who applied to Education Programs for Talented Students (EPTS) which is a program that is based on university, services after school for elementary and secondary school students who are identified scientifically and mathematically talented by the identification system of the program. Test of Mathematical Talent (TMT) that is composed of general intelligence subtests (series, analogies and rotations) and mathematical ability subtests (logic, measurement, algebra, geometry, statistics-probability) was used to measure mathematical ability and general intelligence. Regression analysis was done for predicting the mathematical ability from some subcomponents of general intelligence for fifth grade and six grade separately. The findings show that three subtest of general intelligence predicted the mathematical ability statistically significant ($p < .05$) for both fifth and six graders. Series subtest had the most contribution to predict mathematical ability ($\hat{r}^2 = .23$ for 5th grades; $\hat{r}^2 = .34$ for 6th grades). General intelligence can explain for 12.2% and 27.3% of the variation in mathematical ability for respectively fifth and sixth graders. As a result, the more knowledge the more contribution of general intelligence on mathematical ability.

Development and Psychometric Properties of Similarity and Relation Based Test of Thinking in Math (SRBTT-M) for Identifying Mathematical Ability/Talent

2-288, Turkey, Research

Author: *Sule Gucyeter, sgucyeter@gmail.com*

Co-Authors: *Serap Emir*

Research on identification issues of gifted and talented students is rare in Turkey. Thus there is a need to develop theory based assessment tool. The purpose of this study was to investigate psychometric properties of Similarity and Relation Based Test of Thinking in Math (SRBTT-M) which was developed according to Similarity and Relation Based Model of Thinking in Math (SRBMT-M). SRBTT-M was developed to identify mathematically talented students. Total 764 middle school students participated in this survey study. SRBTT-M and demographic information form were developed by the researcher were used. Data analysis indicated that the SRBTT-M had a .90 coefficient indicating consistency of scores. Exploratory factor analysis yielded six factors explaining 43% of the total variance and the confirmatory factor analysis results confirmed the factor structure. The findings provided evidence that SRBTT-M had discriminant and criterion validity and was a reliable test. Educators can use the SRBTT-M for identification process of mathematically gifted students at the middle school level. Further researcher can develop SRBTT-M for primary and high school level.

Grade Differences in Mathematical Ability and General Intelligence

2-289, Turkey, Research

Author: *Gulsah Avci, gulsahavci@gmail.com*

Co-Authors: *Selin Bozbey-Esmeroglu*

The purpose of this study is to examine grade differences in mathematical ability and general intelligence. In this study participants consisted of 728 students who applied to Education Programs for Talented Students (EPTS) at Anadolu University in Turkey. Of the sample, 404 were fifth grade students and 324 were sixth grade students. In order to assess mathematical ability and general intelligence Test of Mathematical Talent (TMT) composed of two section was carried out. The first section is included questions based on mathematical knowledge in the area of logic, measurement, algebra, geometry, and statistics-probability. The 17 is included general intelligence subtests as series, analogies and rotations. TMT was used to identify sixth grade students but it was revised and modified to identify also fifth grade students. In this study last version was carried out to sixth graders, the new one was carried out to fifth graders. Their raw scores were obtained to compare the differences in mathematical ability and general intelligence. Data were analyzed by using independent samples t-test. The analysis showed that fifth and sixth graders scored nearly same on mathematical ability ($X \bar{...} = 50.01; 49.99$) and general intelligence ($X \bar{...} = 49.99; 49.99$). The results show that there was not statistically significant differences between fifth and sixth grade students in mathematical ability and general intelligence ($p < .025$). The new version of TMT could be used to identify gifted students

Universal Design for Learning: Honoring the Importance of Affect in Learning and Curriculum Design

0-299, USA, Research

Author: *Martha Decker, m.decker@moreheadstate.edu*

Co-Authors:

Current research in the cognitive sciences suggests the presence of "neuro-diversity" that our brains are as unique as our fingerprints. Universal Design for Learning (Meyer, Rose, and Gordon, 20Symposia) provides a rich framework for gifted learners that emphasizes the importance of affect in learning and curriculum design. All students have differing emotional/motivational profiles and require discrete consideration. In this presentation the three principles of Universal Design for Learning are presented in the context of three major brain networks. Participants will receive an array of resources and materials including the UDL Guidelines from the Center for Applied Special Technology (CAST).



Dutch Students' Implicit Theories of a Gifted Person

0-381, Netherlands, Research

Author: *Trudie Malotaux- Christophersen, Trudiemalotaux@gmail.com*

Co-Authors:

Why do Dutch boys achieve more in science than Dutch girls while in Qatar it is the 17 way around? (OECD, 2011). Would ideas, communicated by social environment, about what boys and girls are capable of, play a role here? In 17 words, is it all in our mindset? Can we do something about this difference at all? (Krabbendam, 2012) Inspired by cross cultural research done by Ziegler et al. (2012) in which they collected data of implicit theories of a gifted person in Kenia and Germany, we collected similar data in the Netherlands. We asked a representative sample of (highly) abled Dutch students in the third grade of secondary school (age 11-13) to draw a very intelligent person and to rate the presence of some characteristics of the person they drew. Using the characteristics mentioned in the study of Ziegler et al., we added some variables as "special programs in primary education", "acceleration", and "language spoken at home", in order to look for indications of correlation between these variables and the mindset. Examining our data we could not resist the challenge of trying to decode the drawings too. In our presentation we will present the findings of this study and discuss those with the audience.

An Analysis about the Student Leadership from Different Perspectives

2-385, Taiwan, ROC, Research

Author: *Sheng-Min Cheng, smzeng@ntnu.edu.tw*

Co-Authors:

The purposes of this study were to examine the differences about the student leadership from the perspectives of students' teachers, parents, peers and themselves. The 274 eighth grade regular and gifted students participated in this study. Every student's leadership was measured by his/her teacher, parent and peers. Besides, they also need to evaluate their traits of leadership and measure their cognitive skills of leadership by themselves. The information about student gender, giftedness, participating extracurricular activities, leading experience, leadership training, academic achievements, and the higher-level reasoning abilities in lives were collected, too. Data were analyzed through descriptive analysis, independent sample t test, and multiple regression analysis. Through the data analysis, the researcher discovered some variables which would make significant differences in teacher-assessment, parent-assessment, peer-assessment, self-assessment and object-oriented measurement leadership. The researcher also found some important variables which would predict the results of the teacher-assessment, parent-assessment, peer-assessment, self-assessment and object-oriented measurement leadership. Based on the findings, researcher made some suggestions for future studies and implementations.



The Applications of Computerised Adaptive Intelligence -Testing in Identifying Talent

2-436, Hungary, Practical Experience

Author: *Kristof Kovacs, kristof340@gmail.com*

Co-Authors:

Computerised adaptive testing (CAT) is a recent development in psychometrics, based on principles of item response theory (IRT). In paper-and-pencil testing scaled scores are calculated by comparing individuals' total scores to the total score distribution of a norm population. IRT, on the other hand, takes into account the probability of arriving at a correct answer on each individual item as the function of ability.

In CAT items are selected from an item bank and the algorithm provides a likelihood estimate after each item response. The selection of the next item is based on this estimate, and this procedure carries on until a stopping criterion is reached. The main advantage of CAT is that the test-taker is constantly faced with items that are selected to match their current ability estimates.

CAT provides a useful tool for screening and identifying talent. An item bank in CAT can be arbitrarily large and since in practice the procedure results in a unique test for each individual, there is no answer key. Since it can be administered in an online environment, CAT can be made available to a very large number of people at the same time.

A talent identification project in Hungary will be presented in which an adaptive IQ-test, measuring fluid reasoning, and filled by a sample of 25 000, is used to identify highly talented high school students.

Analysing Test Scores of Bright and Gifted Students Using Association Rule Mining Algorithms

2-443, Turkey, Research

Author: *Onder Tombus, tombus@gmail.com*

Co-Authors: *Ayşe Cilaci-Tombus Umit Davaşlıgil Serap Emir*

The aim of this research is to find possible inferences between intelligence level, thinking skills, creativity, mathematical ability and emotional intelligence scores on bright and gifted students in the 5th grade, attending the primary school established in Turkey for orphan children in 1873. The project carried out in this school focuses on developing a culture-specific, differentiated program to meet the intellectual, affective and social needs of bright and gifted children, as well as the training needs of their teachers.

To assess the intelligence level Raven's SPM Plus, to assess creativity Urbans and Jellen's test for Creative Thinking - Drawing Production (TCT-DP), to assess mathematical ability, School College and Ability Test (SCAT), to assess thinking skills, Davaşlıgil's Figurative Thinking Skills Test and to assess emotional intelligence, EQi tests were administered. Association rules mining algorithms are used for analysing responses to test questions.

A Study of the Policy and Practices of the National Educational Psychological Service in Supporting the Exceptionally Able Student in Ireland

2-492, Ireland, Research

Author: *Joyce Senior, joyce.senior@ucd.ie*

Co-Authors: *Anne Cleary*

The Education Act (Government of Ireland, 1998) recognises the specific needs of exceptionally-able students and the requirement of specific provision in Ireland. Indeed, Gage and Berliner (1988) calculate that intelligence is 80% inherited and 20% due to environmental factors. In 1998, the National Educational Psychological Service was charged with a role in advising on identifying the individual needs of such students and in helping to encourage a positive response. However, response to date from NEPS in this area has been paltry. This research explored the policy and practice of NEPS in supporting exceptionally-able students. The research design chosen was a mixed-method design integrating both qualitative and quantitative approaches, where five psychologists were interviewed followed by an on-line questionnaire to all 172 NEPS psychologists. Findings suggest, that although psychologists show interest in the area of gifted education factors such as; lack of both NEPS guidelines and an integrated approach to gifted education, together with poor training, both pre-service and in-service, and poor inter-agency collaboration and have negatively impacted on NEPS' provision to exceptionally-able students and schools.

Identification of Gifted Students in Oman: Standardization of GRS, PCA, TOMA-3, and C-TONI-2 on Omani Gifted Students

2-495, Oman, Research

Author: *Ahmed Mohamed, amohamed@squ.edu.om*

Co-Authors:

The field of the identification of gifted students in Oman is fairly recent. Scarce research has investigated the development of different assessment tools to identify gifted students in different age levels. This study is part of a research grant funded by the Research Council in Oman (TRC). The purpose of the first year of the grant was to standardize the Gifted Rating Scales (GRS, Pfeiffer & Jarosewich, 2003), Profile of Creative Abilities PCA, Ryser, 2007), and the Test of Mathematical Abilities (TOMA-3, Brown, Cronin, Bryant, 2013), and the Comprehensive Test of Nonverbal Intelligence (CTONI-2, Hammill, Pearson, & Wiederholt, 2009). The sample of the study consisted of 950 students from cycle 1 (grades 1 to 5) and cycle 2 (grades 5 to 10). The tools showed reliability (Cronbach's Alpha and interrater reliability) and validity (construct and criterion). The results of the GRS showed that teachers rated boys as more gifted than girls in the elementary school. The overall results of the TOMA-3 (for grades 8 to 10) showed that males surpassed girls in mathematical ability. The CTONI-2 results were fairly equal between



males and females. The overall results are discussed in the light of the identification of gifted students in Oman and warrants further research to explore cultural and gender differences.

Keywords: GRS, PCA, CTONI-2, TOMA-3, Gifted, Oman

Analysis of Learning Styles of The Gifted Regarding Diverse Variables

2-500, Turkey, Research

Author: Esin Gungor, goya60@gmail.com

Co-Authors: Esin Avci Oya Gungormus Ozkardes

In this study learning styles of the gifted who are in grades 3, 4 and 5 have been determined. Besides, whether learning styles differ according to their gender, school set, academic success and IQ sub-scores has been examined.

The sample group of the study consists of students from a primary school for the gifted in Istanbul, a total of 60 gifted students, 23 of whom are girls and 37 are boys. Personal Information Form and Grasha-Riechmann Learning Styles Scale have been used to gather data.

As a result of the analysis collaborative, competitive, dependent and participant learning styles levels of the gifted have been found high and it has been observed that collaborative learning style is preferred most. When the gifted have been looked into whether learning styles differ according to class sets, 5th grade students prefer passive learning styles and the 4th graders utilise collaborative learning style more frequently.

It has been pinpointed that learning styles do not differentiate according to variables such as gender, IQ sub-scores and academic success.

Keywords: gifted, learning styles, academic success



Creativity: Theory, Research, and Future Trends

Teaching Students How to Think Not What to Think.

3-18, USA, Practical Experience

Author: *April Dennis, april@fpspi.org*

Co-Authors:

How do you inspire and engage students in solving problems for practical application? The Programme for International Student Assessment (PISA) is administered to 15 year olds around the globe with varying degrees of results. PISA questions do not measure memorization of facts, but rather demand that students draw on knowledge and real-world problem solving skills. What can educators and administrators provide for student success? Skills in stimulating critical and creative thinking and encouraging students to develop a vision for the future will be explored in this session. Participants will learn how to fit their existing lessons into a "problem solving" mindset and apply thinking tools to any scenario. Find out how to challenge students to apply their imagination and thinking skills to problem situations on internationally set, significant social, economic, or scientific issues. Future Problem Solving will be introduced as one avenue in meeting the needs of learners in the 21st century

Investigating How Analogy Is Related to Analytical and Creative Thinking

3-68, Taiwan, ROC, Research

Author: *Chen-Yao Kao, leonardkao@yahoo.com*

Co-Authors:

Analogy items are frequently used in IQ tests, which are mainly considered assessments of analytical abilities. Analogical thinking is also the pivot of many creativity theories. This research, composed of two studies, was intended to examine the relationships between analogical, analytical, and creative thinking through carefully self-designed instruments including analogy items in both multiple-choice and non-multiple-choice formats. The first study recruited 287 sixth-graders from two elementary schools located in an urban area of Taiwan. The second study recruited 582 sixth-graders from 12 elementary schools located across Taiwan. The results of analyses of correlations and partial correlations are as follows. The multiple-choice and non-multiple-choice analogy items were all significantly correlated with analytical and creative thinking. The multiple-choice analogy items had higher correlations with analytical thinking than with creative thinking. However, the non-multiple-choice analogy items had higher correlations with creative thinking than with analytical thinking. The traditional analogical-verbal subscale in the multiple-choice format and the simile sentence completion in the non-multiple-choice format could significantly explain the variance of creative thinking, independent of analytical thinking. All analogy subscales, be it in the multiple-choice or non-multiple-choice formats, could significantly explain the variance of analytical thinking, independent of creative thinking. It was thus suggested that analogical thinking straddled both the fields of analytical and creative thinking. The educational implication for these findings is that the traditional analogical-verbal subscale in the multiple-choice format and the simile sentence completion in the non-multiple-choice format can be employed to enhance both analytical and creative thinking.

Enhancing Creativity by Using NLP (Neurological-Linguistic Programming) and Its Principles

3-79, Israel, Practical Experience

Author: *Shoshana Rosemarin, shoshr@macam.ac.il*

Co-Authors:

The significance of the role of creativity as an essential component of giftedness has long been assumed by most of the experts in the field. The most fertile creations will often be those formed of elements drawn from domains which are far apart.

It is assumed that creativity is a personality variable, and not an ability, and thus it is believed that all students have creative potential that can be identified and nurtured. Imagery, intuition and unconscious activity are found to be associated with the essence and the nurturance of creativity.

Whereas conscious thought may be focused and convergent, unconscious thought may be more associative and divergent. Moreover, while a thought or answer is fully activated if it is both conscious and accessible, it is deeply activated if it is accessible but not currently conscious.

Education tries to reach its goals by creating strategies of approach rather than by trying to understand, support and develop the child's enormously rich inner life.

Based on all of the above insights, the presentation will focus on the introduction of NLP (Neurological-Linguistic Programming) which originated in the 1970' by Bandler and Grinder. Besides its general use as a means to modifying undesirable behaviors, NLP offers modeling tools by which the gifted student can identify specific, reproducible patterns in the language and behavior of effective role models, especially the most creative ones – like Leonardo de Vinci, or Albert Einstein.

Future Problem Solving Brings Critical Elements to Today's Education

3-80, USA, Practical Experience

Author: *Marianne Solomon, marianne@fpspi.org*

Co-Authors: *April Denni*

Multiple studies have recently been conducted to determine the effect that Future Problem Solving Program (FPSP) has had on participating students. Created in 1974 by Dr. E. Paul Torrance, gifted students were taught a six-step Creative



Problem Solving (CPS) process to use in addressing pertinent issues set in the future. Community Problem Solving was later created to involve students in areas of concern within local communities or worldwide, developing leadership skills and public involvement within the participants. Scenario Writing was developed to encourage writing skills while projecting into possible futures.

The three recent studies (Scholastic Testing Services, Inc., Center for Creative Learning, Inc., University of Virginia, Doctoral studies under Dr. Carolyn Callahan) have provided results indicating that involvement in FPS definitely impacts student behavior and civic involvement.

The results of all three evaluations showed a positive effect through participation in FPS. Suggestions that were made by two of the studies for improvement within the program had already been considered and were in place.

After 40 years, FPSP continues to expand and now involves students from over 15 regions of the world. FPS has always been in the forefront of sound educational practice and continues to generate increased interest as more people become aware of the need for creative and critical thinking and problem solving in education. Students of the 21st Century must employ creative and critical thinking through the problem solving process to be successful in the workplace, and FPS proves to be a program capable of providing the necessary elements.

Creative Potential and Self-Assessed Professional Competence in Middle School Teachers

3-83, Poland, Research

Author: *Piotr Gindrich, p.gindrich@poczta.umcs.lublin.pl*

Co-Authors:

The objective of this paper is to investigate the association between creative potential and self-assessed professional competence in the sample of teachers working in public middle schools. Both female and male teachers participated in the study. In order to assess the variables, Creative Behaviour Questionnaire (KANH-II) by Popek and Perceived Professional Competence Questionnaire by Byra and Kazanowski were administered to the sample of 60 teachers. It was assumed that the key dimensions of creative potential were: (1) conformity vs nonconformity; (2) algorithmic vs heuristic behavior. As for the area of professional competence in teachers, five components have been identified: (1) evaluative; (2) psychological; (3) innovative; (4) communicative; (5) factual and methodological. Some facts and figures about the correlation between the creative potential and the level of professional competence in teachers will be presented. It seems that teachers hold diverse views on their pedagogical skills depending on creative potential.

Creative Potential in Middle School Teachers and Their Self-Perceptions of Professional Skills Concerning Special Education Needs of Children

3-84, Poland, Research

Author: *Zdzisław Kazanowski, zak@interia.pl*

Co-Authors:

The paper's aim is to examine the relationship between creative potential and perceived professional skills in middle school teachers with reference to special education needs of children. The main research question to be answered was: "How do the public middle school teachers differing in creative potential assess their professional skills pertaining to the education of a special child?". 42 women and 18 men, employed in 15 middle level schools, were qualified for the study. Two measures: Creative Behavior Questionnaire (KANH-II) by Popek and Perceived Professional Competence Questionnaire by Byra and Kazanowski were used to investigate the variables. The research findings revealed that the higher level of professional competence in teachers was required as far as special education needs of children were concerned. Moreover, it was noticed that creative potential had an effect on perceiving professional skills by the teachers in this respect.

A Comparative Study on Non-Verbal Creativity Tasks between Lithuanian and Mexican Students

3-100, Mexico, Research

Author: *Pedro Sánchez-Escobedo, psanchez@uady.mx*

Co-Authors: *Eglė Mockaitytė Jurga Misiuniene Rubi Martínez*

This is a cross comparative study in which high school students from Latvia and Mexico developed non-verbal creative tasks from the EMUC (Multifactorial assessment of creativity, Sanchez, 2009).

Four tasks from the 2 non-verbal sections of this test were completed by 167 Mexican and 199 Lithuanian students. The first scale explored visual-spatial creativity associated with vocational choices such as architecture, graphic design, sculpture, painting, movies and such. The 17 scale, explored Ingenuity, more associated with realistic vocational choices such as engineering and practical handcraft. Each test included one task free and the 17 timed.

Results suggest a lack of high creative potential and vocational choice. This may convey important guidance implications to help students chose careers paths according to their abilities, rather than interests. This was true for both Mexican and Lithuanian students.

No significant differences in the procedures of administering, interpreting and using test results in either country were found. Except from cultural topic variation and interest in the drawings and uses suggested for the ingenuity task. For example, Mexican students provided more examples and uses about living in the tropics whereas Lithuanian students used situations related to extreme winter situations.

Results underline the difficulties in assessing creativity. They also point at the importance of context specific criteria to judge in each test administration, the creativity of students in an ipsative fashion. Furthermore, overall results suggest that visual-spatial tasks in this age range should focus on originality and elaboration, whereas the ingenuity task should focus on flexibility and fluidity.



The Development of Creative Scientific Associations Test and Examining Its Psychometric Properties

3-111, Turkey, Research

Author: *Esra Kanli, esraKANLI@gmail.com*

Co-Authors:

Creativity is accepted as an important part of scientific skills. Scientific creativity proceeds from a need to solve a problem, and involves the production of original and useful ideas or products. Existing scientific creativity theories and tests do not feature the very important thinking processes like associative and analogical thinking, which can be considered crucial in creative scientific problem solving. The current study's first aim was to propose an alternative model, titled Creative Scientific Associations Model (C-SAM) and to test the validity of this model. Second aim was to develop a scientific creativity test based on the proposed model and explore the psychometric properties of this test.

The Creative Scientific Associations Test (C-SAT) consists of three subtests; associations, analogical reasoning and analogical problem solving. The test was administered to 385 normal and 293 gifted secondary school students. Exploratory and confirmatory factor analyses were used to explore and confirm the construct validity of the model. The results supported the factorial structure of C-SAM. The psychometric properties of C-SAT were analyzed through reliability and validity analyses. The results revealed that C-SAT is reliable both in item and test level. C-SAT's discriminant and convergent validity were also analyzed. Partial evidence was obtained for the developmental validity of the C-SAT and discrimination validity was found to be high. The analysis also showed strong evidence for the convergent validity of the test. The validity and reliability findings revealed that scientific associations model was theoretically supported and scientific associations test was a good measure of C-SAM.

The Effect of Ladder of Creativity in Developing Creative Thinking: Fluency, Flexibility, Originality, and Elaboration

3-135, Saudi Arabia, Research

Author: *Mohammad Rawas, chemrwas@gmail.com*

Co-Authors: *Mohammed Almutawa Abdulnaser Fakhrou*

During the last 20 years, many educators started focusing on some smart aspects like creativity, thinking skills and problem solving as a part of curriculum differentiation.

The authors developed a proposed programme more than 15 years ago. They applied all its parts in several public schools. During these years, many modifications had been done to get the programme more realistic and valid. The programme in its two editions was named : the ladder of creativity.

This study was done to evaluate the strategies in this Ladder in enhancing the four dimensions of creativity: fluency, flexibility, originality, and elaboration.

Two groups of elementary student in Saudi Arabia participated. Both got TCT, Scales for Rating the Behavioral Characteristics of superior Student (SRBCSS) tests. The results were significant at (0.001)

A Study of Creativity and Remote Association Test for the Students in Art College

0-154, Taiwan, ROC, Research

Author: *Pan Yufong, t14007@ntnu.edu.tw*

Co-Authors:

The study aims to understand the correlation between the creativity of the students in Art College and Remote Association Test, and the differences of its background variables. Using creativity test and Remote Association Test as tools, the research data was based on the 298 students from three art colleges around north Taiwan. The results as follow: the creativity performance on art college students, 1. Sexes: there was significant difference on the elaboration. Female is better than male, and no significant difference found on the fluency, flexibility and originality. There was also no significant difference on Remote Association Test between sexes. 2. Grades: there were significant differences on the flexibility and originality. 3. Colleges: the creativity and association performance between different colleges reached significant difference. 4. Departments: the remote association ability of the students from departments of performing arts and general are better than departments of design. On the contrary the students from departments of design have better performance on fluency and originality. There's no significant difference on flexibility. 5. The analysis of correlation between the creativity test and the Remote Association Test is partially correlated. We provide advice based on the above research for future reference.

Keywords: art college students, creativity, Remote Association Test

The Differential Effects of Personality on Creative Ideation and Production

3-197, USA, Research

Author: *Jeb Puryear, jeb.puryear@unt.edu*

Co-Authors:

The relationship of personality traits and creativity is well travelled research path. However, despite diverse conceptions of creativity in the literature, little effort has been made to investigate the differential effects of personality relative to these different notions. Recent scholarship suggests the importance of distinguishing ideation and production in creativity studies while also considering intervening factors in the relationship. In the present study, the creativity literature was investigated for differential effects on ideation and production by factors of Big Five personality. Ideation was conceived globally and in parts (fluency, originality, flexibility, elaboration). Production was conceived as both the reporting of general creativity and via the use of creativity inventories. Key findings include different effects of openness to experience (higher w/ ideation) and



extraversion (higher w/ production) which are both commonly considered part of a “creative personality.” Agreeableness and conscientiousness, generally considered as negatives for creativity, showed different (some +) effects depending on the aspect of creativity being considered. Further study is needed examining the moderating/mediating personality effects. Such studies would carry important implications for gifted education in which we often identify for creativity with divergent thinking tests and use production-based outcomes when there may be many mitigating factors in the relationship.

How to Develop Creativity During Gifted Education: Contributions from Vygotsky and Piaget

3-208, Brazil, Research

Author: *Fernanda Hellen Piske, nandahellen@hotmail.com*

Co-Authors: *Tania Stoltz*

This research aims to highlight the importance of developing creativity in the school environment by promoting quality education to gifted students, with contributions from Vygotsky and Piaget. For Vygotsky creativity is inherent in the human condition, and it is the most important activity because it is the expression of consciousness, thought and language. It is the highest expression of subjectivity (Vygotsky, 2010). According to Piagetian theory, Stoltz (2013) points out that although the source of creativity is a mystery to Piaget, it manifests itself doubly: in the construction of knowledge structures and construction of real or structure and cognitive functioning. The method of this research is a bibliographic study of the area of high ability / giftedness, the cultural-historical theory of Vygotsky and Piaget’s genetic epistemology. We conclude that for Vygotsky (2008) as well as for Piaget (1968) the environment has essential importance to the development of creative potential. In the environment the child has his/her experiences that stimulate curiosity, desire to learn, fantasy and imagination. The teacher should enable gifted students to share their high abilities with their couple performing challenging activities in a stimulating and responsive environment.

Keywords: Education, Gifted, Vygotsky, Piaget.

An Effect of “Australia-Korea International Cooperation Study (AKC)” on the Improvement of Students’ Creativity

3-221, South Korea, Practical Experience

Author: *Kyunghwa Lee, kyunghwa0319@gmail.com*

Co-Authors: *Myungsook Auh*

The aim of this study was to identify the effect of ‘Australia and Korea Connexion(AKC)’ as international cooperation study on improvements of Australia and Korea elementary students’ creativity. Thus, 203 elementary school students (Eg: 121 Australian, 82 Korean) that conducted the AKC in Australia and South Korea were assigned to two experimental groups and 96 Korean elementary school students who were not participated in the AKC were assigned to control group(Cg). And ‘Integrative Creativity Tests (K-ICT by Lee, 20Symposia) was conducted to all student and compared three groups for identification of the AKC’s effectiveness. According to the results, a statistically significant effects were identified in creativity

Gender Differences in Scientific Creativity among Gifted

3-285, Turkey, Research

Author: *Nazmiye Nazli Ozdemir, nazmiyeozdemir@gmail.com*

Co-Authors: *Bilge Bal-Sezerel*

Research generally found that males had higher capacity in science or scientific creativity than females. The purpose of this study is to investigate gender differences in scientific creativity among gifted. Participant of the study included 210 mathematically and scientifically gifted students who attended to the Education Programs for Talented Students (EPTS) between the year of 2009 and 2015. Of the total sample, 68 were girls and Symposia2 were boys. Scientific Creative Ability Test (C-SAT) was used to assess scientific creative ability of the students. The C-SAT contains 5 items and measures fluency, flexibility and Creativity Quotient (CQ) in hypothesis generation, experiment design and evidence evaluation in five areas (biology, physics, chemistry, ecology, and interdisciplinary science) of science. One way multivariate variance of analysis (MANOVA) was performed to examine gender differences in fluency, flexibility and CQ score of scientific creativity among gifted students. There was not a statistically significant difference between girls and boys on the scientific creativity: $F(2, 208) = .308, p < .05$; Pillai’s Trace = .004). When the results for the fluency, flexibility and CQ were considered separately, it is found that there are no differences in each variable

Developing Creativity Consciousness: The First Step in Teaching Creativity

3-292, USA, Practical Experience

Author: *Paula Christensen, christensen@nsula.edu*

Co-Authors: *Debra Mishak*

Teachers need to be able to model creativity for their students and to assist their students in enhancing their own creative potential; therefore, teachers need to be taught creativity and how to teach creativity in their classroom. Assessment of techniques used in a graduate course for teachers of the gifted led to the development of methods and strategies for teaching creative thinking. The primary goal of the course was to enable teachers to develop their creativity which would lead to their facilitating the growth of creativity in the gifted students they taught. Fostering creativity consciousness became the foundation of learning how to be more creative through being able to identify situations when a creative problem-solving approach may be more effective. The process in the course was to change thinking styles, engage in creative activities, and exercise creative abilities. Creativity consciousness includes an awareness of personality characteristics that can enhance



creativity and develop an environment that supports creative risk-taking and implementing techniques and models of creative thinking and problem-solving. The course was fun, active, and captivating. The teachers developed and shared their techniques for enhancing creative in their students. Technology was used in the development of creativity such that, additionally, teachers have indicated they simultaneously became more creative and developed technology skills to use in their classrooms

The Relationship among Emotional Intelligence and Creativity of Junior High School Students and Furthermore an Examination on Gender and Socioeconomic Status of Moderation Effects

3-0, Taiwan, ROC, Research

Author: *Sheng-Ming Chen, freykimo@yahoo.com.tw*

Co-Authors: *Yu-Feng Pan*

This purpose of this study was to investigate the influence of emotional intelligence and creativity and furthermore to examine the gender and SES effect of moderating. The study adopted survey research and the sample including 454 participants (250 male, 204 female) from junior high school students in Taoyuan City, Taiwan. The instruments used in this study including "Emotional Intelligence Scale for Junior High School Students" and "New Creativity Test". The main findings were as follows: (1) According to MANOVA analyzing the differences of emotional intelligence and creativity in background variables, there were significant ones in gender of both emotional intelligence and creativity, and in SES of creativity, too. (2) About 5.6% of the variance in creativity was accounted for by emotional cognition, emotional expression, positive inspiration, emotional regulation and emotional reflection. Gender, SES, emotional cognition, emotional expression, positive inspiration, emotional regulation and emotional reflection explained about 8.7% of the variance in creativity. Based on these results, suggestions aimed at enhancing educational practice and future research are proposed.

A Comparative Study on Effects of Home and Classroom Environment on Individual Creativity and Group Creativity

3-320, Korea, Research

Author: *Kyoungheon Lew, lewkh@ssu.ac.kr*

Co-Authors:

The purpose of this study is to verify the creativity of an individual and a group level. An17 purpose is to investigate the moderating effect of school level on the structural equation model of home environment, classroom climate, individual creativity, and group creativity using test of the structural model invariance across the groups. The subjects of the study were 225 elementary school student, 181 middle school students, 329 high school students, total 735 school students. The major findings of the study were the following:

First, the present study proposed that the score of group creativity were significantly higher than a the score of individual creativity and the score of subfactors of creativity is different by the school level. Second, home environment directed affect individual creativity and group creativity and classroom climate directed affect group creativity. Classroom climate directed affect individual creativity in elementary school students, home environment directed affect individual creativity in middle school students, individual creativity directed affect group creativity in high school students.

Straddling the Arts and Academics: A Potentially Liberating Experience for the Artistically Talented

3-333, Singapore, Research

Author: *Liang See Tan, karboon.koh@nie.edu.sg*

Co-Authors: *Letchmi Devi Ponnusamy*

While the arts is a veritable showcase of human experience, it is also an alternative way of knowing compared to learning through academic subjects. The arts liberate students to explore, experiment, reflect and find personal meaning, and this is posited as a sufficient reason to substantiate the inclusion of the arts in school curricula (Winner, Goldstein et al. 2013). However, a common refrain is that there is insufficient emphasis on the importance of the arts in education. Even in arts schools, the greater focus on technical and theoretical aspects of the art form may render the educational experience for the artistically talented less than ideal. As such, there may be limited pathways from which artistic talent can be nurtured. In this paper, we argue that talent development should be about the all-round cognitive and affective nurturing of the individual. This paper identifies the aspects and effects of such a system at a pre-tertiary level that help to nurture artistically talented students. The analysis of the data, drawn from semi-structured interviews conducted with seven students, pointed to artistically talented students benefiting from the psychological, mental, social, and physical spaces provided in the learning environment. These spaces prepared students to think deeply and broadly while honing their basic literacy, technical, social and emotional skills. The identification of these conditions and spaces in schools will enhance their talent development program.

Focus on creative teaching in classroom to cultivate students™ innovation ability

3-349, China, Practical Experience

Author: *Xiaoping Hu, xie_maria@hotmail.com*

Co-Authors:

Gifted children refer to a group of children who have such characteristics as high IQ, strong creativity and good personality. Their intelligence and capability have great potential for further development. As cognitive ability is one of the prominent characteristics of gifted children, the lecturers can not only pay attention to teaching knowledge (facts teaching) but also need provide proper opportunities for them to develop their aggressiveness, creativities and challenges when teaching these children. A joke between students in the class, sparked the interest of a classmate, and then under the teachers' guidance,



they invented a chemistry experiment instrument $\hat{\text{I}}\text{O}$ type pipe, illustrated the importance of the teachers focus on creative teaching.

Teaching for Creativity in Singapore Schools: Does it work?

3-352, Singapore, Research

Author: *Liang See Tan, liangsee.tan@nie.edu.sg*

Co-Authors: *Letchmi Devi Ponnusamy Keith Chiu KianTan*

Creativity is one of the key desired educational outcomes in the 21st Century as the world's economic growth is increasingly innovation-driven. Given the demand for the capacity to be creative in the future workforce, schools are expected to teach and assess creativity. In line with the announcement of "Thinking School Learning Nation" in 1997, Singapore is determined to nurture creative minds in schools. Nonetheless, there is limited evidence of the outcomes of teaching for creativity in Singapore schools. This could be due to the complex and multi-faceted nature of creativity. Hence, assessing creativity continues to be a major challenge. This paper presents the findings from a study that measured creativity as it developed among secondary students across 3 schools using the Wallach-Kogan Creative Thinking Test (WKCT). A total of 248 secondary school student volunteers participated in the study. They took the 38-item WKCT twice; once at Secondary One and then at Secondary Two. Three dimensions: fluency, flexibility, and unusualness were investigated. Our findings show that (a) high-stakes examination score has no significant correlation to any WKCT score; (b) Females consistently scored higher than males in fluency and flexibility. For unusualness, the difference only occurred at Time 2. Females generally improved at a faster rate over time for Fluency and Unusualness than males; and (c) Fluency, Flexibility and Unusualness scores improved over time in schools that promote

Measuring Self-Concept, Self-Esteem, Value and Self-Efficacy about Creativity: Preliminary Analyses of a Scale

3-361, Brazil, Research

Author: *Daniela Vilarinho-Rezende, danivilarinho@gmail.com*

Co-Authors: *Bianca Costa*

The view that individuals have about themselves and their own creativity is one of several factors that influence the development and expression of their creative processes. However, it is noticed a lack of studies and instruments to assess this topic. The purpose of this study was to design and obtain preliminary evidence of validity regarding a scale that measures self-concept, self-efficacy, and self-esteem in creativity, as well as value given to creativity. This scale was entitled Self-referential Cognitions Scale in Creativity (ECA-c). The sample consisted of 73 Brazilian undergraduate students, average age of 23.03 years (SD=7.9). Confirmatory Factor Analysis and Cronbach's Alpha test were used to analyze the data. All four factors, composed by 24 items each, were identified with adequate indices (α from 0.91 to 0.92; GFI \geq 0.90). Ninety out of the ninety-six proposed items presented good fits for their factor of reference, with loads ranging from .32 to .79. The data indicates that the scale allows an adequate measure of the four self-reference about creativity factors proposed. Therefore, the ECA-c can be a helpful tool to identify the students' view about their creativity, thus providing support for interventions. It also allows the investigation of possible correlations among the factors measured and 17 relevant variables for the development of creativity, such as motivation and classroom climate.

Keywords: Creativity, Self-referential cognitions, Scale.

Creativity enhancement in Hong Kong classrooms: Perspectives from gifted education teachers

3-363, Hong Kong, Research

Author: *Serene Chan, serene.chan@gmail.com*

Co-Authors: *Mantak Yuen Elisangela Gasparini Denise Fleith*

In Hong Kong, creativity has been identified as a priority in the school curriculum. Recent studies have shown that although teachers are aware of the need to incorporate creativity into their teaching, there are still difficulties in its implementation. This study examined creativity enhancement from the perspective of Hong Kong primary teachers who had a background in gifted education. It was anticipated that these teachers would have certain strengths in fostering creativity in their students. The study aimed to identify these strengths, and to investigate 17 factors which may be conducive to creativity. Semi-structured interviews were conducted with ten teachers with a background in gifted education from local primary schools in Hong Kong. Interview questions focused on: the teachers' beliefs about creativity; their creativity-fostering practices in the classroom; and the personal and environmental factors which affected such practices. After analysis of the interview data, it was found that the teachers had a holistic view of creativity. They also made conscious choices to implement creativity-relevant strategies in their lesson planning. In addition, there were several personal and environmental factors which affected their practices. The three main implications arising from the findings include professional training for creativity strategies, awareness of the positive and negative influences on creativity-fostering practices, and a supportive educational environment

A Study on the Creativity Potential of Artistically Talented Students and Regular Elementary School Students

3-366, Taiwan, ROC, Research

Author: *Wan-Syuan Lin, earnestchildishheart@gmail.com*

Co-Authors:

A Study on the Creativity Potential of Artistically Talented Students and Regular Elementary School Students

Abstract

This study aims to understand the creative potential of students from elementary artistically talented class and regular class-

Page # 56



World Council For Gifted and Talented Children 21st Biennial World Conference

Educating Gifted And Talented Children - Turning Research Into Practice

10 – 14 August 2015 Odense, Denmark

www.worldgifted2015.com // info@worldgifted2015.com

es. "Torrance Tests of Creative Thinking" is applied as a probing instrument. Participants were 213 elementary students from third to sixth grade in Taichung city. Result indicated that artistically talented students showed similar creative potential as the regular class students. Based on the findings, researcher puts forward some suggestions as references for teachers, educators, school administrators and follow-up researchers.
Key words: Creativity Potential-Artistically Talented Student

Creativity as Educational Objective in Hungarian STEM Teachers'™ Declared Aims

3-374, Hungary, Research

Author: *Monika Reti, reti.monika@ofi.hu*

Co-Authors:

While nurturing students' creativity is a set objective in educational policies, we often experience a gap between policy intentions and classroom practice. The purpose of this study was to make inquiries how creativity is present in STEM teachers' objectives, while piloting with tools that could guide establishing aims and target hierarchy, thus enhancing teaching practice.

Investigations were carried out in a project involving 44 teachers from 8 primary schools in Hungary. After a Delphi research establishing success criteria for primary level STEM education in Hungary, templates were created to guide teachers, then participatory action research was used to examine what educational aims and how teachers set for their classes, using these templates.

Surprisingly, developing creativity and innovation was not explicitly present neither as a success criterion, nor as an objective set by teachers. On the 17 hand, implicitly they were included in several criteria, and when their attention was raised to the topic, teachers could find ways to advance students' creativity. Additionally, templates improving reflective practice of teachers (as well as training sessions providing own experience and re-opening creativity prospects) proved to be efficient tools to guide teachers'™ attention to the relevance of creativity.

Results of a Survey of 21st Century Skills of Communication, Collaboration, Critical Thinking, and Creativity

3-387, USA, Practical Experience

Author: *Darra Wheeler Happ, dwheelerhapp@gmail.com*

Co-Authors:

A growing consensus exists among educators and prominent CEOs of the global marketplace concerning the need for individuals to possess the 21st Century Skills of communication, collaboration, critical thinking, and creativity (4Cs). The purpose of this study was to discover how teachers are addressing the important issue of the 4Cs. Teachers of grades 9 through 12 were surveyed about the prevalence of assignments that addressed the 4Cs. An analysis of the research revealed that teachers with 17 years or more of teaching experience appear to be offering critical thinking opportunities in the classroom more often than teachers in the 17 experience brackets and that teachers with 11 to 16 years of experience seem to show the lowest prevalence of 4C application on many of the items. Opportunities to help students acquire the twenty-first century skills of the 4Cs must be developed and used in school settings in an effort prepare today's adolescents for the global marketplace. The implication for practitioners is great; educators must introduce and embrace project-based activities in classrooms as a way to help students acquire the necessary 4C skills. This presentation will focus on the 4C skill of creativity by providing an understanding of the four-stage process of creative thinking through the use of narrative, discuss the role of creative-thinking in the classroom, and offer versatile for educators who want to prepare project-based activities for the 21st century.

The Effectiveness of Self-Regulated Learning on Specializing SCAMPER Technique of Creativity

3-410, Turkey, Practical Experience

Author: *Melodi Özyaprak, mzyaprak@yahoo.com*

Co-Authors: *Marilena Z. Leana Taşçılar*

Problem statement: Researchers of current study believe that self regulated learning is a convenient tool to study creativity since both are aimed at autonomous learning and self actualization.

Purpose of the study: In this respect the aim of the study is investigating the effect of self regulated learning on enhancing creative thinking skills and the main research question is as follows: How much is self regulated learning effective on increasing SCAMPER task scores?

Methods: A quasi-experimental design will be used in this study. The study will be conducted with 12 undergraduate students who are at second grade. The experimental group will study SCAMPER technique with a self-regulated learning program. To collect data, two tasks requiring using SCAMPER technique, which were developed by the researchers, will be used. The tasks will be administered as pre and post-tests to the experimental group.

Findings-results: After the training program the effects of the program will be analyzed by Wilcoxon Signed-Ranks Tests.

Conclusion: The hypothesis of this study is that self-regulated learning may be critique to teach creative thinking skills and techniques, since creativity is a cognitive skill and an ongoing process and self-regulated learning is a process in which people guide themselves to develop cognitive skills.

Implications for practice: With this study a training program, which combines creativity teaching and self regulated learning, for gifted students' teacher candidates will be developed.



Examining the Mathematical Creative Abilities of Mathematically Gifted Students in Model Eliciting Activities Process

3-413, Turkey, Research

Author: *Seyma Sengil-Akar, seymasengil@gmail.com*

Co-Authors:

Examining the gifted students' creativity in Model Eliciting Activities (MEAs) Process is important in order to a better understanding of whether and how they would show up their creative potential in these activities which will help to design curriculums for future programs for the gifted. The aim of this research study was to examine the arise of mathematical creativity of mathematically gifted students in MEAs Process. Thus, the second purpose of this research was to examine which positive/negative factors influences the process of the group works in the process. This research study was carried out in a center for the gifted in Ankara, Turkey. The research design was a case study. MEAs were conducted with three eight grade gifted students, who had worked as a group to study on MEAs as a requirement of the activity. Each activity took about three hours and all activities were video-recorded. After each activity, students filled the reflection forms individually for a better explanation of their ideas. The reflection forms of MEAs and researcher's detailed notes were taken during the class discussions constituted data sources. Findings will be presented and discussed.

Engaging Creative Talent Development through Improvisational Theater Games

3-449, USA, Practical Experience

Author: *Connie Phelps, cphelps@emporia.edu*

Co-Authors:

A connection between the needs of gifted children with creative talent development is often overlooked in today's schools. This practical session proposes a series of improvisational theater games based intrinsically on problem-solving that result in an explosion of creativity for gifted children. Although Spolin (1983) used these theater games to train professional adult actors and comedians at The Second City in Chicago, she found the non-authoritarian nature of theater games appropriate for children within the highly structured classroom environment. "Because intuition functions in the immediate, teachers and students can find a certain liberty from constraints of the intellect" (Spolin, 1983). According to Freinet (1993), creativity becomes an essential component of an engaged learning environment where children participate in production-based activities placed within real world situations. Piaget found social activities transformed the social development of children from an extrinsically-oriented perception of authority toward one of autonomy and collaboration, as when children invented rules to a game (Mouchiroud & Lubart, 2006). Richards (2010) describes the value of intuition for those who follow a vague sense as their guide toward covert creative processes in their work. The presenter discusses Spolin's seven aspects of spontaneity within a pedagogical framework of theater games. Participants engage in a sampling of improvisational theater games and receive handouts.

Transforming Creative Talent into Achievement Through the International Torrance Legacy Creativity Awards

3-456, USA, Practical Experience

Author: *Connie Phelps, cphelps@emporia.edu*

Co-Authors: *Abby Phelps Sarah Mahoney*

Talented young writers, artists, musicians and inventors need challenging venues that develop and celebrate their remarkable abilities. While many schools fail to recognize or support creatively talented children, these children can learn to use critical thinking skills and creative problem-solving to both support academic success and develop their creative talents. Creativity is the "ability to produce work that is novel (i.e., original, unexpected), high in quality, and appropriate (i.e., useful, meets task constraints)" (Sternberg, Lubart, Kaufmann, & Pretz, 2005). Researchers find the creative process is a dynamic movement between divergent-exploratory thinking and convergence-integrative synthesis in domain-specific talents (Besançon, Lubart, & Barbot). For example, the creation of new products or processes in a domain requires both divergent and convergent thinking skills that harness innovative concepts into viable and useful solutions. Initiated in 2009, the International Torrance Legacy Creativity Awards provide a venue for creatively talented children, ages 8-18, to transform their creative talents into achievement in four award areas: creative writing, visual art, music composition and invention. This session offers teachers and parents of creatively talented children insight into how their creative personality and the creative process can support academic achievement. Participants will view winning entries in each award area and receive handouts about the awards.

Creative Thinking Strategies for Connecting Science Concepts by Gifted Students in Elementary Schools

3-463, Korea, Research

Author: *Mijin Park, haseo@pusan.ac.kr*

Co-Authors: *Jina Yoon Kyungeun Kim Kwonsoo Seo Jeonghee Bae*

Creativity exhibited by gifted has been taken great attentions since it provides significant implications for identification of giftedness as well as development of gifted education programs. However, not many studies about creativity have been reported when students' responses are qualitative and difficult of drawing common tendencies. The study aims to investigate a tendency of students' creative thinking strategies for connecting science concepts. Research subjects of 209 elementary students at 5th and 6th grades were selected as they were recommended as gifted by their homeroom teachers in their individual schools and asked to generate scientific questions using two science concepts from given eight core science concepts from



elementary science curriculum in Korea, including sound, electricity, weight, temperature, respiration, photosynthesis, weather, and earthquake. Their scientific questions were categorized in terms of how well two concepts are connected, how well questions are scientifically formulated, and what extent scientific imagination is exhibited. Two distinct tendencies of creative thinking strategies were shown: First, students generated questions closely related to two science concepts and formulated relationship between two variables from known and/or unknown scientific phenomena. Second, students presented original scientific questions from unknown phenomena using scientific imagination. In conclusions, connecting science concepts can be effectively used



Curriculum and Classroom Practices

Inspiring High Ability Learners in the Classroom

4-17, USA, Practical Experience

Author: *Kottie Christie-Blick, kottie@verizon.net*

Co-Authors:

In this session, a classroom teacher with over fifteen years of experience working with groups of gifted children within heterogeneously grouped classes, will share a toolbox of strategies for providing meaningful opportunities for high ability learners. Three areas will be addressed: 1) Teachers, and those supervising teachers, will be shown multiple ways to create an opportunity-rich classroom, one that calls to students to think flexibly, in ways they never thought to think before. 2) Enriching opportunities within the classroom will also be highlighted, providing teachers with practical suggestions to deepen student thinking. The suggestions are practical and have been used in the American classroom with great success. Knowing that teachers often feel overwhelmed by the prospect of differentiating their mandated curriculum, this session provides ideas that teachers can implement without feeling like they're directing a three-ring circus. 3) For the more ambitious, the session will also cover ideas for providing students with inspiring opportunities beyond the classroom, bridging class work and the outside world, including establishing a successful class-to-class international collaboration.

Girl Power STEM: Engaging Bright Female Students in Science, Technology, Engineering & Math in Early Childhood Classrooms

4-24, USA, Practical Experience

Author: *Ann Gadzikowski, a-gadzikowski@northwestern.edu*

Co-Authors:

Stanford researcher, Carol Dweck, has observed that girls are more likely than boys to perceive their intellectual gifts as static and limited, and that this perception can become an obstacle to girls' growth and learning, especially in STEM classroom. In this session, the coordinator of a successful enrichment program for young gifted and talented students, Prek through grade 3, describes the strategies for engaging girls in STEM learning and preparing them for successful academic careers in science, technology, engineering and math. Among the most successful ways to draw both girls and boys into the excitement of STEM topics at a young age is to engage students in hands-on, playful learning experiences using creative materials such as blocks, board games, and toy robots. The presenters will provide specific ideas for creating engaging and differentiated learning experiences that are particularly appealing to girls, in both gifted and general early childhood classrooms

The Survey Toolkit and TinkerPlots

4-33, USA, Research

Author: *Thomas Walsh, Jr., tomwalshjr@gmail.com*

Co-Authors:

Problem Statement: A project-based learning curriculum on research methods was needed to help students primarily in grades six to eight use surveys to gather meaningful information about the world they live in. Purpose of the Study: Evaluate and revise a drafted survey research curriculum, based on study of research methodology at Iowa State University, with the author's grade six gifted education students. Method: Evaluate the survey curriculum using observation data, anecdotal notes, and collecting of gifted student work samples. A piloted formal assessment and rubric evaluation of completed survey projects provides evidence of the learning skills and competencies students acquire using the curriculum model. Findings and Results: Students successfully experienced the process of doing research by gathering information, developing paragraph-writing skills, using scientific inquiry, calculating mathematical statistics by creating graphs using TinkerPlots, and sharing gathered information on poster boards. Refer to the results provided in *The Journal of Statistics Education*, 19 (1), 1-27 (Walsh 2011). Conclusion: The survey curriculum was found to be applicable for researching topics across the curriculum. The need for further research to evaluate the effectiveness of the curriculum materials, student learning, and staff development is needed. Implications for Practice: The survey research-based field-tested curriculum provides project-based learning activities guiding students in choosing a research question; developing and giving the survey; analyzing survey data and sharing results. The piloted curriculum resulted in *The Survey Toolkit (and Resource Guide)* published for use with gifted and regular education teachers.

Making Differentiation Decisions

4-36, USA, Practical Experience

Author: *Wendy A. Behrens, cweber@unf.edu*

Co-Authors:

Trying to meet the needs of individual learners in the classroom can seem overwhelming. What does a differentiated classroom look like? How does one manage a differentiated classroom? This session provides an opportunity for educators to explore issues related to making differentiation decisions for gifted and advanced learners in diverse school settings thus supporting a philosophy where students are motivated and engaged in the educational process. Those teachers who vary instruction, curriculum, resources, assessments and the classroom environment are working to provide an optimal education setting for the diversity of learners found in their classrooms. This session focuses on the use of case studies as a vehicle for teachers and 17 education professionals employed in various instructional settings and grade levels (e.g., cluster classroom, regular classroom, and full-time placement) to (1) analyze the role and purpose of differentiation in classrooms targeting high ability and gifted learners; (2) explore common issues related to implementing differentiation; (3) promote an application of best



practice in teaching (e.g., flipped classrooms, 21st Century Thinking Skills, Common Core State Standards) for advanced and gifted learners; and (4) improve services to gifted learners by encouraging educators to reflect on their beliefs or philosophy associated with differentiated instruction. Supporting educators as they reflect on their beliefs and attitudes associated with differentiated instruction can help to improve services to gifted learners. Thus, providing professional development opportunities for teachers to strengthen their decision making skills related to differentiation is crucial for making a positive impact on learners in the classroom.

The Gifted Reader: A Global Perspective - Taking Theory into Practice

4-42, USA, Practical Experience

Author: *Robert Seney, bseney@muw.edu*

Co-Authors:

At the 2013 World Conference in Louisville, Kentucky, U.S.A., one of our keynote speakers, Dr. Sally Reis, called for more discussion and investigation on the gifted/talented reader. This presentation is a direct response to that call and speaks directly to the conference theme of "Theory into Practice." Since many gifted students are already strong and motivated readers, in many cultures the reading needs of the gifted reader are simply not being met. But just like any 17 subject, reading is not an exception and requires special guidance and instruction for the gifted. It is important that appropriate reading instruction is provided that will move the reader into more sophisticated reading and at a much deeper level. This is true for both fiction and non-fiction. In this session, the unique needs of the gifted reader will be discussed; approaches to meet those needs will be shared; and books from U.S. and English Young Adult Literature that is appropriate for the gifted reader will be shared. This session is designed to take the theory/research on gifted readers into practice. Sound classroom practices based on research and best practices will be provided and an approach to creating a positive reading environment will be outlined. Guidance for both administrators and teachers to implement the suggestions will be provided. The presenter is well known in the U.S. with his work with gifted readers.

eTips: One Organization's Approach to Taking Theory into Practice for Teachers and Parents

4-54, USA, Practical Experience

Author: *Robert Seney, bseney@muw.edu*

Co-Authors:

Bringing research based facts, best practices, and suggestions in a simple and straight forward format to teachers, parents, and administrator is important. To meet that need the Colorado Academy of Educators of the Gifted, Talented, and Creative creates a series of one-page information messages sent via email called eTips, providing information and practical tips relating to teaching and working with gifted students. Sending a series of messages impacted more growth and change in teachers' classroom instruction and planning than single articles, larger publications, or presentations. Feedback showed eTips produced a positive impact on educators' attitudes, professional knowledge and skill, confidence, and working with gifted children. Selected eTips will be shared and guidelines for organizations to create its own series will be shared. eTips bring Theory into Practice. The Academy is an organization of educators of the gifted who have made notable contributions to the field of gifted education. Problem Statement: How can we effectively, efficiently, and economically provide information on giftedness to teachers, parents, and administrators? Purpose of the Study: Purpose of this service project is to provide information on giftedness to impact classroom instruction by moving theory into practice. Methods: eTips, written by Academy Members, are sent via email to subscribed schools. Findings and Results: Regularly receiving eTips positively impacted educators' attitudes, professional knowledge and skill, confidence, and working with gifted children Conclusion: eTips are an effective way to provide information on giftedness and classroom practices. Implications for Practice: eTips provide straight information to impact classroom practices and teaching as well as promoting a deeper understanding of giftedness.

Cultural Relevance in the Adolescent Classroom: Promoting Higher Order Thinking Through Popular Culture

4-62, USA, Practical Experience

Author: *Kimberley Chandler, klchan@wm.edu*

Co-Authors: *Jennifer Robbins*

Incorporating songs, artwork, and literature from popular culture in lessons can help gifted adolescent students feel more connected to the curriculum in content area classes and can inspire greater self-efficacy and success. In this session, the presenters will discuss the way in which the literature, art, and music of various contemporary decades can add a depth of understanding about the people's experience and show how and why the social changes of each time period occurred. The session will include the introduction of graphic organizers and instructional strategies that promote higher order thinking and interdisciplinary learning with this content. If school culture better matches students' home culture, the achievement of highly able students from culturally and linguistically diverse backgrounds would improve (Gay, 2002; Ladson-Billings, 1992). Ladson-Billings (1992) used the term "cultural relevance" to describe the teaching practices of successful teachers of ethnically diverse students, which included the use of specific texts that integrated the students' culture. It is also important to connect students' out-of-school literacies to the formal school curriculum (Harste, 2003; Rakow, 2011; Skerrett & Bomer, 2011). Because adolescents regularly participate in new literacy practices (engaging with digital, visual, cyber, and media texts), they become more engaged in school experiences that value and affirm their literacy practices, such as their frequent interactions with popular culture. "Popular culture can both supplement academic texts and help connect students to traditional curricula, thereby serving as a powerful component of culturally relevant literacy instruction" (Grater & Johnson, 2013, p. 33).



Using Gifted and Talented Strategies to Effectively Reach All Learners

4-67, USA, Practical Experience

Author: Wendy Behrens, wabehrens@gmail.com

Co-Authors:

Gifted and talented students are found in every cultural and economic group, from all backgrounds, and in all grade levels. Yet, despite compelling research many highly able students from traditionally under-represented populations have little or no access to advanced educational opportunities. Research indicates that when given a supportive infrastructure and the opportunity to participate many of these students are capable of achieving at high levels. Ensuring the availability of rigorous coursework and gifted services for all students who would benefit from the challenge, combined with equitable identification procedures has the potential to increase achievement and maximize potential.

Gifted Children Prior to School: What Do Educators Believe and Do Regarding Their Education?

4-74, Australia, Research

Author: Kerry Hodge, kerry.hodge@mq.edu.au

Co-Authors:

Early childhood educators can play an important role in recognising giftedness and adjusting curriculum and practices to nurture advanced development in the years prior to school. However, we know very little about how they view this role, how prepared they feel and what they think is important. This study investigated the beliefs, experiences, practices and confidence of preschool and childcare educators in New South Wales, Australia, regarding gifted children. Eighty university-trained educators completed a survey and twelve of these were interviewed as well. Most educators had experienced gifted children and believed that some adaptation of the usual early childhood curriculum was required. Although they had had little training in giftedness and their confidence levels were not high, their beliefs and reported practices regarding curriculum for young gifted children were reasonably well aligned with current recommendations for best practice. The educators identified some barriers to what they viewed as ideal provision, including their own uncertainty and need for professional development. It appears that in New South Wales early childhood educators need access to training in early gifted education and ongoing support, especially since the new national quality framework for early childhood services has acknowledged that gifted children have additional needs and therefore "require or will benefit from specific considerations or adaptations".

Teachers' and Principals' Perceptions and Attitudes toward Educating the Gifted and Students as

Co-Researchers

4-82, Australia, Research

Author: Manoj Chandra Handa, mchandrahanda@gmail.com

Co-Authors: June Maker

Teacher attitudes toward the gifted and differentiated instruction are well researched, yet the attitudes toward the construct, differentiated learning, and engaging gifted students as "co-researchers" have, to date, not been documented. The purpose of the study was to investigate educational practices for gifted students in government schools in Sydney, Australia. In particular, I investigated how teacher attitudes toward giftedness and their self-reported teaching practices were influenced by school type, professional learning, position of responsibility, teaching experience, and qualifications. Second, I examined similarities and differences in the perceptions of principals and teachers about the use of differentiated practices. Third, student voice was embedded in the study by involving gifted students as "co-researchers". Finally, I studied the principals' leadership actions for school-wide differentiation.

Participants included 867 teachers, 120 principals, and 802 students from government schools in Sydney. A mixed methods approach was used, including online questionnaires for the participants, student-teacher interviews, and case studies of principals. Findings revealed that teachers' positive attitudes toward the gifted, and their use of pedagogy for the gifted were significantly associated with their academic credentials in gifted education, school type, and professional learning about educating the gifted; whereas the teachers' experience, general academic credentials, and mainstream professional learning were not. Moreover, a lack of congruence was found among the principals', teachers' and students' responses to teachers' practices in schools. Based on the results, I recommend more teacher education and professional learning about educating the gifted, greater student voice, and development of leadership skills to accomplish schoolwide differentiation.

The Effect of Life-Centered Practical Math on Different Intelligent Children

4-124, Taiwan, ROC, Research

Author: Kuo-Hsuan Cheng, khcheng0323@gmail.com

Co-Authors:

The purposes of this study were to investigate the characteristics and potentials of the children to learn math, to develop a set of the Life-Centered Practical Math (LCPM) for children to learn. The courses were divided into "time", "distance", "length", "position", "weight", "capacity", "multiplication", and "division", there were eight math units in total. The study samples based on observations of class teachers and scores of Test of Nonverbal Intelligence, to screen 31 kindergarten children in Tainan City, were divided into the gifted group (n=10), the general group (n=12) and the lower group (n=9). To implement teaching experiments about the LCPM of the ten consecutive weeks, twice a week, two classes of each teaching.



According to the teaching results and measured scores by self-designed Test of Math Achievement for Children (MAC) before and after treatment were analyzed: The results showed that: the gifted group on “time unit”, “weight and capacity unit” and “multiplication unit”; and general group on “length unit” “had reached significant differences; but the lower group at all Units did not reach. Finally, base on the findings, suggestions for teachers’ instructions, educational administrations, and further studies were made.

Rethinking Gifted Education in South Africa: The Voices of Gifted Grade 11 Students

4-132, South Africa, Research

Author: *Marietjie Oswald, mmoswald@sun.ac.za*

Co-Authors: *Erika Rabie*

We present the findings of a study that explored the experiences of six South African Grade 11 students from diverse settings who were considered academically gifted. The study was motivated by evidence that limited effort on behalf of gifted learners is the reality in South Africa and that the personal experience of being gifted is ‘relatively unexplored’, despite being at the receiving end of education policy and initiatives. Our selection of participants for this study leaned heavily on the teachers’ knowledge of their students. A descriptive, qualitative collective case study design was employed. The participants were positioned as six instrumental case studies. Data collection methods included collages compiled by each participant, in-depth individual semi-structured interviews, and a focus group interview with all the participants. The data were analysed by means of qualitative content analysis in two distinct phases: within-case analysis followed by cross-case analysis. Two themes – ‘support factors for academic success’ and ‘provision within an inclusive education system’ – were evident from the data. Findings indicated that giftedness extended beyond the boundaries of context, whether affluent or disadvantaged, and ethnicity. The data also confirmed the gap between policy intentions and classroom realities. At present the optimization of their abilities seemed to be neglected and they were academically under-stimulated. The participants also identified barriers and deficiencies in their schools and communities which, were they properly addressed by school principals, teachers and support staff, could ensure optimal learning.

Validity and reliability of an instrument to measure gifted female’s perceptions of the learning environment and their attitudes in the science classroom.

4-137, Singapore, Research

Author: *G Sundari Pramathevan, sundari.pramathevan@rgs.edu.sg*

Co-Authors:

There is little evidence that the desired features of the learning environment suitable for the gifted exist, and whether there is a difference between technology-based and regular science classrooms. This study was the first in the Singapore context to focus on gifted female students in technology-based science classrooms in a secondary school setting. The purpose of this paper is to report the validity and reliability of a learning environment and an attitude questionnaire used in the study. The questionnaire was administered to 722 students and the responses were quantitatively analyzed for factor structure, internal consistency reliability, discriminant validity and the ability of the questionnaire to differentiate between classes. Statistical analyses suggested that the questionnaire is valid and reliable for appraising students’ perceptions of the learning environment and their attitudes when used with gifted female students at a secondary school in Singapore. Cross-validating the questionnaire makes an instrument available for assessing the effectiveness of technology-based gifted classrooms in future studies and to make meaningful contributions to the fields of gifted education and learning environments.

Teacher Behaviour in Learning Contexts for Gifted and Talented Students: A Multiple Case Study Focusing on Basic Needs Satisfaction and Motivational Differentiation

4-138, Netherlands, Research

Author: *Greet C. de Boer, g.c.de.boer@rug.nl*

Co-Authors: *Marie-Christine J. L. Opdenakker, Alexander E. M. G. Minnaert*

Teacher behaviour in learning contexts for gifted and talented students: a multiple case study focusing on basic needs satisfaction and motivational differentiation.

Greet C. de Boer^{1,3}, Marie-Christine J. L. Opdenakker², Alexander E. M. G. Minnaert¹

Department of Educational Sciences¹, University of Groningen; Faculty of Behavioral and Social Sciences², GION, University of Groningen; CPS educational development and consulting³, Amersfoort. The Netherlands.

In the international comparative study on reading, mathematics, and science of 2009 (OECD, 2010) especially Dutch gifted and talented (G&T) students underachieved compared to 17 countries. These students require a differentiated, adaptive curriculum embedded within an optimal learning environment that is conducive for students’ motivation for school. When teachers provide for students’ basic needs, motivation will flourish (Opdenakker & Minnaert, 2011). Self-determination theory provides a comprehensive framework of motivation that can enhance understanding of G&T students’ learning motivation. To disentangle to what extent teachers meet the basic psychological needs, i.e. competence, autonomy, relatedness, of G&T students and differentiate according to those needs, we conducted an in-class teacher observation with video-registration from six teachers of secondary education. A video-stimulated recall-interview was used to unveil teachers’ views, the problems they experienced and the solutions they handled. A students’ questionnaire was used to measure students’ perceptions of teacher behavior, and their motivation. In general, we found teachers meeting students’ need of competence, but less attention was paid to students’ need for autonomy. All teachers stressed the importance of a good teacher-student relationship. Students showed, however, low means on motivation. In practice, teachers’ limited autonomy support seems detrimental for students’ motivation.



A Qualitative Analysis of Discussion in an Online Graduate Gifted Education Course

0-157, USA, Research

Author: *Joyce E. Kyle Miller, joyce.miller@tamuc.edu*

Co-Authors:

The use of discussion to develop interpersonal relations, reflection and a sense of belonging has been addressed by numerous researchers (Cox & Cox, Hulkari & Mahlamaki-Kultanen, LaPointe & Reisetter). The problem of this study was to determine the characteristics of discussion prompts and posts in an online graduate gifted education course. What types of discussion prompts trigger critical thinking in online classes? What types of discussion prompts cause students to connect, to apply and to create novel ideas? A qualitative analysis of the discussion prompts and posts from selected online graduate gifted education courses taught since 2007 was conducted. Edward DeBono's Six Thinking Hats was used as a strategy to classify the discussion posts. DeBono uses White Hat Thinking to represent thinking that reveals the facts only; Yellow Hat Thinking looks at the benefits, the possibilities while Black Hat Thinking looks at the negative side, why something may not work; the Red Hat Thinking signifies feelings, hunches, intuition, emotions; Green Hat Thinking creates new thoughts or ideas, and Blue Hat Thinking is reflective and considers all previous types of thoughts shared, summaries and gives directions and raises questions as to what additional issues may need to be addressed. Application of DeBono's strategy revealed that discussion prompts designed to yield critical thinking accomplished its purpose. The application of Edward DeBono's Six Thinking Hats, a strategy from the field of gifted education, resulted in the demonstration of how teachers can use the strategy in crafting discussions, class projects and activities appropriate for the gifted and talented student.

Human Rights Curriculum and Its Impact on Gifted Elementary Students

4-161, USA, Practical experience

Author: *Carrie Koedyker, carrie.koedyker@bgreen.kyschools.us*

Co-Authors: *Keely P'Pool*

Based on the research documented in the Teacher Compendium for Human Rights Education, developed by the Institute for the Development of Gifted Education, University of Denver, I developed an extensive human rights curriculum that focuses on specific topics that are relevant to gifted students. Some topics include child labor, conflict minerals, clean water, and the global lack of access to education. We felt inspired to teach human rights to our students because we observed a lack of global awareness and social conscience. Through the use of current events articles, news clips, guest speakers, cooperative group activities, class discussions, and service projects our students have made significant academic gains as evidenced by scores on pre and post test data. Our students became global partners with children in Musima, Uganda, and raised over \$1,000 to send three students to school for one year. This curriculum can be adapted to meet the needs of students in grades 3 through 8. Session attendants will leave with copies of all lessons and handouts compiled for this curriculum.

The Academy for Talented Youth - making a difference for high school students in Denmark

4-162, Denmark, Practical experience

Author: *Nynne Afzelius, Nynne@ungetalenter.dk*

Co-Authors:

The Academy for Talented Youth is the largest project for talented youngsters in the Danish senior secondary school system. It has three regional branches: the East, South and Middle branches, which together cover most of Denmark.

The aim of the Academy for Talented Youth is meeting academically gifted students and giving them inspiration for their future choice of studies and careers as well as introducing them to academically challenging subjects and themes, and letting them be a part of a social network with like-minded youngsters.

The Academy for Talented Youth started in Copenhagen in 2007, accepting 50 students the first year. Since then, it has grown to a national program with almost 2000 students enrolled at the moment.

The students apply for the program in the middle of their first year of senior secondary school and participate in the program for two years. The program consists of an array of mandatory seminars focusing on building academic and personal competences.

In the parallel session, we are going to outline the general structure and content of the program and present an overview of the interests of the students. The focus will be on how to build a successful talent program; how and in what way it is attractive to different types of students; what we have learned during the last 8 years of working with the Academy for Talented Youth; and how the former students evaluate their personal outcome of the program, when they are further along in their studies.



Mentoring Gifted Students - Inquiry Learning: A Unique School / University Partnership in Academic Research Projects

4-163, Australia, Practical experience

Author: *Susan Knopfelmacher, sknopfelmacher@plc.vic.edu.au*

Co-Authors:

Research and experience show that secondary schools do not always meet gifted adolescent students' intellectual, creative, and affective needs. An extension program which offers engaging high-level challenge under expert guidance provides the opportunity for gifted students to follow their academic and creative passion with like-minded peers. This presentation will explore the partnership between Presbyterian Ladies College - a leading Australian CIS and IB affiliated, independent girls' school - leading universities and Australian National art galleries to implement an academically accelerated research program for gifted adolescents (Symposia-17 years). A developmental approach underpins the program, based on models and theories including Gagne's DMGT 2.0 and the IB Learner Profile. The presentation will outline learning approaches and resources which empower students' innovative research, through expert academic mentoring and peer group collaboration, and discuss how this ties in with the school's 'activity-reflection' Student Portfolio. Our program evaluation overwhelmingly supports research showing that flexibility, choice and autonomy are highly motivating factors for high ability students; especially when allied with mature environments supervised by expert mentors. By exploring aspects of university life while still at school, students gain a head-start for entry to top Australian, US and UK universities while developing the self-regulation and transferable skills required for life-long talent pathways in a rapidly changing, globalised world. Students' personal testimony, significant personal growth and outstanding academic success will be related to the program's opportunities and outcomes.

Gifted Students and Global Awareness

4-172, USA, Practical experience

Author: *Laurie Croft, laurie-croft@uiowa.edu*

Co-Authors: *Jerry Croft*

Because gifted students often demonstrate empathy and moral sensitivity from an early age (Lovecky, 1997; Piechowski, 2006; Shechtman & Sikektor, 2012) they benefit from undertaking geographic place analyses, examining perceptions and data about 17 people and their lives. Gifted children often have strong opinions and-aligned with Perry's (1970) Stages of Cognitive Development-assume that everyone shares their beliefs. Poised to develop greater empathy and construct and evaluate disciplinary (geographic) knowledge, they benefit from time to select places of interest, conduct geographic research, and discuss differing findings and opinions with 17s. Initiatives in 21st Century Learning include geography as a core subject; as well, global awareness is a 21st Century theme essential for success in tomorrow's world. Participants practice learning strategies to understand place perception and place analysis. These activities serve as examples of what Professor Julian Stanley called "relevant enrichment" (Gilman, 2008); they can serve as a recurring contribution to a program specifically designed for gifted learners, regardless of primary topics of study. Participants will complete a "Best-Worst Countries" activity, exploring strategies to develop geographic understanding and empathy; resources will be provided, including Websites appropriate for geographic and interdisciplinary explorations. MANY years of experience with gifted children suggest they often love maps and globes. In our interdependent world, students need to appreciate that diverse populations have different perspectives. They need the time and a safe place to gain understanding from curriculum that encompasses "transformation" and even "social action" (Ford-Harris Matrix, 1999).

An Approach to Holistic Education - Cultivating 21st Century Competencies Using Team-Based Learning (TBL) in the Teaching of Higher 2 (H2) Biology

4-174, Singapore, Practical experience

Author: *Woon Keat Foo-Lam, nahwk@hci.edu.sg*

Co-Authors: *Yen Ping Soh Florentina Widodo Adeline Chia Wee Keong Nah Justin Heng Xi Liu*

This paper describes the application of the team-based learning (TBL) approach as a distinctive pedagogy for developing 21st century competencies in the Higher 2 (H2) Biology classroom at Hwa Chong Institution. TBL is widely used by medical schools around the world including the Duke-NUS Graduate Medical School. Central to TBL is the concept of "team" and the tenets of active collaborative learning and communication, which are encapsulated in the contextualization of syllabus content in real-world settings to cultivate 21st century competencies. The TBL approach hinges on both students' self-directed learning as well as collaborative teamwork through team-based assignments. Students also receive frequent and immediate feedback. In this way, students are no longer passive recipients of information, but are active, engaged learners responsible for their own learning through collaborative interactions with their peers. Our findings show that the TBL approach is indeed an effective classroom pedagogical strategy in fostering students' deep understanding of biological concepts, engaging students' interest and participation, and motivating students to take ownership of their learning. More importantly, it also develops students' capabilities in critical thinking, creative thinking and caring thinking. These three cognitive and affective domains are the cornerstones of the Hwa Chong Global Literacies Matrix that is aligned to our school's mission of defining holistic education.



The Role of the School Leadership in Gifted Education

4-183, USA, Research

Author: *Kimberley Chandler, klchan@wm.edu*

Co-Authors: *Margaret Sutherland Colm O'Reilly Mar Badia Niamh Stack*

The role of the principal has rarely been considered in the literature relative to meeting gifted students' needs. Most literature concerns general program development issues. In many cases, principals may have little or no training in gifted education, or even any interest in gifted education; this is often a consequence of the competing demanding requirements of their roles. To develop comprehensive support for gifted children, the school management needs to consider how this group of learners is challenged within the learning environment of the school.

This paper will illustrate the important role of the principal in shaping the agenda in schools in relation to meeting the needs of gifted students. This paper is based on a cross national study that explores the experiences of principals in the Scotland, Ireland, Spain and the USA. Through a series of semi-structured interviews the research provided principals with the opportunity to share their insights and understanding of the field of gifted education and their perception of their role in addressing the academic and social-emotional needs of gifted pupils. The research identified a number of shared cross-national themes and some themes that were specific. The key themes emerging from this study include issues related to limited resources, the provision of additional support for gifted students and how this support could be implemented.

Behavioural Performance of Syntactic and Semantic Error Detection of L1 and L2 between Children with Giftedness and Their Typically Developing Counterparts

4-186, Taiwan, ROC, Research

Author: *Christine Chifen Tseng, chifen@nutc.edu.tw*

Co-Authors: *Keng-Chen Liang Ching-Chih Kuo*

This study aims to compare performances of children with giftedness and typically developing children in detecting syntactic and semantic errors of their first language (L1) and a second language (L2). Participants are 30 third and fourth graders, divided into the gifted group (GT) and the typically developed group (TP). Participants in the GT group have been identified by the education authorities as having superior general intelligence, and attend gifted and talented programs at school. Two self-developed instruments are applied, one in Chinese the 17 in English, including 72 sentences in three conditions (correct, syntactically ill-formed, semantically ill-formed). Participants are to judge grammaticality of each sentence shown on a lap-top screen. They make judgment by pressing a button on the keyboard to signal if the sentence is grammatical. Response time is recorded. Both percentage of correct judgment and response time are compared between and within groups. It is expected to reach the following results: (1) No significant difference in correct judgment rate and response time is found between groups or between error types in L1 context; (2) GT group outperforms TD group in judging L2 sentences with a higher correct judgment rate and shorter response time; (3) In L2 context, both groups make better judgment in detecting semantic errors than in syntactic errors. Accordingly, implications for second or foreign language education at primary school level are provided.

Talent Development Using Research Project Work as a Vehicle

3-220, Singapore, Practical Experience

Author: *Amanda Sim, amanda_sim@moe.edu.sg*

Co-Authors: *Chee Wan Tan*

Singapore Chinese Girls' School is one of the top girls' school in Singapore with 120 years of history. The student profile of the school spans across a range of abilities. While many come through the affiliated Primary School, a large group are enrolled based strictly by merit for students from non-affiliated primary schools through the national examinations. Aligning to the school vision of providing equal opportunity to all to develop to their best, the Talent Programme is one of the key pillars of the curriculum. The school adopts Renzulli's School-Wide Enrichment Model (SEM) for implementation of the Talent Programme and one main component is Project Work Research. Recognising that students' interests and talent need to be purposefully pursued through a deliberate and structured platform, the PW offers such a framework to address diverse range of talent among the students. This is pursued as Type II and III activities of the SEM. Students choose a pet topic based on their interest and talent and carry out a 6-month in-depth study under the guidance of a mentor culminating in a product/report with demonstration of original thought. Some of these research are done in partnership with higher institutions where specialised mentorship and advanced content are required. The nature of PW as a student-initiated pursuit, availing a wide platter of choice and providing opportunities for differentiated attainment, helps develop creative productive giftedness in students.

Developing Intern Teachers' Authentic Practice in Gifted Education as More Than Just a Bunch of Professional Competencies

0-226, Australia, Research

Author: *Marguerite Jones, mjones46@une.edu.au*

Co-Authors:

The process of learning to teach exceptional students in heterogeneous groups is undeniably complex particularly for pre-service teachers. Content, pedagogy and curriculum knowledge plus an understanding of how to identify student exceptionality and cater for such diversity is crucial. Yet, are such professional competencies enough or do our graduates need



more? Semi-structured interviews of a purposeful sample of Bachelor of Education intern teachers enabled them to articulate their most challenging experience. Analysis of interview data using NVivo and an “a priori template of codes” revealed the vital place of intra-personal qualities in informing professional competencies. This presentation focuses on the empowerment of one intern teacher in gifted education through: undertaking professional learning in a literacy acceleration program, implementing it in her internship classroom, and transitioning from content and process to premise (critical) reflection. In embracing the challenge, this intern flew the flag and marveled at who saluted it! Insights are provided into the manner in which the intern teacher’s self-efficacy for teaching exceptional students was empowered by aligning her core beliefs with socially just authentic practices. This presentation provides insights into professional learning that enriches the process of turning research into practice for interns teaching gifted and talented children.

The Effects of the Use of Integrated Curriculum Model on Student Achievement, Creativity and Critical Thinking in Social Studies for Gifted and Talented Students

4-233, Turkey, Research

Author: *Zehra Ozlem Atalay, ozlematalay1@hotmail.com*

Co-Authors: *Nihat Gürel Kahveci*

The purpose of this experimental study is to investigate the effectiveness of Integrated Curriculum Model (ICM) in a social studies curriculum unit for gifted and talented students. Examination of research studies revealed that alongside 17 curriculum models, ICM might be responsive in social studies for gifted and talented learners. Hence, a new curriculum unit was designed by researchers both including aims and outcomes Turkish Ministry of National Education curriculum and what proposed Integrated Curriculum Model. Developed curriculum unit was also included higher order thinking skills, problem-based learning, and instructional interventions in accordance of gifted and talented students’ educational needs. The study was carried out with 4th grade elementary students who were selected as gifted and talented learners in a state school, Istanbul, Turkey. In accordance experimental study design, while gifted and talented students in experimental group were given instruction in terms of developed social studies unit in the light of ICM and differentiated instruction, the gifted and talented students in control group received social studies course mostly whole class instruction that was not intervened. Results of the study revealed that there is significant difference between experiment and control group in the areas of academic achievement scores, creative thinking and critical thinking in favor of experimental group.

Keywords: Social Studies, Gifted, Curriculum, Instruction

Supportive School Practices for Gifted Learners with High-Stakes Assessment: An Analysis of Student Voices

4-252, Australia, Research

Author: *Benjamin North, ben.north@det.nsw.edu.au*

Co-Authors: *Sarina Wilson Miraca Gross*

How can schools support the needs of gifted students undertaking major examinations and assessments, and what do students say about this? The need for a supportive environment for gifted learners that combines challenge with care is well-established in research, yet can vary greatly in reality. This presentation draws from the qualitative components of research that surveyed 722 Australian senior high school students. As part of a mixed-methods questionnaire, students were asked to describe and articulate their experiences with major assessments at school in relation to their learning and affective responses to academic pressure. Gifted students wrote extensively in response to these questions, detailing their experiences with expectations from teachers, schools, family members, and peers, along with how they responded to feelings of pressure, stress, and anxiety. Analysis of this data shows a relationship between perceptions of pressure and the classroom practices of teachers, schools, and communities. Thematic and coded analysis of student voices illustrates the range of adaptive and maladaptive responses, and the relationships between academic pressure, classroom practices, and student responses by gifted learners. This research has significant implications for the assessment practices of schools: by analysing the student voice we can show how supportive school programs matter strongly to gifted students, and how misguided practices can lead to maladaptive responses.

Perceptions of Gifted Students about Creative Drama Course in the Education Program for Talented Students

4-287, Turkey, Practical Experience

Author: *Selin Bozbey-Esmeroglu, bozbeyselin@gmail.com*

Co-Authors: *Gulsah Avci*

The purpose of this study is to review gifted students™ perceptions about Creative Drama Course in Education Program for Talented Students (EPTS) in 20Symposia and 2015 summer program. EPTS is a university based and after school program for scientifically and mathematically talented students through three semester; winter, spring and summer. The summer program in the EPTS consists of compulsory and elective courses. One of the elective course is Creative Drama that is given for six years. The participant included 50 fifth, sixth, seventh and eighth grade students who had attended the EPTS. The EPTS Course Evaluation Student Form was administered to investigate the perception about courses in this program. The EPTS Course Evaluation Student Form consists of 5 questions; 3 of open-ended and 2 of 5-point Likert type scale. This scale is ranging from 1 to 5 points. All questions in the form are designed to investigate the perceptions of gifted students about creative drama course in the EPTS if they like or not the course and find the course useful or not for them. It is wanted to learn if anything would add or not for course by open-ended questions. According to research findings we can say that students™ perception about creative drama course in EPTS in 20Symposia was positive. 17 qualitative results of perception about creative drama courses in the EPTS will be discussed at conference in detail.



Internet Exploration as Enhancement to Reading for the Gifted

4-291, USA, Practical Experience

Author: *Paula Christensen, christensen@nsula.edu*

Co-Authors: *Debra Mishak*

For many gifted students, reading is a thrill like nothing else but for others, reading is not exciting. The Internet can be a tool in increasing the fun of learning in a literature class. The purpose of this study was to enhance literacy skills through the use of websites related to the books students were reading. Several reading groups were developed for gifted middle school students in which they learned the skills of discussing books blended with exploration of the Internet to find relevant information related to the books they were reading that would enhance their knowledge and sharing with the group. Students gained skills in discerning valid information from the Internet, comparing and contrasting websites, and greater appreciation for the books they were reading and reading in general. The blending of books and the Internet is not an inherent skill but can be taught and can be used to enhance reading and an enjoyment of reading. Ultimately, gifted students should be provided with differentiated curriculum where the process of learning encompasses discovery, creativity, critical thinking, and group interaction. This presentation provides the methods and specific examples of blending books and Internet including current publications and classics. Based on the feedback from the reading groups; other uses of blending technology and reading strategies were developed. The information and skills garnered from this study were not only implemented in gifted classrooms.

Using Problem-Based Learning to Identify Students with Advanced Academic Potential

4-297, USA, Research

Author: *Shelagh Gallagher, sgallagher5@carolina.rr.com*

Co-Authors: *Anne Horak*

Problem Statement: Identifying nontraditional gifted students can be difficult and alternative forms of identification are often expensive and time consuming.

Purpose of the Study: This study investigated the use of in situ identification in classrooms using Problem-based Learning (PBL) to identify gifted students who were overlooked using traditional methods.

Method: The study took place in the sixth grades of three low-income middle schools. All students participated in two PBL units. Teachers identified students who performed well during PBL but had not previously been identified as gifted. This group was named the Advanced Academic Potential (AAP) group. Several student assignments from the PBL units were sent to objective raters for independent assessment of quality. Scores of AAP students were compared to identified gifted students and the remaining typically developing students.

Findings and Results: Independent raters validated teachers' identification of students with Advanced Academic Potential. AAP students' performance on PBL tasks was similar to that of identified gifted students, although their standardized test scores were more similar to typically developing students.

Conclusions: Alternate identification need not be laborious or complicated, in situ methods can be successful if regular classroom curriculum allows students to reveal their ability. This model is currently being replicated on a larger scale.

Introduction of "Tuning Play", a Music-Based Education Program for Children and Its Effectiveness

4-307, South Korea, Practical Experience

Author: *Jinmi Tae, jmtae91@hanmail.net*

Co-Authors:

During infancy and childhood, there is a difficulty in identifying talents or ability. Thus, it is important to create a comprehensive atmosphere to foster the development. It is found that music related activities are positively related to development of potentials of infants and children as these naturally facilitates sensibility and contributes to creating creative ability and attitudes. Tae(20Symposia) built upon previous researches and education experiences in Russia and Korea and have designed a music-based education program of channeling sensibility necessary for children and infants to fully utilize and facilitate abilities of hearing, visualizing, language, operating, and motions. The program named "Tuning Play" is to develop necessary ability and attitudes before receiving formal education; the user would be like an instrumental player in an orchestra to tune the instrument prior to playing the music. The research is to introduce the program and its effectiveness and to discuss the applicability in using the program for early ability development.

Construction and Factorial Validation of the Chinese Version of the Self-Compassion Scale for Gifted Students

0-308, Taiwan, ROC, Research

Author: *MIn-Ying Tsai, tminying@gmail.com*

Co-Authors:

The purpose of this study was to construct and evaluate the factor structure and psychometric properties of a Chinese version of the Self-Compassion Scale (SCS; Neff, 2003). Exploratory factor analysis (EFA) with a selected sample of 384 junior high school students revealed a 4-factor structure in the revised 25-item scale.

A total of 701 gifted students in the junior high school enrolled into the validation study. Confirmatory factor analysis (CFA) supported the same four-factor structure and acceptable composite reliability with some modifications. This study supported the usefulness of the Chinese SCS as a tool to understand the psychological characteristics of gifted students in Taiwan with modification according to Chinese culture.



Research-Oriented Learning

4-312, Austria, Research

Author: *Kornelia Tischler, kornelia.tischler@aau.at*

Co-Authors:

The conception of research-oriented learning (rol) is based on the ideas, that students should learn in an autonomous, scientific way, including critical and creative thinking. Rol combines research and teaching, in education through sciences. The findings of this comparative study show that the model supports individual differences (learning, pace, and interest), helps students develop an understanding of science, and helps them learn appropriate techniques for their work - in order to enhance students' learning experience. As the division of teacher's and student's role is minimised students learn how to take over responsibility, set goals, make choices, and stay focused etc. The presentation will summarize the goals, explain the four steps of the model as well as assessment, pros and cons, and how the roles of teacher and students are changed. Data collection relies on three sources of evidence: open-ended interviews with teachers and students, class observation, and questionnaire (students perspective on their class activities).

Teaching Gifted and Talented Students with Mind Mapping

4-315, Taiwan, ROC, Research

Author: *I-Hsin Sun, mickey@mindmapping.com.tw*

Co-Authors:

Gifted and talented education emphasizes to cultivate innovative thinking, critical thinking and problem-solving ability. Mind mapping is a tool to enhance the students' thinking and learning, and has become popular in Taiwan. This article aims to introduce the applications and the results of Mind Mapping techniques applied to teaching gifted and talented students. Data was analyzed from three theses. The main findings were as follows:

1. Effective instructions for Mind Mapping should understand the influential factors and design teaching programs based on the characteristics of gifted and talented students.
2. The first step is to guide students to learn how to use Mind Mapping, integrate the skill into learning as a means to stimulate creativity as well as to improve understanding and memorizing learning materials.
3. Mind Mapping is suitable for all age levels of gifted and talented students. Among three theses, two researches indicated that mind mapping successfully enhanced creativity. This tool was favored by gifted and talented students and improved students' academic achievement. However, a thesis with negative results was found, suggesting that the course should be more interesting and challenging.

Keywords: Mind Mapping, Gifted Education

The Effects of Differentiated Geometry Teaching For Gifted Students on Spatial Ability Level

4-317, Turkey, Practical Experience

Author: *Gulsah Batdal Karaduman, gulsah@istanbul.edu.tr*

Co-Authors:

Gifted and talented students can fail geometry just like the 17 subjects when they are not provided with a program which is suitable for them. This study deals with developing, applying, and testing effectiveness of a geometry program in order to meet the needs of the gifted students, who has different cognitive features.

This study is held with the use of experiments. Pre-test Post-test design with a comparison group is applied. The study was conducted with a total number of 32 students, 16 of them in study group and 16 in wait list control group, who were students from 5th grades.

Spatial Test Battery is used in order to derive the needed data. The scale are applied as pre-test and post-test. Statistical analyses were conducted via Mann Whitney-U test and Wilcoxon signed-ranks test techniques.

The results of the study revealed that the special problem based program which was developed for the gifted students, increases the spatial ability level of the students. Effective use of different techniques and various materials in differentiated teaching environments would affect students' total acquisition positively. Geometry teaching syllabuses should be designed with regard to the needs of gifted and talented students in our country as these students also have the right to ask for their individual academic needs to be met just as their peers do. Activities which develop visual-spatial abilities can be used in teacher training process.

Creative Thinking Approach to Catering for the Needs of Mathematically Gifted Students in Upper Primary School

4-318, Australia, Practical Experience

Author: *Katrina Sims, ksims@bigpond.net.au*

Co-Authors:

This presentation illuminates the "out of the box" approach to learning for many of our mathematically gifted students as it links into this World Conference on the Education of Gifted and Talented Children within the topic of 4, Giving gifted and talented children a voice and the Creativity in mathematics strand.

It has been recognised by leaders in Science and Mathematics education in Australia, and 17 countries across the world, that the number of students studying higher level of mathematics has been declining. This impacts on the number of students enrolling in STEM subjects at a tertiary level.

Presenting mathematically gifted students with problem solving and research activities that extend them beyond the regular curriculum appeals to and maintains their passion for the subject. These students often approach a problem in a more "out



of the box” creative manner, seeking and identifying the patterns and relationships in mathematics and determining relevant formula themselves. The “natural instinct to recognise number ...patterns” assisted Australia’s gold medallist, Alex Gunning, achieve a perfect score at the International Mathematical Olympiads in 20Symposia**. This style of learning is not always offered in the regular classroom and could be a reason why we are not always aware of who our mathematically gifted students are and why they lose the desire to take on challenges at this young age.

The Investigation of the Relationship between Learning Strategies and Problem Solving Skills on Gifted Students

17-323, Turkey, Research

Author: *Gulsah Batdal Karaduman, gulsah@istanbul.edu.tr*

Co-Authors: Çiğdem Arslan

Learning strategies can be defined as behaviors of a learner that are intended to influence how the learner processes information. Problem solving often requires a representation of given information in a structured form which can stimulate and support the problem solving process. This study aims the investigating of the relationship between learning strategies and problem solving skills on gifted students. This research is designed as relational scanning model. In the study, two scales are used as tool of data collection: Learning Skills Scale and Problem Solving Scale (this scale consists of four different problem questions). The sample of the study is gifted students who are 10-12 years old. At the end of the study, between learning strategies and problem solving skills has a positive relation. Because we know, in order to successfully pursue the goal of teaching students how to learn, it is useful to understand the learning process, i.e., what goes on in the learner’s head during learning. Finally, the implications of the research for the assessment of problem-solving skills and learning strategies were discussed. In general, it was concluded that similar skills are used in different problems on gifted students.

Learning Arrangements to Promote “Technologies of the Self”, Self-Regulation and Sense of Responsibility in Gifted Education

4-330, Switzerland, Research

Author: *Victor Mueller-Oppliger, victor.mueller@fhnw.ch*

Co-Authors:

Gifted students need to recognize their above-average potentials in order to be motivated for personal efforts and to find sense in using their capabilities. In addition to their self-will they have to develop strategies to transfer their abilities into high achievement. Apart from these learning aspects they become aware “to march to the beat of a different drummer” within their social and learning surroundings.

Students can develop these competencies in “learning architectures” which are going to evoke self-directed and reflective learning. Within these arrangements they build their individual horizons of comprehension. They develop subject-specific learning strategies but also their self-concept, including “technologies of the self”, learning attitudes, volition and executive competencies.

Core activities in these learning-environments are learning dialogues: Within the learning community the students share personal understandings with 17s. A professionalized learning coaching innervates self-reflection and sense of responsibility for the learning community.

The presentation introduces a concept of self-directed learning that will enable gifted students to learn in their individual zone of proximal development. The learning architectures have been developed in collaboration with classroom teachers and educationalists. The learning activities of the students and the actions of the teachers were recorded using full-view and head-mounted cameras.

What Does Excellence Look Like in Gifted Education?

4-337, United Kingdom, Practical Experience

Author: *Ian Warwick, ian.warwick@londongt.org*

Co-Authors:

This two year action research project linked thirty state and independent school teachers from ten high profile schools together in order to identify and utilize the strategies used to ensure high levels of knowledge and achievement and to explore what ‘excellence’ looked like in gifted education. We investigated the core ideas, tools and resources that work to increase student expectations and achievement in order to improve their capacity to enter top research universities, so that these could be understood, adopted, adapted (or rejected) for use in other schools. Subject specialists observed each other on 12 days across the two year period with a focus on the effective delivery of differentiated teaching and learning practices and programs so that more able learners were nurtured, challenged and supported to achieve outstanding academic success. We also sought the views of several hundred students in relation to their subject learning and attitudes to self and school. A full review of the research landscape was undertaken in order to ensure the project built upon, rather than replicated other work in this area. All the teachers and the research partners came together to plan, reflect upon and write up the research outcomes and model materials. The outcomes were reviewed in the context of their transferability, scalability and replicability which resulted in the identification of teaching ambassadors, subject specialist CPD programs, a London-wide conference, the production of model materials, a portal/website and a public/state school brokerage program.



A Look into the Efficacy of Using Formative Assessment Probes and Concept-Based Instruction on Deepening Understanding and Improving Performance Among Year 3 Biology Students in Singapore

4-342, Singapore, Research

Author: *Chee Yong Travis Tan, tan_chee_yong@moe.edu.sg*

Co-Authors:

In Singapore, the Integrated Programme is catered to higher performing students who will take the Advanced level examinations or equivalent at the end of 6 years. Teaching with Concept-Based Instruction has been found to appeal to such learners.

Coupled with the use of Concept-Based Instruction, this research uses formative assessments as a measurement probe which checks for mastery of a unit concept in a biology topic. Each probe is designed, based on different modes, to engage the higher ability learners to think more deeply and critically about a unit concept.

This research has a two-fold aim;

1. The efficacy of using formative assessments as measurement probes to help Year 3 higher ability students think deeper and more critically about unit concepts in biology.
2. The efficacy of both Concept-Based Instruction and formative assessments to predict higher ability learners'™ performance in written assessments set with the same topics based on the probes.

Each probe is conducted in the middle of a topic taught. It is administered once every 4 weeks. A total of 3 probes administered showed a mean of about 7.7 (maximum 10 marks each).

The results of 2 written tests (maximum 35 marks each) are tabulated and analysis showed that there is a high correlation (>0.56) between formative assessment scores and actual test scores. This suggests that the design of unit concepts in Concept-Based Instruction coupled with timely formative assessments will boost student performance

Making family education beneficial to school education of gifted children

4-344, China, Practical Experience

Author: *Jinjing Wang, xie_maria@hotmail.com*

Co-Authors:

Family education plays a critical role in educating gifted children, but the results of PCRT show most parents overindulge their children, have great expectations for children or have conflicts in educating children. This phenomenon impedes children's growth and ability. Through analysis of the results and observation of children's behavior, author analyzes the reasons of gifted children's behavior or psychological problems, tries different ways to solve different problems, pays much attention to cooperate with the parents, gradually improves the growth environment and finally solves the problems of the gifted children. The practice and thinking have some guiding significance to the education of gifted children.

Assigning Creative homework ----- Helping Children Get the Most out of Homework

4-345, China, Practical Experience

Author: *Hong Xie, xie_maria@hotmail.com*

Co-Authors:

Daily homework assigned by teachers may improve students'™ performances in class and thus help them attain higher grades. Research indicates that homework in general is extremely beneficial for students. However, Merrill Harmin (1993) suggested that "students suffer greatly from their homework the same as they suffer from toothache". The author believes if teachers know how to take advantage of homework, it may become the most powerful, flexible and efficient tool to help students to learn. The author aims to find out how homework, which is assigned according to the characteristics of the gifted and talented children, helps students to learn English in different ways. This paper shares the author's reflections on assigning homework for gifted students through teaching practice. The study revealed that appropriate assignments effectively strengthened students' learning interest, improved their learning ability, help the students understand and review the work that has been covered in class, broaden book knowledge, develop their sense of responsibility, and good habits and attitudes to become lifelong learners.



Focus on creative teaching in classroom to cultivate students™ innovation ability

3-349, China, Practical Experience

Author: *Xiaoping Hu, xie_maria@hotmail.com*

Co-Authors:

Gifted children refer to a group of children who have such characteristics as high IQ, strong creativity and good personality. Their intelligence and capability have great potential for further development. As cognitive ability is one of the prominent characteristics of gifted children, the lecturers can not only pay attention to teaching knowledge (facts teaching) but also need provide proper opportunities for them to develop their aggressiveness, creativities and challenges when teaching these children. A joke between students in the class, sparked the interest of a classmate, and then under the teachers' guidance, they invented a chemistry experiment instrument I© type pipe, illustrated the importance of the teachers focus on creative teaching.

Learning Chinese outside of the Classroom

4-351, China, Practical Experience

Author: *Yunxiu Liu, xie_maria@hotmail.com*

Co-Authors:

We have to develop social relationships for the students to have good opportunity to practice what they have learnt in reality. To help students to learn Chinese language in practices, the aim of the practice has been clear and the form of the activities should be appropriate. The students should have open minds, independence, and creativity. The aim of our education is to raise students™ qualities through self-drive study and practice in real and lively activities. The activated Chinese class was aimed at three characters of initiative, practice and creative; and three capabilities of independent problem solving, co-operation and communication, and creation. Organize and create varied and colorful activated programs in class and off class, at weekends and in holidays, into the nature and the societies. Adhere to the principle of: taking the textbook and class as the fundamental, taking life as the source and taking the varied activities as the enrichment.

The Experiments of Situation Design

4-357, China, Practical Experience

Author: *Zhen Bai, xie_maria@hotmail.com*

Co-Authors:

Mathematical situation is a special educational circumstance in which teachers can enhance the high degree harmonization of emotions, passions and inquisitive spirits of students according to the design of teaching objectives and contents. Creating teaching situation can help students master mathematical knowledge and skills easily and also can make the abstract mathematical knowledge become vivid and interesting so that students can better experience the emotions from the learning of mathematics. Constructivist learning theory pointed out that: learning is a constructive activity initiated by the students. It should be linked to certain circumstances. Learning in a real circumstance can enable the students to use the existing knowledge and experience of the original assimilation to learn the new knowledge. Such acquired knowledge is not only easy to maintain, but also easy to migrate to the new problem situation.

All-Day Schools as New Arenas for Talent Care in Hungary

4-372, Hungary, Research

Author: *Monika Reti, reti.monika@ofi.hu*

Co-Authors:

Teachers often claim that time constraint represents one of the key inhibiting factors to efficient talent care and differentiation. The purpose of this study was to examine whether more flexible time frames in newly introduced all day schools in Hungary could counteract this phenomenon.

The Hungarian Institute for Educational Research and Development has been running a RDI project from 2012 to 2015. Last year, 55 partner schools were involved in developing a new curricula for all-day schools, in four thematic fields. In this paper we examine results emerging from soft systems methodology (SSM) research, which provided the framework for developing the science education programme. Data collection was based on online questionnaires for students and teachers, action research, reflective documents and deep interviews.

Time management proved to be essential, not only because expanded time frames provided new chances for teachers to explore innovative approaches, but also because the flexibility of the modular curriculum encouraged teachers to establish a more innovative and also more inclusive teaching. Teachers experimented with Gardner's multiple intelligences model in designing activities and assessment, which resulted in a more sensitive approach to talent care. Students showed an improved self-efficacy and motivation in pilot classes. The modular program is now to be introduced at a national level.

Attitudes Toward Gifted

17-376, USA, Research

Author: *Debra Troxclair, debbie.troxclair@lamar.edu*

Co-Authors:

Problem statement: Attitudes of teachers impact the teaching-learning process. Historically, pre-service teachers have had little exposure in their teacher training programs regarding the nature and needs of gifted learners and how to teach gifted learners. Practicing teachers are minimally prepared via staff development activities or have no training at all in the



area of gifted education. Thus, there exists the potential for teachers to hold inaccurate beliefs about the nature and needs of gifted learners which can impact their ability to adequately teach these children.

Purpose of the Study: Attitudes of pre-service teacher, practicing teachers, and pre-service principals were surveyed in separate studies to discover if educators held the erroneous beliefs exposed in societal myths.

Methods: Gagne and Nadeau's (1991) *Opinions about the Gifted and their Education* was used. Data was collected online or traditionally via paper and pencil.

Findings & Results: Pre-service teachers in one group held negative attitudes towards gifted learners and those in another group had ambivalent attitudes. The practicing teachers held mixed attitudes toward the gifted. Data is still being collected for the pre-service principal group.

Conclusions: Educators need to be provided with research findings supportive of grouping practices of gifted children, acceleration of gifted children, and they need to be provided with information that contradicts notions that gifted programming is elitist.

Implications for practice: In this era of inclusive educational practices it is even more urgent the educator preparation programs provide coursework for teachers in the area of educating gifted children. These educators will not be able to adequately provide for the advance learners in their classrooms without such training.

The Effect of A Weekend Enrichment Program on Problem Solving Skills for Linguistically Gifted Students in Primary Level

4-389, Thailand, Research

Author: *Tidarat Sakveerakul, tsakveerakul@gmail.com*

Co-Authors:

Problem solving skills are very crucial skills for every child's learning, even the child with high Intelligence Quotient. The lack of problem solving skills has blocked these children from social interaction which directly affects the ability to learn. The program has been developed especially to assist the children with high Intelligence Quotient. The study aimed to examine the effect of a Weekend Enrichment Program developed to enhance problem solving skills for linguistically gifted students in primary level. The program was designed by adapting the assessment and activities plans from the main part of the DISCOVER curriculum. The six types of questions used to elevate the problem solving skills were applying to 10 activities plans. The participants were 1st - 3rd grade students who was evaluated as gifted students with high ability in linguistic from RISE, Thailand. However, all 15 participants had shown the low potential in problem solving skills. They were assigned to participated in the program for 5 weeks. The results revealed that the program was effective and able to enhance the problem solving skills of linguistic gifted students in primary level to be higher than before participated the program and obviously showed the improvement in four skills; observing, analyzing, applying and evaluating skill. As the participants confirmed the program creating enjoyment while learning, it would be furthered developed to be used as pilot program in schools nationwide.

The Knowledge and Social Network for Differentiating Curriculum for HAL in a High Performing Education System

4-392, Singapore, Research

Author: *Liang See Tan, liangsee.tan@nie.edu.sg*

Co-Authors: *Shu Shing Lee Elizabeth Koh Letchmi Devi Ponnusamy Amanda Sim Agnes Alcantara Paculdar*

Given the call for quality education that promotes critical and creative thinking, schools are motivated to emulate the good practices of the gifted education programme. However, the process of differentiating curriculum for high-ability learners in a high performing education system is complex and challenging. This paper aims to investigate the structures and processes that shape and develop such efforts in attempting to modify practice. This paper presents findings of a single case study. A total of 10 hours of lessons for 8 subjects and 4 focus group discussions were documented and analysed. The classroom practices were rated by a classroom observation rating scale developed by the researchers. Analysis of classroom observation ratings showed that the areas for improvement include teacher questioning and support for students and building a thinking classroom. Using an iterative data analysis process, the researchers reach consensus about the meaning of the focus group discussion data. Two major themes: the knowledge network and social network, and several sub-themes emerged. The knowledge network features the affordances of the shared expertise across schools, the connection of knowledge about high-stakes examination and attempts to enrich curriculum; the social network, on the other hand, highlights the significance of promoting a culture of collaboration among teachers and the deliberate attempt to create a frame of reference to render teacher's knowledge about the learning

EPTS (ÜYEP): A Process and Content Based Curriculum Model in Gifted Education

4-415, Turkey, Research

Author: *Ugur Sak, usak@anadolu.edu.tr*

Co-Authors:

Universal curriculum models in gifted education focus on content, process and product differentiation. Though these models provide excellent frameworks for designing the framework of enrichment and acceleration programs for gifted students, most of these models lack specific learning outcomes and targeted skills. Without specific skills or content and process standards, a curriculum model for the gifted can provide little or no practical tools to develop lesson plans; because we are not sure what skills and content standards and at which level these skills and standards should be included in the program. Being a content and process-based curriculum model, the EPTS (ÜYEP), on the other hand, includes specific learning outcomes and skills as learning standards to design applicable curriculum and lesson plans in subject areas. Developed in several stages using intelligence, creativity and problem solving theories, the model is composed of three first order abilities,



forty-three second-order broad skills and 152 third-order subskills. Curriculum programs and lesson plans are developed using the third-order subskills. EPTS curriculum programs for science, math, reading, creative writing and social studies for self-contained gifted classes was developed. A number of studies to examine the effectiveness of the EPTS was carried out in science, mathematics and reading classes for gifted students from first to third grade and in sixth grade. In all the studies, the EPTS Model was found to be effective. Studies imply that the EPTS can be a universal model to develop curriculum programs in gifted education.

Scientific Talent Promotion in the Early Years: The Season-Oriented Preschool Science Curriculum

4-419, Germany, Practical Experience

Author: *Kerstin Brausewetter, Kerstin.brausewetter@web.de*

Co-Authors:

Scientific literacy has become an important issue in German preschools in recent years. Germany's poor standing in international student assessments as well as its talent shortage in STEM have led to this situation. So far, most preschool teachers have not been trained in this field.

The purpose of this study was to define a framework for preschool teachers to develop and implement a meaningful science curriculum for all children in order to develop their science related gifts and talents. Taking into account existing scientific core concepts on the primary and secondary levels, basic scientific ideas on the elementary level were identified. These are properties of matter, physical processes, chemical reactions and living systems General elementary education principles in Germany such as a season and holiday orientation of the curriculum were implemented in the framework.

Appropriate activities throughout the year that enhance the childrens' scientific literacy have been developed and published as hands-on experiments and inquiry based activities for immediate use. These activities that are theoretically well founded in the core concepts of science education help preschool teachers to develop a meaningful year-round science curriculum.

The influences on beginning teachers' differentiation within the context of a complex educational system.

4-423, USA, Practical Experience

Author: *Susan K. Johnsen, Susan_Johnsen@baylor.edu*

Co-Authors: *Yara N. Farah*

Problem Statement. Although the literature on instructional practices recommends the use of differentiated instruction, the majority of research indicates that teachers tend not to differentiate. Moreover, research regarding classroom and systemic influences affecting the implementation of differentiation, specifically with beginning teachers who have a background in gifted education, is not present.

Purpose. The purpose of this study was to identify the influences on beginning teachers' differentiation within the context of a complex educational system.

Method. The researcher used triangulation of data and cross-case analysis to examine influences on beginning teachers' differentiation practices with diverse students. In an effort to closely examine variables, the researcher observed the teachers in their classrooms, conducted interviews, reviewed archival data, including e-folio entries, observation notes, candidate reflections, and conference summaries. The researcher looked at influences related to (a) the individual's knowledge, beliefs and views, and psychosocial abilities; (b) classroom composition and student characteristics; (c) campus principal, co-teachers, and parents; school policies and expectations; state culture and other conceptually interesting information .

Findings and Results. The implementation of differentiation within the classroom is influenced by a complex set of factors that need to be considered when schools provide professional development.

Conclusions and Implications for practice. Provide field-based learning activities at the preservice level to increase the awareness of beginning teachers regarding influences that might affect best practices and how to persist in differentiating within a system. Ensure that beginning teachers are placed in a school with mentors who model best practices and support the differentiation process.

What about Our Talented Undergraduate Students?: An Intervention Study

17-428, New Zealand, Research

Author: *Tracy Riley, bicknell@waikato.ac.nz*

Co-Authors: *Brenda Bicknell*

This study investigated an intervention programme designed to support the learning of undergraduate students identified as talented, based on their high academic achievement, in three universities in New Zealand. The intervention was introduced in two education faculties and one science faculty with 496 students. The intervention included informal gatherings, invitations to seminars, guest speakers, and opportunities to work alongside researchers on projects. Quantitative survey data was gathered from 126 students at the beginning of the study and focused on self-beliefs (motivation, determination, and self-concept). Qualitative data was generated from individual and focus group interviews. A follow-up survey provided further quantitative data to measure changes in self-beliefs, as well as qualitative data. There were no statistically differences in the beliefs of different ethnic groups and male students had more positive academic and problem solving self-concept than females. There were differences across the disciplines, with science students showing more amotivation. Students were very positive about their involvement in the intervention programme. They acknowledged the role of family and new friendships formed through the study. They also appreciated the encouragement to continue with post-graduate study. The intervention was successful in various ways but many students had been unable to participate because of timetable clashes and other commitments. Consideration needs to be given to the timing of activities, how to be more inclusive (e.g. distance learners), and to broaden identification criteria (not merely academic results).



Gifted and Talented Education in New Zealand Schools: A Decade Later

17-429, New Zealand, Research

Author: *Tracy Riley, t.l.riley@massey.ac.nz*

Co-Authors:

In 2004, the New Zealand Ministry of Education released research investigating identification of and provisions for gifted and talented students in New Zealand Schools (Riley, Bevan-Brown, Bicknell, Carroll-Lind, & Kearney, 2004). This was landmark research: the first national study of gifted and talented education funded by the Ministry and released alongside a range of Ministry-funded initiatives for students and those who identify and educate them in the schooling sector. A decade later, what difference did these initiatives have on the identification and provisions for gifted and talented students? This was one of the questions we asked ourselves, when we decided to replicate the survey to schools. The survey specifically sought to determine:

How common are school-wide policies and plans for gifted and talented education?

How is giftedness and talented defined by New Zealand schools?

What methods of identification and approaches to provision are used in New Zealand schools?

This presentation provides responses to these questions from a sample of 327 schools from across New Zealand, and in relation to the 2004 results. The responses demonstrate positive changes across all aspects of gifted and talented education in New Zealand. Sometimes, the qualitative, open-ended responses tell a different story, showing some signs of potential stagnation of gifted and talented education in New Zealand. The growth and awareness in gifted and talented education needs to be harnessed and injected with on-going resources for funding, professional learning and support, and, most importantly, encouragement to continue developing an evidence-base of effective practices.

Differences in Reading Attitudes and Preferences Between

17-439, Turkey, Research

Author: *A. Kadir Bahar, akadirbahar@hotmail.com*

Co-Authors: *Ihsan Kaya*

In this cross-sectional quantitative study, the researchers explored the differences in reading attitudes and preferences between gifted and non-gifted elementary students in Turkey. The participants included 501 students (112 gifted and 389 non-gifted) in grades 2 to

6. The summary of the t-test analysis for equality of means indicated no significant differences in both, the academic and recreational reading attitudes between these two groups. However, the summary of the chi-square tests of independence indicated significant differences in reading preferences between them. There has been no prior research on Turkish gifted students' reading attitudes and preferences. Therefore, the findings of this study remain crucial for Turkish education and literature. The authors recommend that future researchers should analyze reading attitudes and preferences of gifted and non-gifted students longitudinally so that they can observe changes in their attitudes and preferences.

Radboud Challenges: The Effects of an Accelerated, Residential Summer Program in the Netherlands

17-441, Netherlands, Research

Author: *Stijn Smeets, s.smeets@its.ru.nl*

Co-Authors: *Marleen Hilhorst Eveline Eulderinck*

Accelerated residential summer programs in the US have been effective in facilitating psychological development in intellectually talented students by providing them with sufficient intellectual challenge and access to mental peers. There is no evidence, however, that such programs would have similar effects in Dutch students.

This study evaluated the effects of an accelerated residential summer program in the Netherlands (called the Radboud Summer Challenge) on social-emotional adjustment of Dutch students from grades 7 through 9 (n=40). Participants were selected on high reasoning ability, motivation, and creativity and compared to a matched control group that was eligible for the program but could not participate because the maximum number of participant had been reached. Courses were higher in level, pace, depth, and complexity than typical for their age. Evening activities included collaborative tasks that facilitated development of social and emotional skills. We used a pre-and post-test design to evaluate the effects on participant's academic and social self-concept, well-being, and self-reported interest in academic subjects.

Preliminary results show positive effects of this accelerated extra-curricular program on social-emotional adjustment. Accelerative, residential summer programs can be used as complementary out-of-school intervention for schools that have no provisions for high-ability students.

Work with gifted pupils at Ctyrlstek (Cloverleaf) Primary School and Kindergarten, Uherske Hradiste, Czech Republic

17-460, Czech Republic, Practical Experience

Author: *Veronika Sobanova, veronika.sobanova@zsctyrlstek.cz*

Co-Authors:

I'd like to introduce our work with the gifted and highly gifted pupils in our school. All children who start to attend our school have to pass a didactic test which we have prepared in cooperation with The Faculty of Education and The Faculty of Science of Palacký University in Olomouc. When the test results show that the child may be gifted, parents and teachers are given a nomination questionnaire about the talent of the child. When he/she seems to be gifted according to the teachers, it is recommended to visit the education counselling centre. There if the specialists confirm that the child is gifted, we prepare



an individual education plan and the teachers work with these gifted children in regular classes. All this is done in cooperation with Eva Vondráčková, chair of the Association for Talent and Giftedness (STaN). I'll introduce my specific work with gifted pupils in my financial literacy lessons.

For the identification of gifted children in pre-school age we in school organize a mathematical "logical competition" melda Pep (Bumblebee Joe). It consists of several levels. About 1000 children from the neighbourhood of our city participate (as well as from Prague or London). Thanks to this competition we find the gifted already in pre-school age.

Every year we organize the Child Scientific Conference for school children with participants also from foreign countries.

Turning Research in Practical Strategies for the Classroom

17-464, England, Practical Experience

Author: *Julie Taplin, julietaplin@potentialplusuk.org*

Co-Authors:

Many teachers are not aware of how to challenge their gifted and talented pupils within the inclusive classroom. I have taken research and best practice from various countries and different educational contexts to build a programme of training that puts practical application at its core. This session will look at the strategies that are proven to benefit gifted and talented pupils and how they can be translated into activities for teachers to practise and apply to their own lessons. It also includes experience from assessing provision at our own events for gifted and talented children. The initial evaluation from the training shows the importance of providing opportunities for teachers to learn more about a variety of identification methods and for them to have a programme of CPD that can be fitted within the school's structure. Crucially, the G&T Learning Matters programme builds in the next steps required for teachers and schools to ensure that training is ongoing and best practice is followed. This can be achieved by meeting the criteria of Potential Plus UK's Gold School Standard.

A Home-Based Curricular Intervention for High Ability, Low-Income Children

17-466, USA, Research

Author: *Bronwyn MacFarlane, bdmacfarlane@ualr.edu*

Co-Authors:

Limited research has been conducted on existing curricular interventions available for use with high-ability pre-school age children (VanTassel-Baska, Johnson, & Avery, 2002; Hughes & McGee, 2011). While the HIPPY curriculum is used widely across the world, there is not any research on the impact or effectiveness of the HIPPY curriculum with high ability children. Relatedly, there has not been a rigorous curriculum supplement to the standard HIPPY curriculum to meet the developmental needs of challenge for high ability children.

In a state-wide early childhood study of high ability children from low-income families, parents of high ability, four year old children participated in a project to understand parental teaching practices in poverty and increase school readiness among high ability children in poverty. Preliminary data collected determined the need for additional home-based curriculum materials, differentiated to the accelerated needs of the ready learner. These data were used to design differentiated home-based early childhood curriculum materials for families in poverty.

Using a pre-test and post-test experimental design, the results of this study document the effects of a rigorous curriculum intervention focused on improving the critical and creative thinking among high ability four-year old children in poverty.

Data reveal important understandings about the relationship between high ability children in poverty and their parents and the impact on parenting behaviors with targeted curriculum resources. Participant response to the home-based curricular intervention and implications regarding curriculum design for early childhood and home based instruction will be shared and discussed.

Analysis on Hypothesis-Generating Ability of Elementary School Gifted Students in Science and Its Correlation with Meta-Cognition

17-475, South Korea, Research

Author: *Mijn Park, haseo@pusan.ac.kr*

Co-Authors: *Hae-Ae Seo*

The study aimed to investigate elementary school gifted students' hypothesis-generating ability and characteristics of hypotheses and to analyze correlation between hypothesis-generating ability and meta-cognition. Nineteen students enrolled in a science gifted education center affiliated with university in 2013 were selected as research subjects. An instrument of open ended items about hypothesis-generating was developed and administered, and their meta-cognition as well as their preferred science teaching method were investigated. Hypotheses generated by students were classified into two categories: scientific and non-scientific, and then in-depth analysis was conducted on characteristics of non-scientific hypotheses. It was found that 47% (18 out of 38 hypotheses) was scientific ones showing that elementary gifted students in science presented low level of ability in generating hypothesis. It was also found that non-scientific hypotheses frequently showed characteristics of uncertain in causality or relationships. Furthermore, differences in hypothesis-generating ability and their characteristics were appeared in conditions whether inquiry questions and variable identification process were given or not. Students showed high abilities in hypothesis generating and variable identifying when inquiry questions and variable identification process were given. In ill-structured conditions that students themselves find inquiry questions and identify variables, a significant ($p < .05$) correlation appeared between hypothesis-generating ability and meta-cognition and high correlation between planning and regulating strategies. It was also found that differences existed in hypothesis-generating ability and preferred science teaching methods between students with high level and those with low level of meta-cognition; and students with low level of meta-cognition showed difficulties in generating hypothesis and identifying variables.



ScienceTalent Genius

4-480, Denmark, Research

Author: *Kirsten Baltzer, Baltzer@dpu.dk*

Co-Authors: *Anette Gjervik*

The aim of Project: ScienceTalent Genius is to develop academic challenges for highly able students in Danish lower secondary school. 50 children are identified to participate in the first project circle.

They participate in 3 camps pr. school year at campus ScienceTalter in grade 6, 7, and 8. During the camps they meet academically and socially challenges within science and related subjects. We follow the children and their development closely during the project by field observations, rating scales at each camp, personal interviews once a year, and information from their home school teachers twice a year.

The students submit 3 rating scales during each camp. A School Learning Rating Scale (S-LRS) about the teaching at learning in their daily learning arrangements, a Science learning rating scale (Sc-LRS) about the camps and a well-being rating scale (WRS) about their life situation in general. The preliminary results from two camps indicate that nearly all students appreciate the high level standard of the science projects and the fast rate of the presentations and time spent on assignments. They are able to solve science problems at levels years ahead of the standard curriculum. They are quite negative about the standards and learning rates in their home school. The majority are positive about life in their families, with friends and report positive self-esteem.

The long-term perspective is to develop strategies to support highly able students by combining enrichment in everyday school-life with projects designed to fit their specific needs.

Finnish Elementary School Teachers' Gifted Education Practices

4-481, Finland, Research

Author: *Sonja Laine, sonja.laine@helsinki.fi*

Co-Authors: *Kirsi Tirri*

This presentation presents the results of a study that aimed to reveal how Finnish elementary school teachers meet the needs of gifted students inside regular classroom settings. Finland serves as an interesting context to study teachers' gifted education practices because the country does not have an official gifted education policy and there are no official definitions or identification criteria for the gifted. On the other hand, Finland is seen as an exemplary country of education and training with high quality teacher education.

As a part of a larger survey, teachers (n=212) described how they support gifted students in their classroom and teaching. Teachers' open descriptions were analyzed using deductive-oriented content analysis, with the answers being examined against a coding framework built for this research. Results showed that almost all teachers use some kind of differentiation with gifted students. Most used practices were differentiated assignments, differentiated materials and promoting independence in learning. Some practices, such as flexible groupings and adjusting the pace of learning, were only rarely mentioned, and enrichment activities such as competitions and mentors were not addressed at all. Many teachers also noted that they use gifted students as the teacher's assistant or merely give them extra work.

These findings highlight that it depends on the particular teacher whether and how gifted students' needs are met. Teachers need to receive more education about how to better support giftedness, and to effectively differentiate teaching and instruction for the gifted. In this process, teacher education and in-service education have crucial roles.

Creating Common Understanding of Giftedness Among Teachers

17-482, Sweden, Practical Experience

Author: *Elisabet Mellroth, elisabet.mellroth@karlstad.se*

Co-Authors:

As a response to the increasing interest of gifted education in Sweden some municipalities has realized that teachers need further training in giftedness. This seminar presents one municipality's investment in teacher training aiming to create common understanding in giftedness. To create an open atmosphere, a 90-minute seminar was held at each school in smaller groups of teachers. During the seminar teachers emailed their reflections to the educator. Analysis was done over the reflections. One result is examples of actions believed to stimulate gifted students and possible to implement in school. A second result is teachers' reflections of their students and reasons given by teachers to why some might be gifted. A report was written of the process; the report includes advices to the municipality of how to continue their work in gifted education. This report can be used as a reminder for the teachers in the municipality; it can also be used as a source of inspiration for 17 municipalities. The teacher training has affected the practice in the municipality, e.g. teachers has started to discuss the possibility that reasons to why some students does not fit into the normal pattern might be that they are gifted.



Exploring mathematical challenges in the classroom through a research circle

4-499, Sweden, Practical Experience

Author: *Annika Thyberg*, annika.thyberg@karlstad.se

Co-Authors: *Elisabet Mellroth*

In Sweden there is no tradition in gifted education, although there is an increasing interest for it. Here a project aiming to challenge mathematically gifted students is presented. Seven in-service teachers participated in a research circle, led by a research educated teacher. Problems perceived in their own classrooms are explored; the method is closely connected to action research. In this research circle we used mixed tools to identify gifted students and explored mathematically challenging problems in heterogeneous classrooms. Interviews with selected students investigated if the problems were perceived as challenging and stimulating. Findings are that it is important to use mixed tools in the identification process and the results can indicate students that should be further observed. The chosen problems worked well in the heterogeneous classroom. All together; mixed identification tools, challenging mathematical problems, classroom observations and interviews gives a picture of which students that might be gifted. As a conclusion, cooperation with in-service teachers and a research educated teacher is a good method to develop, explore and implement mathematically challenging and stimulating classrooms for the gifted student in the heterogeneous classroom. Using research circles as a further training method is a good way to combine research with practice.



Developing Future Leaders

Transforming Schools: Developing Curriculum and Teacher Leadership in Gifted Education Through Action Research with Data Driven Assessment

5-19, USA, Practical Experience

Author: *Gillian Eriksson, Gillian.Eriksson@ucf.edu*

Co-Authors: *Derek Cavilla*

In an age of accountability when teachers must document student achievement gains in their classroom, this Masters in Education program provides students studying gifted education with the tools to conduct Action Research. The program develops Teacher Leadership for the expanded roles and responsibilities of teachers of the gifted in schools, including data-driven assessment for school improvement, professional learning communities, applying research to practice, improving instruction and student learning outcomes, inspiring student leaders and collaboration with families and community. Students choose from 10 different specialization Tracks: 5 are in content areas of Language Arts, Mathematics, Science, Social Studies, Art; the 17 5 are programs in curriculum, technology, gifted education, intervention specialist and global and comparative education. The Gifted Education Track includes certification and meets the standards needed for an endorsement in gifted education in Florida. The program requires a course-based action research study (i.e. application and analysis of the effectiveness of research-based best practices in the classroom). The research study and the capstone experiences (Research Report or Thesis) focus on reviewing and analyzing contemporary research in the core areas of teacher leadership in gifted education, curriculum theory, data-driven instructional decision making, action research and inquiry, analysis of classroom practice, and social and cultural competency. The program coordinator and a graduate of the program will present an evaluation and research on the outcomes of the program and completed Capstone research projects in gifted education.

Creating a School Where the Gifted Thrive

5-25, Australia, Practical Experience

Author: *Toni E. Meath, meath.toni.e@edumail.vic.gov.au*

Co-Authors:

In this presentation the Principal (Meath) of The Mac.Robertson Girls' High School will present a perspective on how to establish a school culture that caters for the needs of gifted students. The Mac.Robertson Girls' High School is a select entry academic school with the reputation as one of the highest performing academic schools in Australia. Meath will share the insights gained in working as a school leader in this area across a variety of school settings. Meath will put forward that to meet the wellbeing, curriculum and pedagogical needs of gifted learners school communities must reflect upon the importance of leadership, teacher efficacy, student voice, parent engagement and the development of a culture of trust. Additionally, Meath will discuss how Gardner's (2008) Five Minds for the Future philosophy sets a framework for a secondary school in a contemporary setting to enable staff and students to work towards achieving a holistic perspective. That is, the underpinnings of the school culture of trust asks the community to understand that it is important to not focus on just one mind, such as the disciplined, but also to be ethical, creative, synthesising, and respectful.

Transnational Project "Mentoring the Gifted - Value-Based Mentoring"

5-76, Austria, Practical Experience

Author: *Andrea Pinz, andrea.pinz@aufhauser-pinz.at*

Co-Authors: *Elisabeth Schweiger*

The project is a cooperation between the Institute TIBI at the Private University College for Teacher Education in Vienna (KPH Wien/Krems), the ÖZBF Salzburg/Austria (Austrian Research and Support Center for the Gifted and Talented) and the Wroclaw School of Banking/Poland. The aim of this educational project is to implement a new concept of institutionalised mentoring as a means of gifted education at university level.

Aims and methods:

Developing a scientifically based curriculum for the training of mentors in the field of gifted education including a test phase in a course of study Implementation of the course with the help of experts from Institute TIBI

Evaluation of the project and a final scientific documentation

Supporting the cooperation with 17 institutions in order to implement the concept.

The underlying philosophy of mentoring regarding this project is self-managed learning in the context of a mentor-mentee-relationship which is characterized by trust, acknowledgement of mutual benefit and a balanced responsibility for its conduct founded on the value system of Christian anthropology. This person-oriented approach to gifted education places the individual student and their personal potential at the centre of the mentor's efforts to accompany and support the mentee in the process of trying to reach the upper limits of their performance excellence.

Training programme

Its intention is to enable educational staff, teachers and lecturers to apply mentoring tools in gifted education and to become multipliers in this field.

- Unit 1 Concepts of giftedness and the methodology of teaching the gifted
- Unit 2 The role of the mentor in gifted education and concepts of mentoring
- Unit 3 Reflection of the new teaching process (e-learning)
- Unit 4 The autonomous learner and cooperative learning strategies
- Unit 5 Coaching tools and methods



Successful Academic Leadership: Learning with Brazilian Female Talented Researchers

7-95, Brazil, Research

Author: Renata Prado, pradobasto@gmail.com

Co-Authors: Denise Fleith

All over the world, the participation of women in academic and scientific areas is increasing. The situation in Brazil is not different. Achieving high-level position in a career is a challenge women have been facing for decades and are still facing today. The goal of this study was to identify the individual and family characteristics of Brazilian eminent female researchers who have reached leadership positions in their occupational fields, as well as the promoting and inhibiting factors faced throughout their professional trajectory, and the impact of talent in the family dynamics. The research occurred in two stages: 111 researchers participated in the first stage and 8 in the second one. The data was obtained through a socio-demographic questionnaire, documental analysis and a semi-structured interview. The results revealed that dedication of participants to the professional career is superior to personal, family and social areas. The conflicts to strike a balance between career and family life were pointed as a result of gender stereotypes. The excess demand of work and Brazilian scientific conditions and structure were highlighted as inhibitor factors. The impact of talent and professional success of the participants was positive in relation to children, but negative in the marital subsystem. We expect the results of this study aroused the interest for the development of human talent in a female perspective and serve as empirical support for programs to care for children and adolescents talented as well as for the development and implementation of public policies for women in the academic career.

A Study on the Correlation between Parental Styles and Leadership Ability of Mathematical Gifted High School Students

5-240, Taiwan, ROC, Research

Author: Ya-Ting Wu, caloerin13@yahoo.com.tw

Co-Authors:

This study was designed to investigate the mathematical gifted students' leadership ability in comparison of regular classroom leader, also to detect the relation between parental styles and leadership attitude. Participants were 29 high school mathematical gifted students and 35 regular schoolmate from Chiayi city. "Leadership Development Program" and "Perception of Parenting Style Scale" were distributed to probe the events. Results were as follows:

1. No differences was found between gifted students and their regular schoolmate in regarding of leadership attitude.
2. Of parental styles, gender, birth order and family social status no effects was found in these categories to leadership ability.
3. Students who had the "cadre experience" showed significant high score than those who with no experience.
4. There was significant correlation between parental style and leadership ability, open- liberty tended to be positive and neglect-hostility tended to be negative.

Based on the findings, suggestions for parents, teachers, educational administrators and further studies were proposed for who concerned this issue.

National Beta

5-356, USA, Practical Experience

Author: Bob Bright, bbricht@betaclub.org

Co-Authors:

National Beta is the premier student leadership organization for elementary and secondary students. National Beta pushes past the boundaries of academic achievement to produce globally aware students through community service, leadership opportunities, and character development.

Beta's defining attribute is the ability to align academically gifted students with practical leadership skills that combine classroom concepts with pragmatic application. Such practice allows students to improve psychosocial interaction as well as develop concrete adeptness essential for success in both the collegiate and global career environments. Matriculation within the Beta Organization allows students to actively engage in school and community through public speaking, team building, and ethical problem solving activities much earlier during childhood development. In doing so, students build confidence and gain real-world experience.

The aim of National Beta is to produce effective world leaders by providing opportunities through State and National Conventions, Leadership Summits, and Summer Leadership Camps whereby students may couple scholastic ability with moral and ethical decision making tasks.

High-Ability Palestinian Elementary Students in East Jerusalem: From Outsiders to Leaders

5-433, Israel, Research

Author: Fatima Elyan, fatima_elyan@yahoo.co

Co-Authors:

High-ability Palestinian elementary school students in East Jerusalem schools live in complex social, political, and economic situations and are marginalized by the public education and social system. Public schools are not equipped with skills to identify nor deal with high-ability students and families do not understand the special needs.

The study aims to explore the needs of the high-ability students and possible social educational policies and interventions in their respective schools to respond to their needs.



The presenter has been working with nine students for the past three years to prepare leadership skills for environmental protection and sustainability. The method applied is action research with the objective to improve educational practice through evaluation and critical reflection of the researcher's own teaching engagement. To synthesize the main findings and results, focus groups and interviews were held as well.

One of the major findings is the high level of self-confidence and motivation to attend school and involve 17 students in their projects. One of the results is that Grade 6 students have become teachers for Grade 2 students in environmental protection and healthy nutrition. Academically, they have grown to apply research methods by analyzing data and making interviews as well as extra-curricular activities.

High-ability students serve as role models for their peers and teachers who regard them as leaders in spite of the lack of education.

Characteristics of Leaders of Top 100 Universities in the World

5-478, Turkey, Research

Author: Fatih Tomak, fatihtokmak55@gmail.com

Co-Authors: Ercan Opengin Bahadir Ayas

Leadership has been regarded as one of the important characteristics of gifted individuals (Marland Report, 1972). Senior managers of universities are also seen as effective leaders of a society. However, the characteristics of these leaders have been an object of interest. The aim of this study is to analyze leaders of universities which are in top 100 World University Ranking of Times Higher Education in 2015 in terms of different variables. The variables are age, gender, graduated field and administrative experience. This is a descriptive study and the data were gathered from personal and universities' official web sites. The results of the study showed that university leaders are generally men, 61 years old in average, and graduation fields are engineering, medicine, economics and administrative sciences, and arts and sciences. They had been in administrative positions at least once before they became university leaders. This study could be replicated with different university ranking lists. Also comparison study can be conducted on different countries university leaders.



Educational Technology

Exploring Computer Science with MicroworldsEX

6-34, USA, Research

Author: *Thomas Walsh, tomwalshjr@gmail.com*

Co-Authors:

Problem Statement: A structured learning methodology of curriculum materials and activities developed with opportunities for discovery and exploration is needed to support student learning in a "Microworlds" project-based environment to create geometric graphics using the Logo programming language. Purpose of the Study: The curriculum was developed from the author's 25-year Logo teaching experience with students, along with dissertation research and journal publications supporting use of guided instruction for student learning Logo programming. Method: Guided instruction using teacher scaffolding was used in providing a structured Logo curriculum to a sample of classroom teachers located in a university community. Findings and Results: It was found that potential cognitive benefits for teaching Logo will be achieved by implementing more carefully planned teacher-directed lessons balanced with student problem solving and discovery learning using teacher-mediated scaffolding. Conclusion: The potential cognitive benefits for teaching Logo supported the research, and have been substantiated in the author's classroom based on observation and anecdotal notes. Empirical and meta-analysis research studies of the benefits to learning Logo and potential transfer of Logo skills to 17 content domains has been found. Implications for Practice: The Microworlds research-based field-tested curriculum provides a structured lesson plan methodology beginning with introductory Logo commands and procedures progressing to programming activities. The curriculum provided to teachers in the research study was adopted, including student project examples, and is titled Exploring Computer Science with MicroworldsEX for use with gifted and regular education teachers for teaching Logo programming.

What Happens When Students Learn Online?

6-43, USA, Practical Experience

Author: *Monita Leavitt, monital@aol.com*

Co-Authors:

Schools have changed, and the way students learn has also changed. Teaching has changed, too! It's time to rethink education and examine the opportunity of offering students, including homeschoolers, the experience of participating in Online Learning Courses, a challenging, yet fun way to teach content through technology. Learn how teachers motivate gifted children by integrating high touch with high tech to maintain student interest, momentum and commitment in a virtual community of individualized or group learning experiences. Understand how the use of open-ended prompts, choice of activities and webinars has replaced rote memorization in learning and the impact it has on a curriculum that is beyond what is offered during the school day to engage students through speaking, writing, researching, analyzing, reasoning, and questioning. Based upon her experiences of facilitating online courses at Athena's Academic Academy and SIG (Summer Institute for the Gifted) (USA) to an international population of high ability students as well as training teachers of the gifted, the presenter shares reasons for optimism and concern in the future of MOOCs (Massive Open Online Courses).

Tech Beginnings: Introducing Coding, Animation and Robotics to Bright Young Students

6-73, USA, Practical Experience

Author: *Ann Gadzikowski, a-gadzikowski@northwestern.edu*

Co-Authors:

Tech experts tell us that "coding is the new literacy" but at what age should children begin learning about computer programming? In this session we examine the growing role of technology in early childhood education and identify the tech concepts that are most meaningful to young, bright students. The presenter will demonstrate how computer programming concepts can be taught using a rich variety of teaching materials -- devices and tablets as well as traditional materials such as storybooks, clay, unit blocks, and games.

Two of the most exciting ways to introduce young students to computer programming are through animation and robotics -- animation, because children enjoy creating their own stories, and robotics, because children enjoy building and playing with small devices that look like people or animals.

Simple animation apps, such as Daisy the Dinosaur or Scratch, Jr., can be used by children as young as three and four to learn about computer programming. Simple devices, such as Bee-Bot robots, can be used by very young children to learn how to create a sequence of commands using tangible programming language.

Fostering STEM Giftedness by Experimentation in Pre-Primary and Primary Education

6-113, Czech Republic, Research

Author: *Eva Trnova, trnova@ped.muni.cz*

Co-Authors: *Josef Trna Jana Skrabankova*

Problem statement: Gifted individuals for STEM (Science, Technology, Engineering, and Mathematics) are essential for the sustainable development of society worldwide. Search and development of this giftedness is a crucial task for the educational system.

Purpose of the study: It is necessary to uncover latent STEM giftedness and to fully develop in gifted children. Research shows



that this giftedness should be developed as soon as possible since birth in the family and then in kindergarten and primary school. For this fostering is necessary to find and develop appropriate educational methods and tools.

Methods: Basic research method used in study was the design-based research (Reeves).

Findings and results: We developed the system of simple science experiments that encourage formation of science concepts from the birth in family and further in pre-primary and primary education. The basis is conceptualization of shape, size, and colour of bodies; then the description, exploring and explaining of natural phenomena using simple experiments with toys and materials from everyday life. Our paradigms are constructivism, connectivism (Siemens) and IBSE (Inquire Based Science Education). In this education in the family, kindergarten and primary school runs uncovering of latent giftedness and its development.

Conclusion: Our system of simple experiments can significantly foster STEM giftedness. Specific examples of these simple experiments are presented and the system is ready for implementation into practice.

Implications for practice: For successful implementation of our system of fostering gifted children need to be adapted curriculum and education of teachers in primary schools and kindergarten.

An Investigation into Opportunities for Australian Gifted and Talented Adolescents through the International Education and Social Network IGGY

6-128, Australia, Research

Author: *Leonie Kronborg, Leonie.Kronborg@monash.edu*

Co-Authors: *Margaret Plunkett Adam Boddison*

This presentation outlines a study conducted into the use of the global online education and community platform of IGGY, which was developed through the University of Warwick in the UK for gifted students internationally. It will outline the program and findings from a small pilot study involving four Melbourne schools, which trialed the IGGY program during 20Symposia. The pilot involved utilising Australian experts in gifted education to examine the perceived relevance for gifted adolescents using a framework underpinned by the Maker Model of Curriculum Differentiation (Maker & Schiever, 2010). Moreover four leading secondary schools in Victoria for gifted and highly able students were involved in an IGGY trial, providing multiple perspectives relating to the online learning experiences. In addition to the analysis conducted by academics from Monash University, a range of Victorian educators also provided feedback on the potential benefits and limitations of IGGY for Australian adolescents. Social and intellectual benefits were identified by students, educators and academics, while most of the limitations focused on ICT related issues such as navigational and site details. Some concerns were also raised in relation to the depth and complexity of the academic content for highly able secondary students. A range of recommendations was provided by all participants in the study, which will hopefully provide valuable direction for the developers of the IGGY program. Findings from this Monash University/University of Warwick collaboration will be shared.

Online Learning Experiences for Gifted Students

6-130, Ireland, Research

Author: *Stuart Kehoe, stuart.kehoe@dcu.ie*

Co-Authors: *Colm O'Reilly*

This paper presents the practical application of philosophies of both education and technology in the development of online learning opportunities for the gifted students of the Centre for Talented Youth Ireland. It focusses on the practical development of such a programme through a mixed methods, action research programme of research and implementation. Primary school gifted students were asked to participate in online classes in creative writing, app design and forensic science. Research was undertaken to evaluate and assess the success of the online programme delivered by CTY Ireland. As part of this research the views of three stakeholder groups were considered: educators, parent and students, all of whom have a vested interest in the success of such an educational programme. The development of a synchronous online programme is tackled from a number of different angles including educator training, student experience, social factors and parental involvement with student's education. It is hoped that this paper will both encourage discussion of the use of synchronous online programmes in serving high ability students and provide a roadmap for educators who are making the transition to online delivery methods while remaining grounded in principles of educational and technological philosophy.

Square Pegs for Square Holes: The Challenges of Identifying and Meeting the Learning Needs of Gifted Rural Students through Local Specialist Online Provisions

6-140, Australia, Research

Author: *Maria Russell, maria.russell@det.nsw.edu.au*

Co-Authors: *Michelle Bannister-Tyrrell*

Despite the best intention by enlightened government initiatives and policy to provide appropriate learning opportunities for gifted and talented students, the reality often falls short of the ideal, for a myriad of reasons. For regional and rural students these issues are exacerbated further by the tyranny of distance from experiences and opportunities that are accessible to students living in or near larger cities. While technology is seen as a possible answer to many of these issues, including a lack of teacher training and access to high quality resources; online learning opportunities alone are not a panacea, and come with their own challenges that must be addressed to maximise learning opportunities for gifted students.



This study investigates some of the issues that impact on successful eLearning opportunities for rural Primary school gifted and talented students in one region in Australia. Variables identified in this study include the use of appropriate identification tools; successful matching of individual student needs with online provisions, and professional development opportunities in technology-based gifted education for educators in rural areas.

Blended Learning for Gifted Learners - Exploring the Flipped Classroom

6-166, Ireland, Research

Author: *Rebecca Kirrane, rebecca.kirrane3@mail.dcu.ie*

Co-Authors: *Nina Bresnihan Colm O'Reilly Stuart Kehoe*

"Blended" learning approaches have grown in popularity in recent years, with more and more primary, secondary and third-level institutions moving at least part of their teaching and learning online. The flipped classroom is one such approach which has gained much attention from teachers and parents as well as mainstream media. But is it more than just a buzzword? And can it be used to enhance learning in the gifted education setting?

This case study sought to explore this blended learning approach as a method for teaching digital design in a gifted education context. It ran alongside the primary school enrichment programme at the Centre for Talented Youth, Ireland (CTYI) at Dublin City University and was populated by former or CTYI present students.

Qualitative analysis of student feedback along with analysis of the digital artefacts created yielded largely positive results. The online element of the flipped class allowed learners to tailor their learning to their own interests and ability, while the in-class focus on constructivist, learner-centred activities afforded opportunities to work on interactive group projects, developing both hard and soft skills. This research suggests that the flipped class may be an appropriate approach to cater to the needs of gifted learners in certain domains.

A Study on the Guidance Strategies of Peer Interactions for Gifted Students with Asperger's Syndrome

6-239, Taiwan, ROC, Research

Author: *Chen-Hua Lin, dayaspec@gmail.com*

Co-Authors:

In general education, peer interaction is always be a big deal for students who has Asperger's Syndrome. This study is designed to better understand the effectiveness of guidance strategies offered by classroom teachers. Interviews are made with parents, teachers and peers to know their interaction process and recommendations for the target students. Case conferences, advocacy, counselling and applying examples in class activities are effective strategy for improving students' interactions. Gifted students with Asperger's Syndrome are vulnerable in peer interaction problems, however, through teacher guidance it is possible for them to improve their weakness. Based on the findings, suggestions for parents, teachers, educational administrators and further studies are proposed for who wants to enhance peer interactions for students with Asperger's Syndrome.

The Effects of E-Mentoring on the Knowledge and Skills of Gifted Students'™ Teachers

6-321, Thailand, Research

Author: *Suthawan Harnkajornsuk, suthawan@swu.ac.th*

Co-Authors:

Technological advances recently have allowed changes in mentoring. E-mentoring could potentially make mentoring relationships more available to groups that have previously had limited access to mentoring. To increase knowledge and skills in identification gifted learners, e-mentoring intervention provides professional development to gifted program teachers. This study examined the effects of e-mentoring on identification knowledge and skills. Participants in the study were gifted program teachers from two schools in the Eastern Thailand. Attrition resulted in 73 experimental participants receiving the Self-Learning Package for Teachers: An Introduction to Gifted Education and professional development through two consecutive days before the intervention. Thirty gifted program teachers were randomly selected to participate in the e-mentoring program. These 30 participants served as the experimental group for the e-mentoring study and received training in accessing to computer technology. E-mail, blogs, online discussion group, and document sharing were used in the e-mentoring program. The remaining 43 participants served as the control group. Results revealed a statistically significant increase in gifted teachers' knowledge of and skills in identification attributed to the using e-mentoring intervention. Through e-mentoring, gifted program teachers can increase their knowledge of and skills in identification.

Latest Mobile Apps for Gifted Education

6-447, Turkey, Research

Author: *Ayşe Cilacı Tombus, aysecilaci@gmail.com*

Co-Authors: *Onder Tombus*

Mobile technology has been a new channel for self learning and also a new tool for modern educators. Main advantages of using mobile applications in education are enabling active and independent learning, increasing motivation, facilitating differentiated and customized learning, providing ease of access. It is obvious that they are very beneficial in gifted education. However using nontraditional tools in education and integrating with the traditional way is not an easy task. In this paper we have discussed the available mobile applications for gifted education and try to show an efficient way to choose and integrate most effective applications for the gifted ones.



The advantages of technology for meeting the specific learning needs of gifted students

6-469, Australia, Practical Experience

Author: *Michelle Bannister-Tyrrell, mbannist@une.edu.au*

Co-Authors:

eLearning, by its very nature, is a non-linear event that can be both empowering and challenging for learners. Technology-based learning is seen as an effective vehicle for catering for the unique skills and learning needs of highly able academic students by offering opportunities for advanced pace, challenge, enrichment and autonomy of learning. However, there are essential metacognitive and self-reflective skills often overlooked by educators, required by users to successfully navigate, organise and plan learning events.

This presentation will highlight some of the advantages of technology for meeting the specific learning needs of gifted students and investigate some of the cognitive skills, issues and strategies required by these students to enable successful eLearning experiences. The presentation will focus on both research and practical applications for enabling effective eLearning experiences for academically able students.



Giftedness: Theory, Research, Practices and Future Trends

Achievement Goal Orientation in Science, History and English: A Cross-Sectional Study by Gender in a Specialized Gifted School

7-8, USA, Research

Author: *Jay Thomas, jthomas@aurora.edu*

Co-Authors: *David DeVol*

The problem in this study originated with an inquiry into G/T students' motivation to enroll in advanced chemistry as high school seniors. Initial findings suggested gender-based differences, which led to the present school-wide (N=650) inquiry into students' achievement goal orientation (AGO). Using the trichotomous achievement goal motivational framework (Elliot & McGregor, 2001), this broader, confirmatory study examined between-group differences by discipline (science, English, and history/social science) and changes by grade. The Achievement Goal Questionnaire (Elliot & McGregor, 2001) was administered to all sophomores, juniors, and seniors at a three-year high school for students gifted in STEM fields. The AGQ is an eighteen-item instrument in which items contribute to each of the AGO orientations: performance approach, performance avoidance, and mastery. We asked: Are there between group differences by discipline (science, English, history/social science) and by gender in mastery, performance approach, and performance avoidance goal orientation? Results of the school-wide study indicate the following: 1) mastery orientation remains statistically significantly higher than performance avoidance/approach across grades and among disciplines; 2) there are no statistically significant differences by gender or discipline at the sophomore level on any of the three orientations, but; 3) females demonstrate statistically higher performance avoidance orientation than males in all disciplines beginning in the junior year in high school. Findings suggest that, despite initial similarities in goal orientation, females develop an avoidance orientation when enrolled in a competitive academic environment. Implications include pedagogical considerations for secondary teachers and post-secondary major selection.

"People Who Think the Same as Me": The Importance of Like-Minded Peers for Gifted Children

7-22, New Zealand, Research

Author: *Tracy Riley, t.l.riley@massey.ac.nz*

Co-Authors: *Janna Wardman Deborah Walker*

Much anecdotal evidence would indicate that for gifted and talented students, interaction with like-minded peers is crucial in both their academic and social/emotional development, and this interaction is often cited as a benefit of special provisions which group learners with 17s of similar abilities. There is, however, very little research on how these interactions affect the students, and, even less research on the importance of these interactions to their learning and development, as expressed by the children themselves. This presentation describes the perspectives on like-minded interactions as voiced by gifted and talented children who are enrolled in the New Zealand Centre for Gifted Education specialist one-day-a-week programme. Through interviews with the gifted children, their parents, specialist teacher and contributing school teacher, this case study explores their experiences. The presentation looks specifically at the opportunities the gifted students have to engage with like-minded peers and what perceived impact this may have on their academic, social and emotional development. Tensions that emerge include: bullying, loneliness, mis-match of interests with age-peers, different moral boundaries and the difficulty of working in mixed ability groups in regular classrooms. The children identify different friendship groups for various settings and describe the stress of having to 'multi-task' in order to cater for non like-minded friends. This small qualitative study confirms the belief of the importance of having at least one like-minded, reliable friend in school settings, with whom gifted children can relate.

Radical Acceleration Experience in Mexico: A Recount from the World's Youngest Psychologist

7-29, Mexico, Practical experience

Author: *Dafne Almazan Anaya, almazananaya@prodigy.net.mx*

Co-Authors:

Giftedness is a field current undergoing a fast development in Latin America, after the last five years of work by several institutions, for instance the Mexican Alliance for Giftedness Group, research and practice on this field has increased. Differentiation programs for gifted encompass acceleration, the latter could be mild or radical. In Mexico, although this strategy of acceleration is inchoate some remarkable cases of success have been obtained. For instance, a 10 year-old girl who by radical acceleration got admission to college level at university with previous studies completed. Currently this girl is 13 years old and is considered the youngest psychologist in the world as she already holds a Bachelor in Science degree with major in Psychology obtained recently. This talk analyzes this case, unveiling the key education experiences from the perspective of that girl and exploring how a 13 year-old psychologist combines her childhood with professional studies, a job at a school for gifted children and preparation for a Master in Education degree. At this pace, she could be among the few ones to obtain a Ph.D degree before turning 18. Radical acceleration is a strategy used rarely with gifted students worldwide because of its logistical difficulty and several myths forestalling its development. It is even more difficult to find cases of success of gifted children who have finished their studies after being accelerated with this modality. Furthermore, experience with radical acceleration is explored in order that this successful method could be replicated at 17 countries.



Special Education Effects on Gifted Students Intelligence and Academic Performance: A Comparative Research

7-31, Mexico, Research

Author: Andrew Almazán Anaya, almazananaya@cedat.com.mx

Co-Authors:

Most programs for gifted are designed on enrichment, acceleration and special education, also called Differentiated. However a large-scale comparative research that analyzes intelligence and academic performance between gifted students at special and average schools has not been performed. Therefore a comparative research was made between gifted children receiving specialized education (gifted education) and the ones enrolled at average schools. The study was held for three years. What happens when a gifted student doesn't receives special education? Do gifted children in differentiated programs have different intelligence and academic results? This research was quantitative, performed on 968 gifted students aged from 2 to 15 years, from 20 countries. They received the most intensive model of differentiation contemplated in the Intellectual Enhancement Program consisting of 2,083 hours per year, 500 more in comparison to South Korean educative system. Two hundred gifted students, that their parents voluntarily kept at average schools, were selected as control population. A correlation was found between special education and an increase in academic performance of 19% as well as in the students' IQ (12.5%) showing special patterns of intelligence improvement regarding gender and age higher than the ones expected by the Flynn effect. Statistic differences between cognitive and academic performance of both groups were found, the control even had a 3-4% per year decrease on intelligence scores. The results underlined the positive effects of special education for gifted students but also pointed out the deleterious effect on intelligence and academic performance when they are leaved at average schools.

Giftedness around the Globe: Definitions, Identification Methods, and Educational Practices

7-39, , Research

Author: Katie McClarty, katie.mcclarty@pearson.com

Co-Authors:

The definition of gifted learners as well as identification methods and educational practices vary across countries. Dai and Chen (2013) describe three paradigms which are useful for categorizing gifted education approaches: gifted child, talent development, and differentiation. The gifted child paradigm describes giftedness as a general human quality whereas talent development views it as a set of developing capabilities and potential. The third paradigm, differentiation, focuses on the optimal match between learners and their educational environments. The purpose of this study is to (1) summarize how gifted children are defined, identified, and served across the 34 OECD member countries according to the three paradigm framework, (2) evaluate alignment between identification approaches and programming strategies, and (3) link paradigms to student performance on PISA to evaluate whether certain practices are associated with higher performance. Data for this study come from literature reviews, a targeted survey, and published PISA results. Initial analyses suggest most countries with provisions for gifted children operate under a talent development paradigm offering programs designed to develop potential in particular areas (usually academic) and identification methods beyond ability measures. Identification procedures are fairly consistent with programming options. With regard to PISA performance, there seems to be greater variation among countries within each paradigm than across paradigms. This study is one of the first attempts to summarize gifted practices across multiple geographies using a common framework. Results can aid global discussions in best practices for identifying and educating gifted children.

How Do Girls Know They Are Smart?: Sources of Global Academic Self-Efficacy in High-Achieving Females

7-97, Australia, Research

Author: Jennifer Krafchek, Jennifer.Krafchek@monash.edu

Co-Authors: Leonie Kronborg

There is limited research applying the four sources of self-efficacy: enactive mastery experiences, vicarious experiences, verbal persuasion and physiological and affective states (Bandura, 1997) to analyse global academic self-efficacy. In a quantitative study of entering middle school students, Usher and Pajares (2006) found sources of general academic self-efficacy differed depending on students' gender and ability. They suggested that a qualitative study would provide more information on how students evaluate and integrate different sources and address some of the limitations of their study. This qualitative study examined the sources of global academic self-efficacy in academically high-achieving females to gain an understanding of how they decided if they were smart or not. As part of a PhD study on academically high-achieving females who have recovered from disordered eating, Symposia adult participants were interviewed and asked to describe experiences where they were viewed as excellent since their first day of school. The results provided detailed information on a wide range of sources of academic self-efficacy identified by these high-achieving students as they included awards and opportunities in gifted programs that 17 students may not be offered. The findings revealed surprising data on how these high-achieving females, as girls, interpreted each source of efficacy, the most effective sources in primary school compared to secondary school and how they integrated the sources into a global concept of their academic self-efficacy when they encountered conflicting information about their achievements from different sources. Implications from this study for teachers of high-achieving girls will be discussed.



Candidate Teachers' Attitudes and Beliefs about the Gifted: A Cross-Cultural Comparison Study

7-107, Germany, Research

Author: Franzis Preckel, preckel@uni-trier.de

Co-Authors: Svenja Matheis, Leonie Kronborg

Teachers' conceptions of giftedness influence which students they identify as gifted and how they behave towards these students. Research findings diverge showing an overall positive, negative, or ambivalent view that considers gifted students as intellectually strong, but socio-emotionally inferior. Conceptions further depend on teachers' cultural background. We aim to assess and compare teachers' attitudes and beliefs about gifted students in Germany and Australia. Using short student descriptions (i.e., vignettes), teacher candidates rated fictitious students varying in ability level (gifted/ average) and gender (girl/boy) (between-subjects experimental design). For the ratings, we used the Attitudes Toward Gifted-Questionnaire (Preckel, Baudson & Glock 20Symposia) that assesses the dimensions intellectual ability, social ability, maladjustment, teacher enthusiasm, and teacher self-efficacy for teaching students (Cronbach alpha: .77-.87). After establishing scalar measurement invariance over vignettes, for the German sample (N=303, 169 female, age M=22.15 years) repeated-measures MANOVA showed that teacher candidates considered gifted students superior regarding intellectual ability, but less socially competent and more maladjusted, compared to average-ability students. Also, teacher candidates reported significantly lower self-efficacy for teaching gifted as compared to average-ability students (no significant differences in enthusiasm). Findings were independent of student gender. Whereas higher intellectual ability is in line with empirical findings about the gifted, lower social ability and higher maladjustment are not. In addition, teacher candidates feel less well prepared for teaching gifted students. Overall, the findings indicate the need for teacher education in gifted education. Data for the Australian sample will be collected during May 2015.

Preckel, F., Baudson, T. G., & Glock, S. (20Symposia). Einstellungen gegenüber Hochbegabten [Attitudes Toward Gifted-Questionnaire]. Unpublished Research Instrument. University of Trier, Trier.

Eye Tracking Method in the Research of Mathematical and Logical Intelligence of Students at Primary School

7-114, Czech Republic, Research

Author: Jana Skrabankova, janaskrabankova@seznam.cz

Co-Authors: Josef Trnava, Eva Trnava

Eye Tracking is a modern diagnostic method which has been recently applied in science education. This research method is based on observing human eye movement, monitoring a spot an eye is focused on, its distance, or the time duration of such focus. Our study of gifted students using the Eye Tracking method aimed to answer the question regarding whether it was possible to analyse mathematical and logical intelligence of primary school students. The goal of our research was to analyse the ways in which students worked with text, including details like whether they return to certain spots and how many times they do it within one line or one page, which words need to be focused on more than once, or how the size of their pupils changes when students think. Participating students in the study were given texts with mathematical problems and images on a screen and asked to solve various learning tasks. The main research findings is the fact that there are differences between gifted and standard students. Important is the difference in the time of fixations of student's eye during their task solving. Thanks to these outcomes we were able to come to the conclusion that Eye Tracking is a proper experimental method which we would like to use for research of gifted students. The above mentioned implies that no research has so far been done on gifted students in the context of their mathematical and logical intelligence as the important part of science and mathematics giftedness.

An Evaluation of the Provision for Gifted Pupils in Saudi Arabia: Identifying Next Steps to Inform Change and Development

7-121, United Kingdom, Research

Author: Jawaher Bin Yousef, jhby1g12@soton.ac.uk

Co-Authors: Marcus Garce, Gary Kinchin

Considerable attention is focussing on the provision for gifted students in Saudi Arabia. The Saudi government is undertaking efforts to enhance this provision through appointing specific organisations and authorities to deliver an efficient, tailored service to gifted students. The purpose of this study was to analyse these current organisations for gifted provision in Saudi Arabia, with specific attention to policy, processes, internal structures, access and personnel. Semi-structured interviews were conducted with the key leaders with decision-making positions within the two principle organisations that provide services for gifted students, between grades 4-12 in Saudi Arabia. A qualitative approach was used to analyse the interview data. The study revealed that services in Saudi Arabia for gifted education provision require further improvement in the following areas: community awareness about giftedness; the allocation of finance, implementing updated policies and regulations; and workforce training. The findings of this study are intended to inform the establishment of a special school for gifted Saudi students, based on the 'magnet' school system in the US. These are therefore discussed as they relate to: the need to build a diverse gifted curriculum in Saudi Arabia taught by well-trained staff in well-equipped instructional settings and which meet the needs of gifted students.



To Be or Not to Be a Gifted She: How Could Schools Help in Building Their Identity as a Gifted Person?

7-125, Brazil, Research

Author: *Susana Graciela Perez Barrera Perez, susanapb@terra.com.br*

Co-Authors:

On previous academic research, a recent national survey conducted by the Ministry of Education and UNESCO, and teachers' training courses, it was found the number of gifted female students' attending gifted educational programs was much lower than male students, and far below the gifted female estimates. Furthermore it was also verified gifted women build their "gifted identity" (when they manage to do so) in very different way men do. The purpose of the study is to investigate the way gifted girls and women build their identity as gifted persons, and proposing educational strategies, which may contribute to the construction of their identity and their full and integral development.

The research presented in this session is a post-doctoral study. The qualitative research was developed with twenty-two participants, 16 women and 6 girls, ages ranging from 12 through 55, from the Brazilian five geographical regions.

As the research period ends on May, the study report is still unconcluded, and findings are being described. However, some of them are already clear and could be listed, such as a strong presence of the Impostor's Syndrome, low self-esteem and self-confidence, extremely poor self-recognition as a gifted person, conflictive perception of their difference, and lack of female models to identify with, among 17s. Currently, educational strategies, which may be used in schools to aid gifted female identity building, are being designed and will be shared in this session.

A Participatory Model of Giftedness (PMG): A New Conception for Defining and Practicing Gifted Education in Saudi Arabia

7-141, Saudi Arabia, Research

Author: *Faisal Alamiri, faisalgift@hotmail.com*

Co-Authors:

There has been an increasing demand to move gifted education in Saudi Arabian schools beyond the individualised programs in a special class (i.e., pull-out enrichment program) to an inclusive curriculum in the regular classroom (i.e., differentiation). However, this movement have been inhibited by the traditional definition of giftedness, which emerged from a formalised and externally mandated body of knowledge. This presentation overviews an unprecedented participatory action research (PAR) study in Saudi Arabian gifted education.

The prime purpose is to introduce the Participatory Model of Giftedness (PMG) and discuss how it facilitated the democratic knowledge towards the development of school-based gifted education definition and pedagogy that emerged from the process of teacher empowerment, experiential learning, action learning and reflective practice.

Qualitative data were collected in this study and involved teachers' learning through the PAR group discussions, classroom observations, teachers' reflective journals and pedagogic changes over a period of six months. The PAR group included three regular classroom teachers, the school's gifted education specialist teacher, and the facilitator-researcher.

Three major themes are overviewed in this presentation:

1. Evidence of how the inclusive conception of giftedness in the regular classroom emanated from teaching and learning situation and needs;
 2. Evidence of how teachers' professional learning about gifted students influenced by the integrated processes of PMG; and,
 3. Evidence of teacher-initiated instructional differentiation for gifted learners and their pedagogic implications.
- Finally, significant implications and recommendations for future research and practice will be presented.

Mathematical Abilities Exposed During Problem-Solving: Are High-Achieving Students Necessarily Mathematically Gifted?

7-147, Sweden, Research

Author: *Attila Szabo, attila.szabo@stockholm.se*

Co-Authors:

Despite increasing emphasis on the education of gifted and talented students, we still have limited empirical data about their mathematical abilities during problem-solving. Moreover, teachers usually consider that high-achieving students are as well mathematically gifted.

The present study focuses the interaction of talented pupils' mathematical abilities, by investigating remarkably high-achieving students (16-17 years old) from Swedish secondary school in the context of challenging problems.

The students were observed individually during problem-solving activities and every observation was followed by a contextual interview. The transcriptions underwent qualitative content analysis; the basic patterns in the students' solutions and verbal utterances were coded and categorised according to a scheme which was developed in order to identify the mathematical abilities focused in the study.

The analysis shows that a specific ability, i.e. mathematical memory, is critical for the choice of methods and thereby also for the success of the problem-solving activities. If the initially selected method does not lead to a desired outcome, the students find it very difficult to modify it; thus, the participants were not acting flexibly when solving new and challenging problems. The study confirms also some qualitative differences in problem-solving between high-achievers who are not essentially gifted and mathematically gifted students.

The results indicate that pupils should be taught more general and flexible approaches to problem-solving, and pupils should also be encouraged to elaborate their solution methods through discussion and explanation.



Translation and Adaptation of Instruments in Gifted Education: Evidence from Mexico

7-153, Mexico, Research

Author: *Paloma Palacios Gonzalez, palpalgon@hotmail.com*

Co-Authors:

In the field of gifted education, there is special interest in using adequate translation procedures. If translation procedures are not properly employed, studies may suffer from the possibility that results obtained are due to translation errors rather than the variables being studied. An adequate translation procedure is needed in order to produce a translation of the original instrument that is equivalent to the source version.

The present study comprises a real case from a study on "Mexican educators' attitudes towards acceleration of gifted students". As no adequate attitudinal scale existed in this matter, the researcher had to employ different translation and adaption techniques according to best fit the context and language of the participants in the study. An analysis will be made on the numerous techniques that were employed to achieve measurement equivalence through a given tool, used between different language groups. The rationale for test translation and adaptation is based on the idea that variables such as culture, language and social conditions have to be considered to ensure equivalence of measurement. The issue of instrument translation is of special interest for gifted and talented research in Mexico as currently research in Gifted Education is scarce. This might be at least partially a result of the lack of valid and reliable instruments available in the Spanish language and adapted for the Mexican population. As an implication, this study may contribute to gain further understanding in the variables that influence translation of instruments; this information may positively impact how researches should employ adequate translation techniques.

A Case Study Examining Dual Language Acquisition and Gifted Abilities

7-158, China, Research

Author: *Sonya Porcher, porcher43@yahoo.com*

Co-Authors:

A case study was conducted to examine dual language acquisition of two students in an international prekindergarten and kindergarten class in China. The purpose of the study was to observe the two students' language development in both English and Chinese. An 17 component of the study was to determine gifted characteristics of the learners, since they both exhibited higher language ability than 17 students at their age level. The results of the study provided insight into the effectiveness of the play-based curriculum used in meeting the social, emotional and academic needs of the students. Student observations, teacher interviews, and parent interviews revealed that students exhibited behaviors such as seeking negative attention, inability to focus, and difficulty playing with 17 same age children. Assessments were administered to determine Lexile scores and IQ. Student portfolios including writing and art samples were used to review their language abilities in Chinese and English, which revealed unique components about language development at the preschool level. The results of the study allowed recommendations to be made to the students' teachers and parents to strengthen the academic program support. Student referrals were made to local agencies that work with international schools to ensure that the students' behaviors were appropriately addressed.

Metacognitive Skills for Primary School Students

7-182, Netherlands, Practical Experience

Author: *Lineke van Tricht, lineke@bureautalent.nl*

Co-Authors:

Metacognitive skills are thought to start developing when a child is around 8 years old. In the Netherlands research by Dr. M. Veenman showed that half of the gifted students had not developed metacognitive skills at the age of 17. We wanted to find out if we could promote the development of these skills at an early age by training them. So we developed a game and enrichment lessons aimed at enhancing these skills. We worked with children in two gifted classes at two different schools. We divided the children into research group and control group. We pretested the children, had them play the game in which they learned the steps of metacognition, then taught them the enrichment lessons and post-tested them. At the moment we are still working on the results, but they will be available by August. In fact they will be presented in June 2015. We would like to end our session by showing the game and materials we used and by explaining teachers how they can work with them.

Greek Teachers' Attitudes towards the Education of the Gifted Students

7-188, Greece, Research

Author: *Aikaterini Gari, agari@psych.uoa.gr*

Co-Authors: *Irina Mrvoljak-Theodoropoulou*

The issue of gifted education remains for the Greek educational system a vague idea that, although has been inserted in some initial legislative regulations since 2008, no educational and psychosocial implementations have been designed within the educational system. The present study is to explore Greek teachers' attitudes towards the gifted education along with the gifted individuals' role in society. The "Gagné and Nadeau's Attitude Scale" of 36 items, along with 3 culture bound questions, on a seven-point Likert scale, and Symposia additional questions on demographic issues, were administered to a sample of 568 teachers, 282 in Athens and 286 in 17 Greek cities, derived mostly (56.3%) from primary education. An exploratory factor analysis with principal component method and Kaiser Normalization revealed six factors explaining 45.8% of the variance, with a lot of similarities to the "original" factor structure. The factor scores, as dependent variables, were studied in terms of teachers' gender, years of prior experience both in general and special education, and their specialization of studies. The results are discussed in terms of relevant research findings for Greek teachers and the specific characteristics of the Greek educational system, in the frame of international research studies.



The Role of Family and Enrichment Program in the Development of a Gifted Student

7-198, Brazil, Research

Author: *Liliane Carneiro, dvilarinho.rezende@gmail.com*

Co-Authors: *Daniela Vilarinho-Rezende, Clarissa Borges, Eunice Alencar, Denise Fleith*

Parents and teachers are not always prepared to meet satisfactorily the needs of talented youth. Some parents are confused about the role they should play in the education of gifted children and schools offer the same educational proposals to all students, disregarding individual differences. The purpose of this study is to investigate the perceptions of a 17-year-old gifted program teacher and a 19-year-old gifted male student about how family and attendance at an enrichment program influenced the development of this gifted individual. Semi-structured interviews were conducted with each of the participants. Content analysis was used to interpret the data. The results indicated that the student had some difficulties in social interaction in the mainstream education due to the label of gifted, but felt stimulated in the enrichment program. The family exercised an authoritative parenting style, which encouraged the student to constantly search for knowledge. The enrichment program teacher's practices contributed to the student's sense of belonging and challenged him to achieve better results. In addition, the program provided an environment where the gifted student got to know colleagues who had similar characteristics. It is suggested that issues related to this group, such as personal traits and social-emotional development, should be widely enlightened by the guidance service, especially in mainstream education, in order to help school community better serve gifted students.

The Study of the Effect of a Mathematical Literacy of Mathematically Gifted Students of High School through a Teaching Integrated CPS into Mathematical Writing

7-216, Taiwan, ROC, Practical Experience

Author: *Cheng-Hua Tsai, smofishmilkfish@gmail.com*

Co-Authors: *Erh-Tsung Chin*

The main purpose of this study is to explore the effect upon gifted senior high school students' mathematical literacy of the teaching integrated creative problem solving into mathematics writing [CPSIMW]. A quasi-experimental approach is adopted as the research design. The subjects are 171 mathematically gifted senior high school students, ranked more than PR97 of math scores of the Basic Competence Examination in Taiwan taken. The main data are collected through a pre-post test of mathematical literacy administered to the experimental group of 87 students receiving a six-week CPSIMW teaching, and the control group of 84 students receiving the traditional expository teaching. T-test and one-way ANOVA are applied to the data analysis.

The results of the study show that:

1. The experimental group students' performance of mathematical literacy is significantly better than the control group.
2. Except for the lower achievers of pre-test of the experiment group, both the middle and high achievers perform significantly better in the post-test compared with the pre-test.

Abundant and diverse prior knowledge and experience are crucial for students solving mathematics problems effectively through the CPSIMW teaching, student-centered in contrast with the teacher-centered traditional expository teaching, enables students to actively construct their own knowledge and appreciate the core values of mathematics with the character of diversity and openness of problem-solving thinking.

Intelligence and Development in the Theory of Positive Disintegration

7-219, Canada, Practical Experience

Author: *Sal Mendaglio, mendagli@ucalgary.ca*

Co-Authors:

Since the introduction of Dabrowski's theory of positive disintegration (TPD) to the field of gifted education by Michael Piechowski in 1979, there is evidence of an increased understanding of Dabrowski's theory. Representations of TPD in gifted education has progressed from an implicit, if not explicit, view of TPD as a theory of giftedness and a theory of overexcitabilities. TPD is being acknowledged more and more for what the theorist himself declared it to be: a theory of personality. However, the greater appreciation of the fullness of TPD has yet to significantly influence practitioners' and researchers' approach to overexcitability (OE). That giftedness is equated with all forms of OE and therefore the potential for advanced development seems to continue to underlie discourse on this topic. This is contentious since the criterion by which practitioners and researchers use to identify giftedness is intelligence. The implication is that a high level of intelligence is always associated with all forms of OE. In fact, this is contrary to the view of intelligence in advanced development according to TPD. This session discusses Dabrowski's perspective that the relationship among intelligence, OE and development is complex. Giftedness, as a high level of intelligence, is not necessarily a predictor of the presence of all forms of OE. It is hoped that examining the role of intelligence in TPD will contribute to the ongoing, deeper understanding of Dabrowski's theory.

Perceptions of High Achieving Students: Results of a Cross-Cultural Study with Teachers

7-238, Germany, Research

Author: *Tobias Debatin, albert.ziegler@fau.de*

Co-Authors: *Mojca Jurisevic Blumen Thomas Eberle Pedro Sanchez Kyunghin Park Paromita Roy*

Ugur Sak Jiannong Shi Marilena Z. Leana Tascilar Wilma Vialle Albert Ziegler

The current cross-cultural study investigates the expectations of teachers in relation to low, average and high



achieving students in nine countries (Australia, China, Germany, India, Korea Mexico, Peru, Slovenia, Turkey; N in each country = 720). Teachers were asked to indicate their expectations about a fictitious new student in their class with respect to three categories: intellectual abilities, social competence, and eagerness. Besides cultural effects, differences concerning the gender of the participating teachers, the gender and the ability level of the target students, and interaction effects were investigated. Preliminary data analyses show inconsistent and negligible gender and target gender effects, but significant cultural differences and effects of the students' ability level. The results are discussed with regard to possible explanations and educational consequences.

Self-Regulated Learning Strategies between Multicultural and General Children

7-269, South Korea, Research

Author: *Shindong Lee, hyeyoung00@hotmail.com*

Co-Authors: *Jinho Kim Hye-Young Park Soyoung Joo*

The purpose of this study is to fully investigate the differences in the use of self regulated learning strategies by two different groups of elementary school students. The children from multicultural families are currently categorized as disadvantaged children in Korea, but they need to be defined more deeply and separately due to the continuous increase of multicultural families through international marriages and oversea workers.

Even though two groups of students use a similar range of strategies, strategies most frequently used and the patterns of use are different not only from their groups but also depending on their gender, their academic achievement. There are several reason why these differences are shown. First, culturally diverse children have problems due to the alienation and the lack of equal opportunity given to children of multicultural families. Second, students and teachers may have difficulty forming relationships. Third, educating the parents of such students remains a critical challenge. Fourth, there is a lack of research regarding the identity of multicultural children in Korea.

We will present the differences in the use of Self-Regulated Learning Strategies and each of these issues in-depth in the parallel session and future of Korean multicultural Gifted identification and it's implications.

Gifted Student's Needs and Possible Interventions to Gifted Students in Danish Schools

7-281, Denmark, Research

Author: *Jill Mehlbye, jime@kora.dk*

Co-Authors: *Lasse Hønge Flarup Katrine Iversen*

Gifted student's needs and possible interventions to gifted students in Denmark

by Jill Mehlbye, Lasse Hønge Flarup, Katrine Iversen, KORA

KORA has made a study about gifted children in Danish schools in the beginning of 2015. In Denmark we traditionally have had an intensive focus on the social disadvantaged students and how to help them perform well in schools, while the well-being and intellectual performance of gifted students in Danish schools often are a neglected topic. This paper reports on an overview of, what is offered to gifted students in Danish schools together with an international systematic review of evidence based interventions designed to improve the wellbeing and the educational achievement of gifted students. The purpose of the study is to facilitate and stimulate effective interventions to gifted students in Danish schools.

The Enrichment as an Educational Response for Gifted Students

7-286, Brazil, Research

Author: *Fernanda Hellen Piske, nandahellen@hotmail.com*

Co-Authors: *Miranda Lucia*

Enrichment programs emerge as one of the most common forms of learning support and development of gifted students. In isolation, or complemented by 17 measures, enrichment programs allow the inclusion of gifted students in regular classrooms. Within this concern for school inclusion of gifted students, we present the program "Odyssey" applied in a school zone north of Portugal. This program essentially follows the design of giftedness Renzulli (1977) and the Model of the Triad enrichment by the same author and collaborators (Renzulli & Reis, 1994). Together with the organizational structure of the program sessions, describes the internal structure of some sessions, highlighting the dynamic and the procedures followed in order to maximize student involvement in acquisitions and provided training. The results in terms of its impact on a group of pupils aged between 11 and 12 years (n = 134) with regard to creativity as measured by the Test of Creative Thinking of Torrance, suggest that gains occur at the level fluency, elaboration and originality figurative, not being obvious gains in these tasks with verbal content, more related to school learning.

Gifted Students'™ Unique Personalities: A Convergence of Three Perspectives.

7-296, USA, Research

Author: *Shelagh Gallagher, sgallagher5@carolina.rr.com*

Co-Authors:

Problem Statement: One of the fundamental assumptions in gifted education is that gifted students are different, yet we still debate the nature and extent of that difference.

Purpose of the Study: Research on personality and intelligence is summarized, including Big Five Factor model, research using the Myers Briggs Type Indicator, and research on Dabrowski's overexcitabilities.

Method: A review of the research literature identifies common trends associating giftedness with specific personality charac-



teristics. After outlining the theories a synthesis will be presented and discussed with respect to giftedness. Findings: Openness to Experience is consistently, positively correlated with intelligence. Heritability studies suggest that Openness is “substantially” heritable and that it contributes to intelligence. Openness is correlated 17 attributes cited in gifted literature including creativity and moral reasoning. Openness to Experience shares a strong, positive correlation with the Sensing-Intuition Scale of the Myers-Briggs Type Indicator. Research using the MBTI with gifted students consistently demonstrate that gifted children prefer Intuition, reinforcing the Big Five Openness to Experience findings. Openness findings also overlap and reinforce studies on overexcitability, as qualities such as “absorption”™ and “emotional intensity” are related to both constructs. Conclusion: The research converges around personality attributes associating giftedness

Understanding the Gifted Mind Functions and Their Impacts on Personal Development

7-316, Thailand, Practical Experience

Author: *Pichak Siripoonsap, pichaksiri@yahoo.com*

Co-Authors: *Ngarmmars Kasemset*

It is possible to study and understand the gifted mind and mind functions using computer hardware and software analogy. Whatever the gifted do or act physically is coming from their internal mind functions or processes. We may call these mind processes - “mind apps.”

These mind apps are directly related to the development of gifted persons. There are several sets of mind apps. And we are able to link them to personal behavior & character. There are apps that are related to thinking & intelligence, feelings & emotions, morals & ethics, social relationships to 17 persons and 17 beings, etc.

Understanding their mind apps and knowing how to manage them will enable the gifted to lead a bright and happy life.

Metalanguages in the Social Practice of Leadership to Nurture Creative Giftedness

7-326, Singapore, Research

Author: *Letchmi Devi Ponnusamy, letchmi.p@nie.edu.sg*

Co-Authors: *Liang See Tan Suryani Rahamat*

There is growing interest amongst stakeholders for schools to foster creativity and within the field of giftedness, creativity is being accepted as a significant aspect of giftedness and talent development. Research has shown that school leaders offer vital visionary direction and are as crucial as teachers to organizational learning and educational change. Numerous studies of school leadership have characterized the dispositions of transformational leaders, such as a higher tolerance for ambiguity and uncertainty, and an ability to live with the messy process of change, while 17s have pointed to the significance of instructional leadership in ensuring success in educational change in school. However, there is not much known about the kinds of social and cultural leverages that leaders utilize in their efforts to bring about educational change. Furthermore, to nurture creative giftedness, school leaders have to lead flexibly to foster creative thinking. Data from a six-year single-site case-study that tracked the thoughts and actions of four senior leaders of a specialised independent school that seeks to engender creativity in pre-tertiary students is presented. The findings indicate that leaders leverage on specific metalanguages, such as that of the context, and enculturing creativity in their envisioning process and their interaction with teachers’ and pupils’ in this school. The findings offer insights for the social practice of school leadership for creativity.

The Impact of Teacher Beliefs and Classroom Practices on the Attitudes of High-Ability Students Towards Mathematics

7-329, USA, Research

Author: *Leticia Hahn, lhahn@niagara.edu*

Co-Authors:

Teachers’ beliefs regarding the nature of mathematics and the resulting attitudes towards teaching substantially impact how they engage students in activities that are aimed at promoting the construction of mathematical concepts and how assessment methods are selected. These classroom practices, in turn, influence students’ attitudes toward learning the subject matter, thus also affecting goal setting and academic performance. In this session, we will present the results of a research study that examined the (1) relationship between teachers’ beliefs about the nature of mathematics and the resulting classroom practices and assessment procedures and (2) the impact that such classroom practices and assessment preferences have on the attitudes towards mathematics among high-ability students at the middle-school level. We will also analyze the relationship between the resulting student attitudes and actual performance in the math classroom. The theoretical implications of these findings in the field of gifted education will be discussed as well as some practical suggestions for classroom teachers.

Teacher Education, International Master-Program and In-Service-Trainings for Gifted Education in Switzerland

7-332, Switzerland, Research

Author: *Victor Mueller-Oppliger, victor.mueller@fhnw.ch*

Co-Authors:

The University of Education of Northwestern Switzerland offers advanced studies in gifted education. These programs enhance the teachers competencies in gifted education and talent development and enable schools to modify their



learning structures in order to improve differentiation related to the heterogeneity of their students.

In accordance with the European Declaration of Bologna, the programs open up possibilities to raise teachers' professional competencies to promote the students' capabilities based on their potentials. Therefore schools develop self-learning architectures with diverse learning paths for individualised and personalized learning; and they organize more flexible learning structures, including additional settings for high-end-learners. Besides the improvement of high achievements, the programs strongly consider the strengthening of the students' personal and social competencies and the awareness of responsibility for their special situation.

The advanced studies are designed as blended learning concept with online modules, face to face sessions and regional reflective groups. The concept meets the needs of educators who have professional and family obligations that make it impossible to take part in regular fulltime advanced studies. Additional to the advanced study programs the University of Northwestern Switzerland offers various In-Service-Trainings.

Concepts, experiences and effects and their impact to the professional field will be presented and discussed

Small Fires in the Darkness; Illuminating What Works Well and Why in More Able Education

7-336, United Kingdom, Practical Experience

Author: Ian Warwick, ian.warwick@londongt.org

Co-Authors:

For over two years our research sought to explore the current crisis in education for the most able and to attempt a state-of-the-nations analysis of contemporary practice. The purpose was to address the more divisive issues that have damaged gifted teaching worldwide with an analysis of the state of play of education internationally. This focused on an exploration of the wide range of programming options and techniques for teaching the most able students around the world.

Our methods drew on our own, first-hand experiences as practitioners, collecting a wealth of global case studies and international research to scrutinise techniques and practices from leading countries.

Our findings suggest the critical factors are the importance of the insightful, supportive mentoring relationship between teacher and learner, appropriate depth and breadth for learning assignments and respect for learners' voices.

The implications for practice emerged as the balance between spoon feeding and challenge, equity and excellence, work habits and enquiry skills and training, resources, and support for teachers.

Throughout the study, the issues with regard to socio-economic disadvantage and racial/gender bias are confronted directly. Handy commented that 'it is up to us to light our own small fires in the darkness.' Our study attempted to locate some of those small fires which illuminate the teaching of the more able, in order to explore them and lay bare any kernel of truth that they may contain.

Personal Epistemology and Giftedness: Implications for Secondary Gifted Education

7-339, USA, Research

Author: Shelagh Gallagher, sgallagher5@carolina.rr.com

Co-Authors:

Research in the area of personal epistemology, or belief in the nature of knowledge, suggests an association with intelligence that has implications for how secondary education is organized for gifted students. One of the hallmarks of expert reasoning is a mature, or sophisticated, view of knowledge and knowing. This research investigates trends in the growth of personal epistemology of gifted students.

The Learning Context Questionnaire (LCQ), a measure assessing students' epistemological development according to Perry's Scheme of Intellectual and Ethical Reasoning, was administered to middle and high school students. LCQ scores of gifted students were significantly higher than the scores of typically developing students, by an order of half a standard deviation. Shifts in belief represent a qualitative change in educational needs and desires, so even small differences can have substantial implications.

This research supports parallel studies of gifted adolescents suggesting a qualitative shift in reasoning at early adolescence that leaves the gifted adolescent ready for a more sophisticated, abstract, and complex curriculum than typically developing students of the same age.

These data suggest that gifted students will value educational formats different from those desired by typically developing students. Gifted students will value education that focuses on unanswered questions and constructed understanding as opposed to certainty-based or right-wrong orientation.

Serving Gifted Students: Beliefs and Practices among Educators in Ireland

7-341, USA, Research

Author: Colm O'Reilly, colm.oreilly@dcu.ie

Co-Authors:

Historically, gifted students have not received much attention in Ireland and little formal programming has existed. A national survey was undertaken to better understand the state of gifted education across the country. More than 800 teachers and principals representing every county responded to the survey. The survey explored respondents' perceptions of support they receive to serve gifted students and their attitudes of support for gifted education, along with their beliefs about gifted students. Teachers were also asked to describe their classroom activities in support of gifted students. Most respondents indicated positive support for special services for gifted students. Principals and teachers have different perceptions of



the support teachers have to differentiate instruction for their high ability students. Although 85% of teachers reported that they differentiate instruction for their high ability students, a comparison of reported classroom practice indicated little differentiation of the curriculum is happening. Beliefs about gifted students suggest that low income, minority, and socially isolated students may be overlooked by educators in Ireland. Following a review of the findings, steps that can be taken to build support for needed services will be discussed.

A Study of Senior High School Gifted Students' Strategy Making When Solving Mathematics Problems

7-398, Taiwan, ROC, Research

Author: *Liu Pei-Wan, forpen1986100720051009@gmail.com*

Co-Authors:

This study aims at investigating senior high school gifted students' problem solving strategies and their creative methods when solving mathematics problems. The research subjects are six out of 240 high school students with ranking more than PR97 of math scores of the Basic Competence Examination in Taiwan taken in the last year of their junior high school study, who participate in the initial screening for a national competition of mathematics competence. Two selected problems are given to the subjects to provide a concise solution in ten minutes. Qualitative data are collected through interviews and students' thinking aloud, and then analysed for deducing the strategies they choose to apply and the corresponding creative problem solving methods.

The results show that: (1) the subjects could think outside the box, making highly transformative and creative strategies in a limited period of time when solving mathematics problems; (2) they would apply their competence of reading, investigating, planning and analysing, to comprehending the extrinsic and intrinsic conditions of the problems, and provide efficient and creative problem solving strategies.

Gifted students clearly possess the cognitive idiosyncrasy of efficiently comprehending the nature of a mathematics problem, flexibly and systematically monitoring the process of solving problems, and adequately proposing creative problem solving strategies. However, if the given problems are normal and routine ones, such advantages gifted students possess might not exist. This result is worth of reference for mathematics gifted student training programme design.

Discovering the Cultural Conception of Giftedness in Lebanon

7-432, Lebanon, Research

Author: *Anies Al-Hroub, aa111@aub.edu.lb*

Co-Authors: *Sarah El Khoury*

This study explored the cultural dimensions notion of giftedness from the perspectives of elementary teachers in Lebanon. The purpose of this study was twofold: (a) explore the conceptions teachers currently have on attributes of gifted students, and survey the current practices used as forms of identification for gifted students. Data were collected through Symposia0 surveys from six schools, 15 semi-structured interviews and five focus group discussions with elementary school teachers in five private schools in the greater Beirut area. The results revealed various definitions from each school. A definition for giftedness was constructed from the findings which included a combination of three parts: High intellectual ability, high academic performance, and social intelligence. High intellectual ability includes high logical thinking, and that the gifted student's scores on the report cards should be the highest among the class. High academic performance means that gifted students excel in one or more academic subject area. Giftedness also encompasses social intelligence, which means that the student should be a natural leader, take charge of small groups, and be able to deal with real life situations that are mainly applicable in Lebanon. The constructed definition has some similar attributes to Sternberg's WISC theory and Renzulli's Three-ring model of giftedness, however with some differences as well. As for identification procedures, there was no official identification process.

What is Epistemology Anyway? The Beliefs of Preservice Teachers Regarding Learners of Different Abilities

7-473, Australia, Research

Author: *Wilma Vialle, wvialle@uow.edu.au*

Co-Authors:

Porath and colleagues (2009) explored the epistemological beliefs of gifted children and adolescents and demonstrated a clear developmental trajectory for those beliefs. In particular, they concluded that learners' conceptions of knowledge and learning are an essential foundation for the pedagogical approaches adopted in the classroom. Teachers play an important role in influencing children's conceptions of knowledge and learning as they move through the education system. In turn, the beliefs of teachers are often established in their preservice training. Drawing on Porath's work, the research reported herein explored preservice teachers' personal epistemological beliefs along with their beliefs about the learning of gifted, non-gifted and struggling learners. Two hundred preservice teachers in a regional Australian university participated in the research. Preservice teachers differed in beliefs across gender and ability levels. Further, the participants held different perceptions about the learning capacities of gifted, non-gifted and struggling learners. Implications for gifted education are discussed.



Guidance and Counseling

Evaluation of Pedagogical and Therapeutical Measures for Gifted Children

8-28, Switzerland, Research

Author: *Claudia Jankech*, claudia.jankech@jankech.ch

Co-Authors:

This study assesses of measures (pedagogical and therapeutical) for gifted children with academic difficulties (underachievement and failure) and/or relational problems. We sent catamnesis questionnaires, completed by parents of over a hundred children and adolescents, who have been seen in psychological consultation, and compare different methods. Measures taken have permitted to reduce academic difficulties from 16 % to 11% (in comparison with the first study 2001). Therapeutical groups assertiveness have allowed many gifted children to build friendly social relationships with their peers and reduce loneliness. These results brought out the need to develop appropriate pedagogical and therapeutical measures for gifted. They often need guidance during their school career, to learn how to use successfully their abilities (unused at school), because big facilities can turn against themselves and produce failure. Unsuccess, underachievement or social suffering are preventable if the studied measures are applied in time (60% to 80%), avoiding vicious circle by teaching them how to work. These measures don't require special schools. Sometimes gifted children need (also or only) psychological measures. Claudia Jankech Psychologist-psychologist FSP Read more: Study presented at 1st Psyrene Congress (psychology, research, neurosciences), France 2011 http://www.jankech.ch/pdf/eval2011_en.pdf

Grade Skipping as a Successful Option in Germany

8-69, Germany, Practical Experience

Author: *Petra Leinigen*, petra.leinigen@dghk-nds-hb.de

Co-Authors:

Over the course of more than ten years I have been counselling about 500 families. In more than a third of the cases, skipping a grade has been a possible option. About 150 children skipped, usually in grades 1 and 2 of primary school. Although in Germany the number of grade skippers has increased since the 1990s, there are still not many schools that have experience with it. And despite positive research concerning acceleration (US-American and German), schools are still very reluctant implementing it. Very few teachers offer continuous and, what's more important, high level enrichment to gifted children. And even if the enrichment is at a high level: when it happens just once or twice a week in a pull-out programme that is not enough. Children need teaching that is challenging, and for some gifted children that can only be achieved by placing them with children whose intellectual and emotional development is more or less the same. Besides experience and research shows that gifted children often prefer older friends who may not be age mates, but who are intellectual and emotional peers. In my presentation I will explain the effects of grade skipping based on the experience of my counselling in Lower Saxony, Germany and as a nationwide telephone counsellor for parents of gifted children for the German Association for Gifted Children (DGhK). Although there are of course sometimes problems after grade skipping, they are less than the problems the children had before.

Supporting Gifted Children in a Regular Class

8-199, Estonia, Practical Experience

Author: *Lucia Riet de Mahhov*, luciariet@hotmail.com

Co-Authors:

In Estonia the support system for the gifted children is still in formation. While there is plenty to improve on the national level, it is also important to develop the gifted support from below. As a psychologist and practicing psychologist, I focus my presentation on the issues of identification, counselling and guidance in the given school framework, mainly in a class of same-age, non-differentiated pupils.

Emotional or behavioural patterns symptomatic to higher sensitivity often accompanying the gifted children are: isolation, frustration, anger, boredom etc. Children with such problems would be the first target group for a giftedness evaluation. The tools to be used range from simple questionnaires to evaluation worksheets. Sometimes psychological diagnosis is required to figure out twice exceptionals.

The next step after identifying a gifted child is to design a support mechanism including enrichment measures, as well as emotional support at school and at home. Individual counselling sessions with the child, advice to the teacher and integration counselling for the classmates serve as the main delivery method here. An important item not to be forgotten is a regular follow-up and feedback loop with the teachers and parents.

At the end of my presentation I will offer some recommendations based on my practical experience on the importance of being approachable, pro-active work in the primary years, some screening and evaluation possibilities at school.



Perfectionism, Social Connectedness and Academic Confidence in Academically Talented Chinese Primary Students: A Qualitative Investigation

8-416, Hong Kong, Research

Author: Ricci W. Fong, ricciwfong@gmail.com

Co-Authors: Mantak Yuen

Research over the years has found close associations between perfectionism and various socialemotional and academic correlates in the development of gifted and talented students. However, Chinese students, who are known to grow up in examination-oriented environments that emphasize academic excellence, are underrepresented in the perfectionism literature. Previous studies which involved Chinese students, including the gifted, suggested that the conceptualization and influences of perfectionism may differ in Chinese students given the differences in the sociocultural context where students' perfectionism is developed. The purpose of this paper was to examine the perfectionist characteristics of academically talented Chinese primary students and how the perfectionist characteristics related to their perceived social connectedness and academic confidence. Semi-structured individual interviews were conducted with 21 fourth to sixth graders (aged 9 to 12) in Hong Kong. Findings indicated that 'emphasis on effort' and 'sensitivity to mistakes' were the key characteristics underpinning the students' pursuit of academic excellence. Unlike previous findings in the West, these primary students tended to perceive any failings they might experience in a positive light, motivating them to expend greater effort. The findings also underscored the crucial role of social connectedness in alleviating students' negative reactions toward mistakes, as well as in sustaining and fostering their academic confidence. Taken together, this paper offers an alternative illustration of perfectionists which adds to the existing literature on perfectionism in Chinese primary-age students. Implications pertinent to guidance and counselling practices will be discussed.



Homeschooling, Parenting, and Parent Matters

Academically Talented Asian-American Women: How Parental Expectations Impact Their Future

9-53, USA, Research

Author: *Nancy B. Hertzog, unae@uw.edu*

Co-Authors:

Problem. Asian Americans may account for a small, albeit growing, percentage of students in the USA but have significantly been overrepresented in gifted programs (Yoon & Gentry, 2009). Less known are the cultural influences, including the impact of parental expectations on decisions students make for their future (Okubo, Yeh, Lin, Fujita, & Shea, 2007). **Purpose.** The purpose of this study was to greater understand how the career decision making processes and experiences of female, Asian American alumni of early college entrance programs were influenced by their parental expectations. **Methods.** Researchers employed a mixed methods approach. Quantitative and qualitative data were collected through a web-based questionnaire and follow-up semi-structured interviews with 7 Asian American women. **Findings and results.** More than half of the Asian American women interviewed reported double majors, high cumulative GPAs, completed undergraduate research, and received a variety of merit-based awards. These achievements matched their parental expectations. However, several women shared that they suffered from loneliness, unhappiness, too much pressure, eating disorders and depression at some point in college and beyond. **Conclusion.** Academic and career decision making starting with the decision to enter the early entrance program, to choice of first major, careers and possibly even choice of graduate schools may have been influenced by parental expectations. **Implications for practice.** Results from this study point to a need for parents, counselors, and educators to address the psychosocial challenges that gifted Asian American women may face in academic and career decision making. Okubo, Y., Yeh, C.J., Lin, P.Y., Fujita, K., & Shea, J.M. (2011). The Career Decision-Making Process of Chinese American Youth. *Journal of Counseling & Development*, 85. Yoon, S. & Gentry, M. (2009). Racial and Ethnic Representation in Gifted Programs: Current Status of and Implications for Gifted Asian-American Students. *Gifted Child Quarterly*, 53(2), 121-136.

A Supported Playgroup for Families with Young Gifted Children: Parents' and Facilitators' Perspectives

9-75, Australia, Practical Experience

Author: *Kerry Hodge, kerry@star.org.au*

Co-Authors:

When a young child's development seems advanced, whom can parents talk to? Family and friends may not be sympathetic and early childhood educators may be sceptical or unsure of appropriate recommendations. Recognising the scarcity of programs for very young gifted children and their parents, a Sydney (Australia) charity established a weekly supported playgroup for families who believed that their children aged 2-5 might be gifted. The facilitators had practical experience with young gifted children and their parents in university-based settings. This presentation reports on the expressed expectations of parents inquiring about such a playgroup, the evolving model over two years of operation, and the perceptions—gathered formally and informally—of parents who attended. The facilitators' perceived outcomes for parents and their young children will be discussed, as well as program elements that appeared to contribute to those outcomes and the joys and challenges in delivering a supported playgroup.

Exploring the Parenting Styles and Interacting Models of Gifted Students and Parents from New Immigrant Families

9-149, Taiwan, ROC, Research

Author: *Yung-Ling Chi, lynnji1987@hotmail.com*

Co-Authors:

This article addresses a further study of practice and application of mentorship on gifted students program from 2010 to 2012, focusing especially on the parenting styles and interacting models in families. The participants of this study were gifted students from new immigrant families, their parents and mentors, which were flexibly divided into multiple groups, then starting a one-on-one class, a small group discussion or a large group activity depending on the needs. In the mentor-student part, to reach the aims of action research, they developed multiple teaching and learning strategies in an open and trusting atmosphere where styles and rules were flexible. In the mentor-parent part, it could be discovered that these parents were getting along well with mentors and putting great emphasis on nurturing children in the feedback and sharing meetings; however, the process of practicing mentorship program also helped build a social and cultural circle for new immigrant families, to share family stories and experiences together.

This study was conducted in the prospect of continuing the positive interactions between mentors and parents, responding to expectations of this program and further discover the specialties from interactions between family members. Our research group was trying to collect abundant data by observing and recording in the field, such as meetings of specific issue discussion and experience sharing, regular performances, research symposiums and workshops, in-depth interviews and home-visits; however, the process of collecting data only ended when reaching data saturation that we could explore the picture of daily interactions and nurturing process in new immigrant families interwoven with two cultures. Finally, we found that the parental nurturing attitude and style have crucial effects on the development of gifted students from new immigrant families, and these gifted children were considered as the important property of their parents. Besides, the immigrant parent had to take a long period of time to adapt to foreign culture because of their different ideas of the best parenting and nurturing. Nevertheless, cultural differences are viewed as beneficial to cultivating children with broader perspectives. Most importantly, keep listening and sharing experiences together certainly helped the parents of new immigrant family re-realize and get deeper



understanding of their own intricate family stories, and feel more positive and empowered to help their children. Actually, it was also the primary purpose of this study.

“Not by Chance” in Parental Involvement: Parent Experience and Strategies in Their Quest to Fulfill and Maximize Their Gifted Child’s Potential

9-212, Israel, Research

Author: Hila Green, hila.green@gmail.com

Co-Authors:

This qualitative study is an effort to broaden the understanding of how parents of gifted children develop their involvement with their child’s education.

Researchers have recognized that the concept of “parental involvement” includes a multitude of parental activities, at school and in the home. However, studies into the involvement of parents of gifted children are few. The aim of the present study is to put forth the experiences and strategies of involvement employed by parents while raising their gifted child. Through in-depth interviews of 10 mothers followed by categorical content analysis, the rich description of the parent’s experiences exposed the strategies and needs of parents, as they strive to fulfill and maximize their child’s potential.

Parent’s experiences, at home and with the school system, generated what I term “an active anxiety”. This anxiety leads to strategies of involvement, including but not limited to those described in the research literature on parents of non-gifted children. This presentation will focus on four themes: (a) compensation for deficiencies in schooling, (b) child’s navigation, (c) parental choice of school and curriculum and, (d) manipulation of the system. Parents base these strategies on the unique personal characteristics of their child and on the experiences in the interaction with the school system.

This research demonstrates the need for guidance programs directed towards creating a partnership between parents and schools.

What Girls Have to Say about Talent Care in STEM in Hungary: Lessons Learned from an Environmental Scan

9-383, Hungary, Research

Author: Monika Reti, reti.monika@ofi.hu

Co-Authors:

While girls and young women in STEM education outscore boys or young men, STEM enterprises face difficulties in finding trained female workforce in Hungary.

Findings presented here are the results of an environmental scan in the Székesfehérvár region in Hungary, which focused on girls and women in STEM. The purpose of this paper is to offer guidelines for parents in providing support for young women pursuing STEM careers. After a literature review, a qualitative research (following preliminary research using online questionnaires) involving focus groups with main stakeholder groups (students, parents and teachers) was carried out, augmented by in-depth interviews.

The present practice, with talent care activities organized around contests, seems to counteract the volition to recruit more students to STEM (besides contributing to the polarization of the Hungarian educational system). While girls tend to underestimate their achievement and abilities, negative family narratives about STEM jobs and requirements (arising from the intention to warn their daughters) coupled by high expectations, undermine girls’ self-esteem. Also, focusing on a growth mindset (Dweck, 2006, 2012) can support their dedication. Parents seem to have a key role in eliminating high anxiety of even high-achieving girls (OECD, 2015), and in empowering young women to persist.

The presentation also introduces a new project, which emerged from students’ and parents’ voices listened to in this research.

Using Volunteer-Run Web Chat to Support Parents

9-448, United Kingdom, Practical Experience

Author: Rebecca Howell, rebeccahowell@potentialplusuk.org

Co-Authors:

How can volunteers support parents of gifted children using new media? To address this issue and to continue services for parents in the face of a lack of funding for their helpline, Potential Plus UK has developed a training programme to train volunteer parents to support 17 parents of gifted children via web chat. With the aim of providing an accessible method of support that is both instant and available at people’s fingertips, the service was launched in April 2015. Details of our training programme, the structure of the service and our experience so far will be provided.

Parents’ Perspective on Gifted Education in Primary and Secondary School

9-454, Slovenia, Research

Author: Mojca Jurisevic, mojca.jurisevic@pef.uni-lj.si

Co-Authors:

The research aimed to understand parents’ perspective (N = 1960) on gifted education in Slovenian primary and secondary school. For this purpose, the parents’ attitudes towards gifted education were measured as well as parents’ experiences with gifted education in their child’s school were analysed. From the research results, it can be concluded that attitudes of parents towards gifted education whose children were attending primary school were more positive than attitudes of parents whose children attended secondary school. It was also found that attitudes towards gifted education of parents whose children were identified as gifted were significantly more positive than attitudes of parents whose children were not identified as gifted. In addition, the latter group of parents reported frequently that teachers differ in their teaching and communication



with students who were identified as gifted and who were not. The qualitative analysis showed informed findings on parents' experiences with gifted education. Finally, the implications for further research and understandings of parents' role in (inclusive) gifted education will be highlighted.

Parenting Exceptionally/Profoundly Gifted Children: Joy and Challenge

9-455, USA, Practical Experience

Author: Michele Kane, m-kane1@neiu.edu

Co-Authors:

Parents must quickly adjust to the demands of raising a gifted child who is considerably beyond the norm. Often the need for continuous stimulation and little sleep combines with a driving intensity/sensitivity that emerges very early. There can be little respite from the nonstop requirement for interaction and engagement with the world. It is essential for adult caregivers to ensure that they are meeting their own needs as well as those of their children.

This session first examines the distinguishing characteristics of these highly advanced children, issues surrounding being exceptionally or profoundly gifted and the concomitant parenting concerns that ensue. Each EG/PG child has a unique profile which requires modifications in parenting for optimal development.

The purpose of this session is to assist parents in developing a plan of action to meet the needs of each person in the family constellation that is a result of the asynchronous development of the gifted child. Mindfulness tools, contemplative practice resources and suggestions for assisting with managing stress will be provided.

Participants should leave with:

- *A general understanding of the distinguishing characteristics and issues specific to EG/PG children

- *An awareness of pressing concerns of these parents with implications for adopting a balanced approach in meeting their needs

- * Strategies and resources that are aligned to supporting the personal growth of gifted children and their caretakers.

Investigating Science and Arts Center Parents' Awareness Related to Gifted and Talented Students.

9-503, Turkey, Research

Author: Cigdem Celik-Sahin, cigdem.cigdem@yahoo.com

Co-Authors:

Science and Arts Centers are organizations in which identified gifted and talented students have formal education in Turkey. In this research, it is aimed to investigate Science and Arts Center parents' awareness related to gifted and talented students. In 2014-2015 academic years, written interview form was sent to 90 Science and Arts Center parents and they were asked opinions about the foundation aims of Science and Arts Centers, types of intelligence and learning styles of the gifted students, psychological and emotional needs of gifted and talented students, in which subjects parents need support and development and change of gifted and talented students after attending Science and Arts Centers. While constituting open-ended questions in the written interview form, related literature was reviewed and the form was sent to an academic to increase content reliability. After making needed corrections, the interview form was finalised. The data collected by this form was analyzed by content analysis method, and generated themes and sub-themes. These themes were compared to an academic' themes. Findings show that Science and Arts Center parents have high level of awareness about the foundation aims of Science and Arts Centers and intelligence types and learning styles of gifted and talented children. Also, it was concluded that parents need support about their gifted and talented children.



Innovation Education

Gifted Education in Primary Education with Robotics

10-77, Germany, Practical experience

Author: *Michael Nelles, micha.nelles@gmx.de*

Co-Authors:

In the promotion of gifted children at primary schools appropriate offers are unfortunately not widespread. Despite the initiated turnaround support measures for the development of new forms of learning to improve students with an interest in technical and scientific contexts are not yet sufficiently implemented.

An interesting approach is the researcher or the discovery learning. These forms of learning, children with interest in technical and scientific contexts become active and discover and solve problems by trial and error. Discovery learning is controlled by the learners themselves while the children have rules and strategies themselves develop to solve even the problems detected. It passes through the children independent and self-controlled various phases such as observing, comparing, exploring, communicating, planning, experimentation, and 17s depending on the field of action. These phases can be taken up again which is done by the students independently depending on the knowledge gained in the learning process at any point again.

The project "Robotics for Elementary School" based on the method of the researcher or the Discover ligand learning. The idea involves children with a technical and scientific interest the opportunity to sustainably implement in kindergarten and elementary school with technology apart. The free task for the construction of mobile robots allows the children both in playschool and in primary school creative use of industrial materials to create their own robots models. The easy-to-learn graphical programming is no problem for very young children with low number knowledge and psychomotor skills to operate the computer.

Practical STEM Talent Support in School Labs by School Student Research Projects

10-96, Germany, Practical experience

Author: *Dieter Hausamann, dieter.hausamann@dlr.de*

Co-Authors: *Tobias Schüttler*

For any industrialized country it is of high interest to attract young talents to the STEM disciplines in order to maintain and improve its technical and scientific excellence. In order to reach this goal gifted youth must come in close contact with state of the art research and development.

For DLR, Germany's national research center for aeronautics and space, it is of great importance to attract young people to aerospace technology and research. Therefore, it has developed the concept of the DLR_School_Labs and, by now, operates 13 of such science labs. The DLR_School_Lab Oberpfaffenhofen is one of these labs devoted to both objectives of broad education and focused STEM talent support. In the past 12 years the lab has been visited by more than 25,000 secondary school students and it has conducted advanced courses for more than 3,000 teachers.

As a specialty in STEM talent support the DLR_School_Lab offers enrichment projects in which the participating school students execute long-term and complex research activities. The lab has initiated several such projects in close cooperation with the Hector Seminar, an extracurricular talent support program for groups of highly gifted secondary school students: The most recent projects 'Remotely Controlled Roboting', 'Acoustical Satellite Navigation Simulator', and 'Ignition Unit Development' will be described in this contribution. It will be shown that such projects require research efforts at university level in order to result in new technical developments, as well as advanced self-organization and self-management within the student team.

Evolution of a Danish primary school for gifted children

10-115, Denmark, Practical experience

Author: *Søren Skriver Tillisch, dora.danska@adr.dk*

Co-Authors: *Dora Balic Zunic*

Ten years ago, the specific schooling needs of gifted children had been given little attention in Denmark. The founding of Atheneskolen, the first school for gifted children in Scandinavia, was a novel experiment. Today, it is a full size primary school which presents an interesting example of implementing educational strategies for gifted children in a society without a corresponding tradition.

Our object of investigation is the evolution of the school through the challenges it faced which were tackled both by the own original approaches and by the influences and inspiration gathered through international contacts. Inevitably, it also touches the aspects of the circumstances under which the school was established, the role of the involved parties (leadership, teachers and parents) and the influence of the school on the educational practice in 17 Danish primary schools.

We have followed the history of the school using various documentation and direct contact with the actors, partly covered with statistical analyses.

We can document that the project has approved its purpose and that a specialized school for gifted children can satisfy both an improved academic and social development of gifted children.

The school practice shows that the prerequisite is the ability of constant adaptation to the needs of the actual population of pupils and the competences of the teaching staff.

In our opinion, the results can be used as an inspiration for similar projects or for partial implementations in the existing schools public schools in Denmark.



Professional Learning Regarding Pedagogy in a Virtual Academically Selective High School.

10-120, Australia, Practical experience

Author: *Barbara Bannister, barbara.bannister@det.nsw.edu.au*

Co-Authors:

This mixed methods research is part of a wider case study of the first academically selective secondary school in western New South Wales, Australia. Teachers were distributed across a number of school sites, as were the students they taught in regular classes in a synchronous and asynchronous manner. Teachers described some of the challenges they faced; how they overcame them, and the overall professional gains that can be found in a collegial atmosphere divided by time and distance. Technologies used are discussed, methods of developing quality daily professional communication at a distance, in addition to the professional learning possible around assessment for gifted and talented students. The research could have applications in learning environments where gifted students are separated from their teachers due to extended periods of poor weather, geographic isolation, or the choice to attend their local secondary school which may not have a large cohort of like-minds, instead of a full time residential boarding school away from family and friends. The case study outlines a manner in which gifted students can form an online cohort of peers for regular instruction of the required syllabus in several Key Learning Areas.

Creating Sustainable, Effective Teaching of Culturally and Linguistically Diverse, Gifted Learners

10-148, USA, Research

Author: *Julie Swanson, swansonj@cofc.edu*

Co-Authors: *Nancy Sorenson*

Problem and Purpose

Javits Gifted and Talented Education Program has provided a wealth of knowledge on culturally and linguistically diverse (CLD) gifted learners and how to support teachers in their work. Javits, passed by US Congress in 1988, allocated resources to identify and serve students traditionally underrepresented in gifted and talented programs. With the primary goals of reducing the achievement gap and increasing opportunity and access, projects tested out high-powered curriculum and instruction with CLD learners. This study examined five impactful Javits projects through qualitative inquiry centered on how innovative practice takes root or not.

Implications

Significant are impact on CLD learners, teacher preparation and development, and policy. The issue of under-representation of gifted minority and low income students is well documented, but examination of effective interventions targeting CLD gifted learners is limited. This study pinpoints what works so that effective, research-based practices can be more widely disseminated.

Methods and Procedures

Using grounded theory tradition, examination of Javits participation enabled insight into how educators react to innovation as well as their perceptions of CLD student impacts. Data sources (documents, conversations with principal investigators, and educator interviews (N=Symposia)) offer insight into what sustains effective, research-based practices and explores continued student benefits.

Conclusion: Findings and Results

Data point to leadership as the underlying element in sustaining innovation. Leaders ensure innovation extends from district goals; they develop innovation through scale up and involvement of 17s; they purposefully track results. Growing effective approaches is critical to access and opportunity and CLD learners' talent development.

Creative Processes and Teaching Innovation: Helping Teachers to Identify Gifted

10-228, Brazil, Practical Experience

Author: *Vanessa Terezinha Alves Tentes, psivan@terra.com.br*

Co-Authors:

Professionals in the fields of education, health and psychological are not familiar with the characteristics of gifted, leading to inaccurate diagnosis, in which these individuals are incorrectly identified with Attention Deficit Disorder / Hyperactivity Disorder (ADHD). This interventional study presents elements for the development of creative processes in pedagogical practice to avoid pathologizing the school context. The interventions were directed to two teachers who formulated complaints of his students, for the learning difficulties associated with ADHD. The meetings were held for five weeks in which teaching innovation activities were carried out. The results showed positive changes between the initial perception and after the intervention. Eight students were identified, three of the 3rd year and five of the 4th year of schooling. The review went three sets of features: Creativity, Intelligence and Motivation. Students had evaluations and monitoring over five weeks in two-hour sessions. Of the eight students, two 3rd year were considered gifted, showed superior performance in assessment and academic performance. The students of 4th year, three students have demonstrated superior performance in intelligence assessments and school performance and creativity below average and two had average performance in the ratings. Five students, two of 3rd and three of 4th year did not show characteristics associated with ADHD. At the end, only student remained in counseling.



Step-Gate: Digital School for Gifted Children

10-274, Italy, Practical Experience

Author: *Viviana Castelli, stepnet@giftedness.it*

Co-Authors:

Due to their divergent cognitive style and lack of motivation, gifted students may suffer underachievement and develop behavioral problems in the school environment.

This problem is of particular concern in the Italian context, where the giftedness issue is neglected by the legislation and teachers are not trained to face the challenges presented by their gifted students.

Stepnet presents an innovative project, StepGate, designed to promote the development of gifted education strategies. A digital platform has been developed for learner/teacher networking. Students may share their opinions with age and cognitive peers. Teachers may collaborate with each other for developing innovative educational practices.

StepGate objectives are 1) sustaining talents 2) favoring a tight interaction between teacher/learner 3) producing education projects and materials with the direct involvement of students and teachers of different geographical areas 4) constituting a national network of schools and open classrooms.

StepGate structure includes 1) a distance learning platform allowing open-lessons and teaching methodologies sharing 2) development of student on-line education projects with the introduction of IMBs and tablets in pilot classrooms 3) a cloud platform for students/teachers 4) teacher training on giftedness.

Through StepGate inclusive model it is possible to perform virtual lessons addressed to level groups of classmates with the aim to enhance the student competences.

Stepcare: Network of Gifted Professionals

2-276, Italy, Practical Experience

Author: *Antonella Torriani, stepnet@giftedness.it*

Co-Authors: *Simona Spinelli*

In the present Italian context, where the giftedness issue is almost unknown, psychologists, neuro-psychiatrists, pediatricians, are often unread to respond to the family demands and to the gifted children needs. For this reason it is important to create a national network of different professional profiles to allow the integration of objectives, information, experiences and ideas on giftedness issues.

Stepnet elaborated an innovative project, Step-care, aimed to respond to the growing needs of families of high ability children.

Stepcare main objectives are 1) creating a network of professionals in giftedness 2) favoring the sharing and integration of professional experiences 3) creating a quality system for data management 4) sustaining the gifted children and their families since the first contact by committing them to the network.

Stepcare structure includes 1) a sharing virtual platform of registry information 2) user data collection and management 3) a multilevel scheduling agenda 4) a set of common forms and data sheets 5) a fast messaging service for professionals 6) a common multilevel network CRM (customer relationship management) 7) a distance learning platform for gifted education of professionals of the network. Stepcare allows the reorganization of the intervention model with the aim to optimize the scheduling, the human resources and competences. Stepcare keyword is "network", for a full assistance of gifted children and their families.

The CanSAT as a High Technology Resource for Gifted Children

10-293, Mexico, Practical Experience

Author: *Dafne Almazan, almazananaya@prodigy.net.mx*

Co-Authors: *Delanie Almazan Mayda Arceo*

It is well known that gifted and talented children have a faster learning and adaptation capacity for science and technology, but how far can a gifted child use complex technology devices to materialize his own ideas?

Nine children from 8-15 worked with the CanSat which is a simulation of a real space satellite adapted for scholar purposes, within the volume and shape of a regular soft drink can. The challenge for the students was to fit sensors and communications systems into a small device designed by themselves through professional guidance. After released from a rocket the CanSat had to perform a certain mission (measuring of altitude, temperature and atmospheric pressure) and landed safely on the ground. They measured the effect of a parachute over the CanSat while falling.

This new project designed at the Talent Attention Center (CEDAT) provided gifted children a complete new academic experience where they are able to control mechatronic devices with programming methods (knowledge they already have).

It is remarkable that the main objective is not to check some geophysical theory about air and atmospheric pressure, although interesting by itself, the fact that children could get access to this technology was the main goal.

Every student involved in this project got the basics of C programming, Arduino programming, and how to use an analog sensor and a digital sensor. This was an advance in a new model of advanced teaching for gifted children within engineering fields.

Tech Journey: Success in the Heartland

10-300, USA, Practical Experience

Author: *Debra Mishak, debramishak@gmail.com*

Co-Authors: *Paula Christensen*

Tech Journey is a summer camp and after-school workshop centered program offered by volunteer technology specialists, program managers and engineers serving various corporate and nonprofit interests in Des Moines, Iowa, USA (popu-



lation 220,000) to select urban student in the Des Moines Public Schools (enrollment 34,000) who have little or no access to technology in their home environments. This summer camp and after-school workshop based mentoring program targeting students in Years 8 to 12 is now in its third year providing hardware, software, ongoing training and technical support to select poor, minority, immigrant and refugee students who are significantly underrepresented in all areas of computer science and engineering in the USA. Tech Journey's five year vision provides Year 11 and Year 12 students with part-time employment, internship opportunities in Tech Journey's participating companies, and scholarships for post-secondary education in technology and engineering. Our ten year strategic plan focuses upon staying connected with Tech Journey graduates throughout their postsecondary education and recruiting them to join companies in the Des Moines Metro area upon completion of their two or four year degrees. This presentation will be a discussion of the criteria-based matrix used to identify students, current workshop and camp curricula, cohort achievement data, and plans for career and college/university curricula during the 2015-2016 school year.

The Establishment of Teachers' Partnership for Collaborative Teaching Mechanism to Improve the Quality of Practical Training in Teachers' Education Courses

10-386, Taiwan, ROC, Practical Experience

Author: Shu-Min Wu, shumin@utapei.edu.tw

Co-Authors:

The purpose of this program is to establish elementary school teachers' partnership for collaborative teaching mechanism to improve the practice of Teachers' Education courses. After the students of Education Departments completed the first stage of the pre-vocational education, they could enter the stage of pre-vocational-importing for practical training. This might cause some gaps and inconsistency between the universities of education and the institutions for teaching practicum. Therefore, the establishment of collaborative teaching of Teachers' Education courses, which Department of Special Education of University of Taipei introduced partner teachers in gifted education with superior teaching experience to join in, is aimed to link school teachers and gifted education teachers to nurture the future teachers together. This program was carried out in the elective courses "Gifted Education on Language Arts". The implementation strategies were as follows:

1. Form "Sophisticated Team of Collaborative Teaching" and hold meetings.
 2. Encourage partner schools in class for dual-teacher collaborative teaching and provide tutorials for teachers-to-be.
 3. Hold activities of professional growth for collaborative teaching.
 4. Conduct presentation of collaborative teaching achievements at the end of the semester.
 5. Conduct satisfaction survey to learn the effectiveness of the implementation.
- This approach could improve the quality of practical Teachers' Education courses.

Education of the Gifted in Slovakia

10-418, Slovakia, Practical Experience

Author: Jolana Laznibatova, laznibatova@centrum.sk

Co-Authors:

The education of gifted children and youth in Slovakia has been available since 1993. This is when the project about alternative care for gifted children was approved and the first grade with special focus on gifted education was opened. It includes comprehensive education for pupils from 5 - 18 years old, i.e. from the first grade to the last grade of secondary school. This model was created in response to the previously applicable system in schools which was based on "unified methods" for everyone. For the last Symposia years we have been offering a new philosophy: "as much as one needs" We have verified the possibility of gifted education through differentiated approach while preparing supplementary enrichment material for classrooms with broader and deeper topics. At the same time we were changing the work method with gifted which was put in the form of separate educational program. The final program was introduced to the public in 2007 after the longest experimental verification of the forms and methods of working with talented pupils in the intellectual field. Based on these Symposia years of intensive work with smart gifted students, an autonomous educational program was created called - Aprogen. Today, the program educates more than 3,000 pupils, aiming to develop their talents. This system works based on our expertise and characteristics of gifted children. It takes into account special development issues and focuses on cognitive parts as well as the personality of students.

Contextual Thinking in Gifted Children Education

17-458, Czech Republic, Practical Experience

Author: Eva Vondrakova, vondrakova@gmail.com

Co-Authors:

STaN started its work in 1988/89 school year as the Czechoslovak ECHA branch. At that time many people believed that it was neither needed nor moral to care for the gifted. 26 years later situation changed for the better. Despite it many problems persist. Education the gifted is not included in the priorities of the Strategy of Education by the 2020 year in the Czech Rep. There are two main streams concerning the GC education in our country represented by: 1) specialists and parents experienced in upbringing the gifted, unsatisfied and involved into resolving the situation. 2) strong group of people influential in education and politics who believe that equal access to education for all means no support for the gifted. It is a labor of



Sisyphus to change this unfavorable attitude and its consequences. STaN consists of dedicated specialists' psychologists, teachers and parents of the gifted. They organize projects (CTY CE), realize high quality practice (ZS Ctyrlistek) and research (Hradec Královské Univ), teach teachers (Univ. Ostrava), publish. They cooperate both nationally and internationally. The 19. WCGTC conference 2011 Prague was organized in cooperation with STaN. We insist on professionalism, ethics, quality, timeliness, usefulness for practice. Workdays, conferences and Club of Parents bring information to interested participants. Contextual thinking is necessary for a full understanding of the gifted. To realize what is known in GC educ. we have to arouse interest of decision-makers.

The Efficacy of a Training Program for Belgian Teachers and Parents on Giftedness and Gifted Education

17-465, Belgium, Practical Experience

Author: *Tessa Kieboom, carla.vreys@uhasselt.be*

Co-Authors:

In the Bachelor's degree program for school teachers in Belgium, little to no attention is paid to the educational needs of gifted learners. Due to a lack of knowledge among school staff, effective education to gifted children is a pressing problem in Belgian schools.

Our organization has > 15 years of experience in helping schools and parents to deal with the educational needs of gifted children. Today, we have bundled our experience in a specialized training program, aimed at installing an effective learning environment for gifted children under the age of 12. Over the course of four years, school staff and parents are trained in (i) the detection of gifted learners (and underachievers), (ii) the specific needs and problems of these children, (iii) the educational practices that can be applied, and (iv) the way in which a sustainable system can be implemented in a school.

To demonstrate the effectiveness of this training program, we currently perform a large-scale research project, including 30 schools, 650 school staff members and more than 200 gifted children and their parents. Data are collected through interviews, surveys with pre- and post-intervention measurements, and within classroom observations of advanced learners. An untrained control group is also included.

Pre-intervention results show that aid to gifted children mostly depends on the goodwill of individual teachers, but the necessary knowledge and a well-defined school policy are missing in most of the schools. Information on the training program and the first research results will be presented at the conference.

Paper and Pencil versus Internet Based Contests: Pros and Cons

10-490, Estonia, Research

Author: *Viire Sepp, viire@ut.ee*

Co-Authors:

Academic contests, especially sequentially ordered contests, called Olympiads in different countries, have positive impact on the development of highly gifted children (Campbell et al, 2000, Rizza & Reis, 2001; Wagner & Neber, 2007; Sepp, 2008). Nowadays lots of academic competitions are carried out in Internet-based settings. The aim of presented paper is to analyze benefits and disadvantages of Internet-based Olympiads in comparison with "traditional" paper-and-pencil contests. Paper is based on study of Estonian National Olympiads, among them are presented virtual (Internet-based), as well traditional get-together events which are conceptualized as "interaction ritual" in accordance with Collins theory (Sepp, 2008). The conclusions of feedback from the participants having experiences both in Internet-based and "traditional" Olympiads (n=334) are presented. Results have shown, that aside from the many benefits (e.g. time saving), Internet-competitions also evoke a lot of disadvantages in comparison with traditional (e.g. the lack of interaction ritual outcomes, lack of cognitive higher-level tasks etc). On the basis of these results implications for improving the quality of competitions will be presented.



Teaching with Values in Mind: Raffles Institution (Singapore) Research Education Concept Map

11-20, Singapore, Practical Experience

Author: Joycele Lim, joycelene.lim@ri.edu.sg

Co-Authors:

The presentation will explore Raffles Institution's (RI) Research Education (RE) programme specifically as a vehicle for instilling values. Our focus will be on the developmental process RI students go through in order to constantly check their readiness level for effective group work. We will elaborate on 5 developmental stages designed after William E. Cross' human development theory and how it aids our students to correctly gauge the quality of their participation in a group task. From varied interventions adopted for students with different learning needs, we will provide data to show how the theory facilitates the development of 21st Century Competency Skills, such as oral communication, collaboration, conflict resolution, and interpersonal skills, which are aligned to the Ministry of Education Singapore's 21st Century Competency Skills Framework launched in 2009. At the end of the presentation, participants will learn: 1. How to create a safe space for individual students to identify their own values and actions and where these values and actions place them on a developmental scale designed to help them acquire capabilities- values, skills and knowledge - for improved performance within a group; 2. Mentoring approaches useful in a general classroom setting for instilling skills and values and where appropriate, adapted as intervention strategies for at-risk students; 3. Creative ways to adapt W. E. Cross' human development theory for the purposes of helping students to explore their identities, celebrate differences and to develop the capacities to effect a change in others' lives.

The Promotion on Gifted Students' Moral Education through Sports

11-348, China, Practical Experience

Author: Dongliang Xu, xie_maria@hotmail.com

Co-Authors:

Sports activities not only foster the students' sports expertise, but foster correct concepts of moral values. Sports play an irreplaceable role in enhancing the emotional, and establishing faith, develop normative behavior, cultivate good habits and improve personal qualities. Moral education through sports activities plays an important part of school moral education. The infiltration of moral education in physical teaching process implements the policy of all-round development of students, which helps physical education really become the main channel to improve the students' psychological health. Through the wheelbarrow riding, long distance hiking, mountaineering and other practical teaching in sports activities and with targeted the moral intervention, the author of the article promotes student's psychologically healthy and the moral level by the measurements of using the questionnaire survey, data analysis and students' self-perception, experience.

Teaching Social Advocacy in Conventional School Setting Using Non-Authentic Platforms: A Study of a Joint Social Study - Philosophy, English Language Performance Task on Advocacy

11-450, Singapore, Practical Experience

Author: Bryden Chew, bryden.chew@rgs.edu.sg

Co-Authors:

This study evaluates the efficacy of school-based instruction and assessment in enabling gifted learners to advocate responsibly, in the absence of authentic platforms.

The literature review seeks to establish on terms of reference pertaining to advocacy and giftedness. This starts from the basis of Joseph Renzulli's definition of giftedness - the interaction among above-average general and/or specific abilities, high levels of task commitment, and high levels of creativity; and applying them to any potentially valuable area of human performance. The formulation of evaluation criteria for use in the study would include:

1) appropriateness of approaches; 2) teacher competencies and dispositions; 3) efficacy of school based (non-authentic) platforms 4) classroom observations of teachers; 5) observation of students performance; and 6) interviews of teachers and students

The findings of the study establish the enabling conditions for effectiveness of the school-based (non-authentic) platforms in enabling advocacy for the Gifted. It examines how such platforms cater to Self-Directedness, defined by the ownership of learning, management of own learning, and extension of learning. It also examines how inter-disciplinarity can be fostered. Inter-disciplinarity here is defined by a task, which connects different disciplinary approaches by common concepts and skills, where knowledge is constructed, and where the teacher plays the role of a facilitator.



Parenting Globally for Success

Designing Collaborative International Exchange Programs in Gifted Education: The Semester Teacher Education Abroad Program (STEAP)

12-10, USA/Netherlands, Practical experience

Author: *Gillian Eriksson, Gillian.Eriksson@ucf.edu*

Co-Authors: *Lianne Hoogeveen*

Engaging teacher candidates in international study abroad programs opens a world of experience, generates a global perspective and fosters intercultural competencies. As perspectives, definitions and practices in gifted education vary widely internationally, a semester abroad allows learners to understand diverse systems and approaches, while providing more insights into the needs of special populations and immigrant gifted students in their own classrooms. The STEAP Program is a collaborative exchange between students from the University of Central Florida in Orlando with Radboud University in Nijmegen, Netherlands. The Center for the Study of Giftedness at Radboud University provides the European Council for Children with High Abilities (ECHA) Certification in Gifted Education for Europe, and UCF provides both gifted certification and a Masters in Teacher Leadership Gifted Track. Students complete orientation before departure, then overseas campus learning and service learning through a continuum of services in a local school district/region that ranges from infusion in regular schools through to special schools for the gifted, working towards a thesis (Honors in the Major) or Masters Thesis on a topic of their choice. They work closely with faculty from both Universities, completing online learning. Evaluation includes ongoing assessment, product assessment and surveys. This presentation will present the rationale, design, range of options and evaluation used in the STEAP Program.

Using the Global Learning Curriculum Model for Online Collaboration

12-93, USA, Practical experience

Author: *Marjorie Landwehr-Brown, landwehrbrown@aol.com*

Co-Authors: *Kay Gibson*

The Global Learning Curriculum Model (GL-CM), based on intercultural collaborations made available through technology, provides gifted children with challenging and complex learning opportunities/experiences. The GL-CM guides educators to help gifted students develop real-world knowledge, skills and attitudes necessary to interact as competent, successful global citizens. This session provides examples of global learning curriculum that incorporate the skills represented in Partnership for 21st Century Skills. The GL-CM website with teacher curriculum designing tools, and additional resources is highlighted.

The GL-CM provides opportunity to challenge gifted students through real-world application of content, and to develop their 21st century knowledge, skills and attitudes. The interdisciplinary GL-CM model emphasizes the use of intercultural student teams who collaborate on real world projects through communication technologies.

As we have implemented the GL-CM during the past eight years, it has proved to be a flexible approach that adds depth, rigor, and complexity to all aspects of the curriculum. Four components of the model guide educator's curriculum decision-making: Frameworks, Design Considerations, Attributes & Processes, and Assessment.

This session examines a promising systemic approach to the integration of 21st century skills into curriculum, instruction, and assessment for gifted learners. The Global Learning Curriculum Model (GL-CM) provides a K-20 interdisciplinary, collaborative global focus that adds depth and complexity to gifted curriculum.

Using PISA Results to Diplomatically Partner Globally in Advocacy for Gifted and Talented Children

12-109, USA, Research

Author: *Kathleen Stone, kstonegift@aol.com*

Co-Authors:

Gifted & Talented Education frequently encounters equity concerns due to cultural dynamics, yet policymakers continue to value the power of high achievement in PISA international test results. This study identifies patterns in transnational variance across PISA results in Math, Reading and Science. PISA sub-group data include 90th/95th percentiles, proficiency levels 5/6, gender, and motivation, drive and self-efficacy. Variances are analyzed across a transnational sample from Northern Europe, Scandinavia, and top performing East Asian countries. PISA results indicate gender inequalities in high performance favoring boys in math, girls in reading, and more balanced achievement in Science. OECD reports a distinct concern for variances in percentiles and proficiency levels for top performers. Finland consistently achieves high PISA scores. The Netherlands and Switzerland are two European countries among the top ten East Asia-dominated rankings in mathematics. Evidence of PISA inequalities can be used as a persuasive tool to transform knowledge from research into practice. The transnational lens of PISA can influence policymakers to prioritize equity and high achievement in building advanced curriculum and pedagogy within a landscape of overall improvement in a country's PISA profile. Transnational PISA data easily bridges persuasive global partnering in diplomatic networking and collaboration to strengthen policymaking for top performing students. The presentation recommends PISA as a potential contextual framework encouraging valuable joint research within a Global Village that honors cultural diplomacy, while using PISA evidence to advocate for the education of gifted and talented children across the international community.



Enabling Global Science Research Partnership in Schools

12-117, Singapore, Research

Author: Hui Peng Chia, harhp@hci.edu.sg

Co-Authors:

To facilitate a science research collaboration between a school in Singapore and the USA, a virtual learning community (VLC) was set up on Wikispaces to enable communication and resource sharing among students across the continents. The 10-month collaboration culminated in the construction of collective wisdom through collaborative knowledge building among the students. Students of the two schools co-presented their research findings at an annual projects competition event in the Singapore school and wrote joint research papers.

Qualitative research methods were employed, with case study as the research strategy. Research techniques included semi-structured interviews and document study. Data collected consisted of transcripts of focus group interviews, and documentary data comprising students' reflective journals and their online postings on the VLC platform (Wikispaces). Data analysis was carried out using the Miles and Huberman inductive approach to the analysis of qualitative data.

Findings elaborated on using the VLC platform, and the impacts and problems of its use. The platform served as a resource repository and discussion channel which enabled the exchange of ideas and sharing of information among the students. Its use facilitated the collaboration between the students of the Singapore and USA schools which enhanced the quality of their projects. The intellectual exchanges on the platform enabled the students to reap cognitive benefits and forged friendships that may lead to future partnerships beyond the collaboration programme.

Implications for practice comprise recommendations for the features of a VLC platform to facilitate student global partnership of the nature presented in this paper.

Imagination Goes International

3-264, USA, Practical Experience

Author: Kerstin Rao, kerstin.rao@gmail.com

Co-Authors:

What unites 30 groups of nearly 600 children from the USA, South Africa, Australia, Canada, the UK, Columbia, Bosnia and Herzegovina? The Imagination Foundation's pilot Chapters program, which gathers children to work with cardboard, Make Do connectors, Little Bits electronics, Rube Goldberg machines, storytelling, science concepts, social outreach, and more.

In an era of increasing standardization, the Imagination Chapters create time and space for children to explore outside the boundaries.

In my presentation, I will share what our group of children, ages 10 to 15, experienced in Westport, Connecticut through stories, photographs and videos. The Imagination Foundation was created after the video 'Caine's Arcade' went viral in 2012, using the donated money in order to encourage everyday children to explore their own imaginations. Chapter leaders meet via Google Hangout, share meeting notes with each 17, and cross-pollinate ideas for activities to do with our children. We are looking toward expanding even further internationally next year.

Participants will come away with an understanding of how Imagination Chapters function, gain ideas to use with children either in school or in local after-school programs, and can contribute their own insights to help inspire the future development of the program.

World Language Teacher Perceptions toward High Ability Students and Differentiated Instruction in Advanced Placement Classrooms

12-467, USA, Research

Author: Bronwyn MacFarlane, bdmacfarlane@ualr.edu

Co-Authors:

Limited research has been conducted on existing curricular interventions available for use with high-ability pre-school age children (VanTassel-Baska, Johnson, & Avery, 2002; Hughes & McGee, 2011). While the HIPPY curriculum is used widely across the world, there is not any research on the impact or effectiveness of the HIPPY curriculum with high ability children. Relatedly, there has not been a rigorous curriculum supplement to the standard HIPPY curriculum to meet the developmental needs of challenge for high ability children.

In a state-wide early childhood study of high ability children from low-income families, parents of high ability, four year old children participated in a project to understand parental teaching practices in poverty and increase school readiness among high ability children in poverty. Preliminary data collected determined the need for additional home-based curriculum materials, differentiated to the accelerated needs of the ready learner. These data were used to design differentiated home-based early childhood curriculum materials for families in poverty.

Using a pre-test and post-test experimental design, the results of this study document the effects of a rigorous curriculum intervention focused on improving the critical and creative thinking among high ability four-year old children in poverty. Data reveal important understandings about the relationship between high ability children in poverty and their parents and the impact on parenting behaviors with targeted curriculum resources. Participant response to the home-based curricular intervention and implications regarding curriculum design for early childhood and home based instruction will be shared and discussed.



Regional Networks Supporting Giftedness in the Czech Republic

12-489, Czech Republic, Practical Experience

Author: Stanislav Zelenda, zelendast@gmail.com

Co-Authors:

Regional Networks Supporting Giftedness in the Czech Republic

By the support of giftedness we understand looking for gifted children, pupils and students, offering them opportunities to reveal giftedness and support them in development and fulfilment. Only extracurricular activities were used recently for support of giftedness. The ways in formal education are very limited. The regional network supporting giftedness (RNSP) gives a platform for sharing capacities, experience and a good will to come across practical limits in gifted education. The partners, i.e. pre-schools, schools, universities, non-profit organizations, leisure time centres, companies, research institutes, regional and local bodies, parents, individuals etc., can meet and coordinate their effort and activities "horizontally" on the regional level. The RNSP networks are "vertically" interweaved with national groups of professional guarantors: G&T psychologists, G&T pedagogues, leisure time pedagogues, school inspectors, teacher educators. The structure is coordinated by the Working groups of Ministry of Education. It collaborates with the Inter-resort group of national institutions, e. g. Ministries, National Associations, Czech Academy of Science etc.

The main goal is to inform, share and coordinate with respect to the development of an individual (gifted) child who goes through the educational system to his/her practice. Additional goals are to support of giftedness as natural components in formal e....



Social Emotional Needs of the Gifted, Creative, and Talented

A Journey into the Psyche of Gifted Girls and Its Significance for Education

13-49, Israel, Practical Experience

Author: *Rachel Zorman, rachelz@szold.org.il*

Co-Authors:

In this presentation, we will explore several syndromes which prevent gifted girls from fulfilling their potential. These syndromes include: •The Cinderella syndrome •The impostor syndrome •The perfectionism syndrome •The no-risk game syndrome. These syndromes are most common during adolescence, when girls develop their identity and often deal with conflicting messages from their social environment. We will describe how these syndromes develop. We will discuss the implications of these syndromes for educating gifted girls. Finally, we will present strategies for coping with them, while creating opportunities for gifted girls to realize their potential.

Nurturing Intensity: Exploring the Needs of Children with Over-Excitabilities

13-56, USA, Research

Author: *Antonia Szymanski, toniszym@iun.edu*

Co-Authors:

Dabrowski (1968) and Piechowski (2006) along with 17s have identified over-excitabilities/intensities in gifted children; however, little research has been conducted to explore how intense gifted children can be supported to channel their over-excitabilities (OE) for success. The purpose of this study is to obtain a detailed understanding of important supports that successful intense adults received that aided their development. This qualitative phenomenological study of five gifted intense adults is comprised of over 15 hours of interviews as well as detailed background survey information. Several important themes emerged from the data. Although the participants had varied over-excitabilities, they all experienced feelings of 17ness at a very young age. All of the participants reported being aware of their intensities in early adolescence but not understanding or being able to control the OE led to suspicions that something was wrong with them. The participants who received support regarding their OE in early adolescence were much more successful in harnessing and cultivating their intensity. Understanding the needs and the timing for support of gifted students with OE allows researchers, teachers, and parents to provide the necessary interventions to assist individual development. This study shows how we can help children to not only control the OE but to cultivate them to aid success and protect their psychosocial development. It is not enough to simply identify OE in children and teach them how to manage or mask this part of their identities. We must learn from successful intense gifted adults how to nurture this aspect.

Emotional Literacy as a Model Class for Gifted Students in Gifted Center, Turkey

13-70, Turkey, Practical Experience

Author: *Naif Kara,, naifkara80@gmail.com*

Co-Authors:

The gifted students are nurtured in Turkey through the gifted centers called Bilim ve Sanat Merkezi. However, some expectations and exam-centered education system cause gifted students to be overlooked in terms of social emotional needs by school, family and social environment. There aren't any classes of 'Emotional Literacy' for gifted students in Turkey. Moreover, formal educational system in the country for children who have the same age and intellectual quotient unfortunately isn't sufficient to be able to constitute privileged environment for those who are gifted and our gifted children label as '17 children' not having the opportunity to meet their special needs. It is suggested by most of experts that intelligence quotient isn't enough itself in special education. Success in professional sphere after education depends on emotional quotient rather than intellectual quotient. The inexperience in gifted education of the country and inadequate practice of 'Emotional Literacy' class indicate that our country should benefit from experienced countries in the fields. It is aimed at improving gifted students' emotional quotient conducting the technique of focus group in the gifted center called Izmit Bilim ve Sanat Merkezi in Turkey; providing them to be successful through affective domain; teaching them 'Emotional Literacy' as a model class for Turkey; thus gaining sustainability in gifted education. Key Words: Emotional literacy, emotional quotient, gifted student

I Have a Little Shadow: Attachment Behaviours in Very Young Gifted Children Transitioning to a New Class

13-85, Australia, Research

Author: *Anne Grant, anne.grant.education@gmail.com*

Co-Authors:

Links between attachment and cognitive competence, recognised as important in infancy, continue to be relevant as children reach school age. Some reports discuss the social and emotional development of very young gifted children, but no discussion was found about how attachment may influence a positive transition to a new learning environment. The relevance of attachment behaviours emerged from a qualitative case study exploring influences on young gifted children entering a new learning environment. The goal was to identify possible impacts on the success of the transition experience for these children. Seven young gifted children and their teachers participated in the yearlong study, providing rich data about everyday adjustment by the children. A key finding was attachment behaviours were identified as influential in the establishment of a secure relationship between teacher and gifted child. Where this was achieved satisfactorily there was corresponding satisfactory level of engagement in the learning program, but this was not the case for all the children. The conclusion drawn was that intellectual progress at school for these young gifted children was inextricably linked with the establishment of a secure feeling of attachment.



Implications of this finding are the need for teachers to know the importance of attachment for young gifted children transitioning into a new educational setting, how this might manifest in observable behaviours, and subsequently influence engagement in the learning program.

Gifted and Misunderstood: Maternal Depression and the M17-Child Relationship

13-103, Australia, Research

Author: *Mimi Wellisch, mimiwellisch@bigpond.com*

Co-Authors:

Some researchers have claimed that gifted children are well adjusted while 17s cite findings demonstrating socio-emotional problems. Until recently, these problems have been thought to arise from gifted children's precocious and uneven development. Little research is available on the association between giftedness and attachment, however securely attached children in the general population are well adjusted, whereas insecurely attached children often have ongoing problems that include learning disabilities, and psychological and behavioural problems. This paper presents a qualitative study involving 11 Australian m17s of 'gifted' children. The m17s had participated in a previous study with eighty 7-10 year old children and their parents from Australia and New Zealand. The data already collected included children's attachment style, socio-emotional adjustment, and learning disabilities in both non-gifted children (with FSIQ <80) and gifted children (children who have at least one subtest score or full scale score of IQ<120). The aim of the qualitative study presented here was to investigate how gifted children are parented, and whether and how maternal problems such as depression may affect the developing gifted child. Open-ended interview questions aimed to capture the experience of parenting a gifted child. The study shows that gifted children were more likely to internalise and were more likely to be misunderstood by m17s, peers, and schools if their m17s had been depressed. Positive preventative actions taken by m17s will also be discussed.

Developing Social Skills: A Program for Young Talent

13-180, Brazil, Practical Experience

Author: *Jane Farias Chagas-Ferreira, janeffa@gmail.com*

Co-Authors: *Daniela Vilarinho-Rezende, Renata Muniz Prado-Bastos*

Several studies have highlighted the importance of actions and programs addressed to the social and emotional needs of the gifted. Characteristics as perfectionism, reasoning complexity, precocity, tendency to isolation, and emotional intensity can lead to difficulties in social interaction. The development of social skills is identified as a protective factor of psychological health and adjustment. This study aims to present the actions, experiences, and results related to the Development of Social Skills Program for Talented Youth. The program was structured in 13 meetings in which a set of selected social skills related to communication, emotional expressiveness, assertiveness, empathy, interpersonal conflict resolution, friendship and academic competence was discussed and developed. During 2013 and 2014, four mediators, five monitors, 43 undergraduate, and 28 gifted students participated in the project. Questionnaires, reports, and the Social Skills Inventory (HIS) were used as evaluation instruments and participant's and mediator/monitor's manual were utilized as instructional tools. The results indicated improvement in communicative and relational repertoires, self-knowledge, decision-making, and coping with interpersonal conflicts. Mediators and monitors also reported the expansion of academic and professional skills. These outcomes indicate the effectiveness of the program and the importance of promoting more actions designed to develop social skills in young talent.

Are the gifted children included in the kindergarten/classroom groups (in Denmark)?

13-189, Denmark, Research

Author: *Pia Ryding, pr@piaryding.dk*

Co-Authors:

The research question - are highly gifted children included in the kindergarten/classroom (in Denmark) - is based on practice examples of gifted children who are not thriving in day care.

I make subsequent comparative analysis where I theoretically answer the problem formulation. I compare the descriptions of who the vulnerable children are with descriptions of the gifted children's behavioral traits. Peter Farrells (Farrell, Peter et al., 2002) definition of inclusion is the conceptual framework for the study.

I conclude that it is not clear whether gifted children are included in the kindergarten/classroom. There should be some extra attention as not all gifted children's behavioral traits are a part of the attention points and an attention to the specific context. A 4-year-old child who can read will certainly function relatively better in a group where everyone can read over a 4-year-old child in a group where no one can read.

The presentation has been held at Gifted Childrens summercamp (a danish parents organization) and at a student conference at Aarhus university.



Affectivity During the Teaching of Gifted Students: Contribution from Piaget

13-209, Brazil, Research

Author: *Fernanda Hellen Piske, nandahellen@hotmail.com*

Co-Authors: *Tania Stoltz*

This research aimed to investigate the affective development of gifted students in the educational environment. Many studies (SILVERMAN, 1993; SCHULER, 2000; ALENCAR, 2007; and 17s) emphasize the precarious formation of teachers to work with inclusion of gifted students, this can be one of the reasons of lack of affective adjustment and exclusion at school. In consonance with this research is the theory of Piaget (1954) that emphasizes the importance of affective development related to the functioning of intelligence. The method of this research was based on studies of authors of giftedness area and studies of Piaget. The conclusion showed that the affective aspect has a constant influence in the human development and in case of gifted teenagers it is important to count to the supply of teachers specialized in giftedness that know how to deal with alterity and the differences at school. According to Piaget (2000) the right to education is the right that each individual has to develop himself and change his own reality to effective and useful realizations. The educational attendance is a right of gifted students and should be given for them continuously, so that these teenagers can overcome their affective, social and cognitive needs. Keywords: Affectivity; Learning; Gifted students

The Prediction Study of Gifted Students' Emotional Style, Self-Compassion, and Empathy towards Mental Health in Junior High School

13-217, Taiwan, ROC, Research

Author: *Min-Ying Tsay, tminying@gmail.com*

Co-Authors:

The main purpose of the study were to investigate the relationships among emotional style, self-compassion, empathy and mental health of gifted students in junior high school, and to explore the emotional style, self-compassion, and empathy of gifted students towards mental health. The subjects were 712 from the junior high school in Symposia cities of Taiwan. The main research tool is the emotional style scale, the self-compassion scale the empathy scale, and the mental health scale. The data collected was analyzed by SPSS 18.0 with descriptive statistical analysis, Pearson product-moment correlation coefficient, and multiple stepwise regression procedure.

Social Coping Scale: Turkish Validity and Reliability

13-237, Turkey, Research

Author: *Ayca Konik, akoksal@istanbul.edu.tr*

Co-Authors:

The aim of the present study is to test the factor structure, convergent validity, and reliability of the Social Coping Scale (Swiatek, 1995) on a Turkish gifted adolescent sample. In the original study participants were junior high school students, in this study it is aimed to expand the school level range from middle school to high school. Participants are 240 gifted adolescents who were randomly selected from different science and art centers for gifted students and from one high school in Istanbul. Many scholars indicated that gifted students can experience difficulties arising from their asynchronous development, their special needs, and their adjustment in measuring up to the high expectations of their parents, schools, and themselves, so they have to cope with these difficulties by using some strategies. The aim of this study is to test the psychometric properties of Social Coping Scale (SCQ) for Turkish gifted adolescents and provide a useful device to assess the strategies which are used for coping by using self-reported instrument. SCQ has 35 items which assesses students' social coping strategies in response to being gifted. The Turkish version was developed on the basis of the original version by Swiatek, which assesses five social coping strategies. Exploratory and confirmatory factor analysis are conducted for to test the validity and reliability of the Turkish version of SCQ. And the results supported the reliability and construct validity of the measure.



Under Pressure: The Effects of Academic Pressure on Gifted Students in High-Stakes Assessment Contexts

13-253, Australia, Research

Author: *Benjamin North, ben.north@det.nsw.edu.au*

Co-Authors: *Sarina Wilson, Miraca Gross*

What effects can major examinations have on gifted students? High-stakes assessment programs for university entry are a prevalent feature of certain educational jurisdictions, including all states of Australia. Concerns over the effects of assessment, such as academic pressure, stress, anxiety, and altered learning orientations, have been made clear anecdotally and in the media, but less so in research. This study aims to explore the responses of students to academic pressure, with a comparison between gifted and non-gifted students. It is proposed that learning approaches (motivation, goals) and affective states (stress, anxiety) are responses by students to academic pressure, allowing for student academic self-efficacy. This study employed a concurrent mixed-methods design consisting of a main phase questionnaire administered to 722 Australian senior high school students. This presentation will focus on the quantitative results that demonstrate the high levels of pressure and stress in this student cohort. The strong associations between pressure, affective distress, and learning orientations will be explored, along with the different patterns of response between gifted and non-gifted students. This research will have implications for both schools and further research. It shows the need for schools and assessment systems to provide supportive learning environments to identify and respond to pressure symptoms for gifted students in high-stakes assessment contexts.

Listening to the Gifted

13-302, USA, Research

Author: *Debra Mishak, debramishak@gmail.com*

Co-Authors: *Paula Christensen*

Listening To The Gifted

Teachers of the gifted often find it challenging to understand and help their students deal successfully with the social and emotional issues associated with their giftedness, and how those issues affect their unique learning needs. What specific skills are necessary for listening with empathy and understanding? How does one listen for what the gifted mean rather than to what they say?

In this presentation, two university professors of gifted education, teacher education and supervision will introduce the audience to research regarding the psycho-social and emotional needs of the gifted, and present a synopsis of a decade of qualitative data on pre-service and in-service teachers' perceived concerns when dealing with the social and emotional needs of the gifted and talented. Themes vital to successful teacher preparedness in the general, gifted, and special education classrooms will be shared, along with research-based counselling techniques and specific teacher classroom and one-on-one interventions proven successful in helping the highly able and the gifted understand their learning needs, successfully manage the emotional burdens that sometimes accompany giftedness, achieve at a level commensurate with their abilities, and find meaning and purpose in their lives.

EQ and Resilience

13-314, Australia/Singapore, Practical Experience

Author: *Eldon Pascoe, Eldon.pascoe@britishcouncil.org.sg*

Co-Authors:

Can EQ and resilience be learnt? If so how can we improve in each of these areas? Emotional Intelligence (EQ) means being smarter with our feelings. It's about putting the rational and emotional together so we can move forward. When we learn how to use them, emotions help us make more formed decisions, connect with 17s and find and follow purpose. This session will analyse:

- * ways in which we can develop better attributes to better connect in education, learning and life
- * the possibility of producing learners with a greater sense of resilience
- * ways to identify and boost learner capabilities

Social Coping among Gifted Irish Secondary Students

13-343, USA, Research

Author: *Colm O'Reilly, colm.oreilly@dcu.ie*

Co-Authors:

In response to the stigma of giftedness, students engage in coping behaviors that may be unproductive. To explore this phenomenon, 326 Irish secondary students in a summer enrichment programme were surveyed using the Social Coping Questionnaire (Swiatek, 2001) and the Self-Description Questionnaire-I (Marsh, 1992). On average, Irish gifted students engaged in mostly positive social coping, such as participating in many activities and helping 17s. They also tended to dismiss the significance of being popular. As in previous studies, girls were more likely to deny their giftedness than boys. Self-concept scores were low among students classified as High Deniers and high among High Active students. A positive self-concept is critical to achieving one's potential. Through a greater understanding of the relationship between students' social coping behaviors and self-concept, teachers, counselors, and parents can support students' psychological development.



The Role of Spiritual Intelligence among High School Students

13-438, Hungary, Research

Author: *Csilla Fuszek, csilla.fuszek@talentcentrebudapest.eu*

Co-Authors:

Spiritual intelligence is especially important for the development of social responsibility and purposeful life of exceptional cognitive talents. Spiritual talent of exceptional talents is important all the more, since they often play a decisive role in societies, hence their vision of the world and their virtues may be crucial for the future of mankind.

Personal interviews together with SI tests were conducted among 120 exceptionally talented Hungarian high school students (age 16-19) from religious and non-religious (control) groups. We were interested in looking at the role of spiritual desire in their motivation, goals and choices in their education.

We believe that spiritual talent can be developed; therefore, through various activities of the nurturing programmes can be designed for the exceptional cognitive talents. Our research helps to understand the characteristic of their spiritual experiences the role of it; these results can be a base for designing programmes targeted on developing SI.

Once Upon a Time: From Heather Has Two Mommies to My Princess Boy and Everything in between

13-451, USA, Research

Author: *Lisa Wright, lrw22@tc.columbia.edu*

Co-Authors: *Alexandra Luciani*

In this session we will bring a critical lens to the character development of potentially gifted children within the genre of LGBTQ children's picture books. We will share our research in which we have examined and analyzed the historical trajectory and classic and contemporary examples of this genre. The publication of *Heather Has Two Mommies* in 1989 was overwhelming met with hostility in the USA. Many years unfolded before additional robust and groundbreaking books were published. During the first decade and a half of the new millennium these texts have grown to include more aspects of the LGBTQ community. Most recently, books featuring transgender children as the main character are gaining momentum if not universal acceptance. Embedded in many of these stories are characters exemplifying creativity, talent, out-of-the-box thinking, fierce determination, and self-conviction. Yet, these very same books that offer these elegant and thought provoking examples of giftedness are also banned from schools and libraries. Our discussion will focus on the multi-layers of these stories, the marginalization of these books, what we can learn from these mentor texts about how to nurture LGBTQ gifted children, and share our vision of future publications. Our collection is extensive and selected texts will be available for browsing and discussing.

Personal Losses: Helping Gifted Children Cope

13-453, USA, Practical Experience

Author: *Michele Kane, m-kane1@neiu.edu*

Co-Authors: *Ellen Fiedler*

Loss is an unavoidable part of the developmental process. However, for intense, gifted children, these experiences may prove to be more difficult to navigate.

This session addresses the lived experiences of gifted kids in dealing with personal losses of all sorts, as well as losses associated with their idealistic dreams. Roles in the family, siblings, sharing attention with parents and learning to create friendships are relationship concerns that may involve loss as a salient feature. Life passages such as the end of childhood and career selection are also ripe with the loss of dreams. Death itself provides deep and abiding loss whether it is the loss of a pet or a special person. Case study examples will exemplify how these life transitions may affect gifted children who are deeply sensitive and passionate about life.

Strategies for helping children understand and cope with loss are the focus of this session, including suggestions for how adults can guide gifted youngsters while allowing for disappointments and simultaneously helping them develop resilience. Coping approaches from the resilience literature as well as recommendations for how to cope with the stress that results from loss will be shared. Examples from the field of Positive Psychology will be presented to illustrate the growth potential of powerful negative emotional experiences. Participants should leave with a myriad of ideas in helping gifted children and possibly themselves in dealing with loss.

Mindfulness-Based Stress Reduction and the Emotional Well-Being of Gifted Learners

13-457, USA, Research

Author: *Martha Decker, m.decker@moreheadstate.edu*

Co-Authors:

There is an increasing need for interventions to reduce anxiety and stress among gifted and talented youth and to assist them in developing the thought processes that give them a sense of control over the events in their lives (Moore, M. 2006). A growing body of research in mindfulness awareness of present moment experience, both at the University of Massachusetts Medical School Center for Mindfulness (Kabat-Zinn, 2013) and University of Wisconsin, Madison, Center for the Investigation of Healthy Minds (Davidson, R. 2013) provide a substantial foundation for introducing mindfulness practices with gifted students who too often experience pressures and anxieties that impede learning. In this presentation participants will learn about schools worldwide that are introducing mindfulness practices and also receive resources and information for bringing mindfulness-based stress reduction (MBSR) to their own schools. In addition, the presenter, who teaches MBSR will lead participants in a brief, direct experience of mindfulness.



Building Emotional Courage: Fostering Gratitude and Compassion

13-461, USA, Practical Experience

Author: *Michele Kane, m-kane1@neu.edu*

Co-Authors:

Many gifted children are exquisitely sensitive to their own inner world and the inner world of 17s. Often intuitively aware, these gifted children may feel the pain of the world and have a keen sense of justice. An advanced, empathic response is common for these emotionally gifted youngsters. Many are called to act, despite their years, when they perceive 17s in need.

Yet, it can be overwhelming as a child to understand the magnitude of the world's ills and feel unable to respond in a meaningful and purposeful way. These gifted youngsters need the assistance of caring adults to develop a repertoire of emotional responses that can provide emotional balance and cultivate emotional courage. To be able to self-advocate and have the courage of personal convictions can be daunting when faced with a solo voice.

The purpose of this presentation is to describe the growing body of research on gratitude, compassion and optimism that has implications for enhancing the well-being of sensitive, empathic gifted children. Mind-body research has indicated that simple practices that center on positivity and gratitude foster a greater sense of happiness and contentment. This becomes increasingly essential for gifted youngsters as the complexity of their inner world converges with real-life dilemmas and the stressors in their lives escalate.

Participants will be provided with case study material that demonstrates effective strategies of gifted children who thrive despite adversity.

Implementation of gifted education programme to facilitate the socio-emotional development of gifted children in HKMLC Queen Maud Secondary School (Hong Kong)

13-498, Hong Kong, Practical Experience

Author: *Richard H.F. Tong, hfrtong@yahoo.com.hk*

Co-Authors: *Elaine Tang*

In Hong Kong, affective or life education has been in line with the intellectual development of gifted children in recent years. Renzulli et al. (1986) highlight the importance of task commitment in cultivating gifted behaviour in the Three-Ring Conception of Giftedness. Goleman (1995) suggests that the Emotional Intelligence is an essential catalyst to realize ones' potentials. In HKMLC Queen Maud Secondary School (QMSS), the vision and rationale of delivering gifted education drive us to perform tiering in various curricula and instructions in mixed ability classrooms as the school has commenced gifted education at school-based level since 2000, in which QMSS has been one of the two leading schools in the Hong Kong Cluster School Gifted Education Project, sponsored by the Quality Education Fund and launched with Curriculum Development Institute, Education Bureau (EDB).

In this presentation, we will present and examine how the implementation of gifted education programme, fitting in the three-tier model as suggested by the Education Bureau, is adopted so as to facilitate the socio-emotional needs of gifted children through various learning platforms inside and outside regular classrooms. In particular, in the regular classroom setting, experiencing affective education through movies, drama education and experiential learning could effectively enhance their personal and social competence, together with cultivate empathy and social awareness in these children.

camp-leaders: looking for balance between trainings and lifestyle

13-504, Russia, Research

Author: *Natalia Loseva, remir.gasanbekov@gmail.com*

Co-Authors: *Margarita Grishanina Marianna Moymanova*

- Camp leaders provide the main part of high-quality creative children leisure activities
- how and where we are looking for and recruit young people for our outskirt and city's camps
 - main signs which hint us who are innate camp leaders
 - the education and training system
 - open lectures and additional and advanced trainings
 - differentiation in camp-leaders preparing
 - motivation and kpi
 - academic competition and crowd-sourcing experience
 - is there life when camp-leaders have become "too adult"?
 - General principles of the organization in the inclusion children's leisure activities
 - types of inclusion children's leisure activity: disabled children, children with Down's syndrome, children with social problems and lack of communicative skills, so on
 - preparing of special inclusive session in a summer camping
 - adaptation process both for "special" and "regular" children
 - art and developing programs for inclusive sessions
 - "edutainment" tasks for inclusive summer camps



The Heart of EQ: Tools to Empower

13-508, USA, Practical Experience

Author: *Kate Bachtel, katesoulspark@gmail.com*

Co-Authors:

Emotional intelligence is inextricably tied to cognition, achievement and well-being. This presentation will provide educators and parents with a variety of research-based strategies and resources to cultivate the development of specific social and emotional skills in gifted learners. Learn ways to avoid the pitfalls of perfectionism, develop optimism and enhance emotional literacy while growing healthy relationships. All will leave empowered with practices to support optimal student social and emotional development both at school and home.

Given the inherent diversity, intensity and sensitivity among gifted individuals, emotional intelligence is the foundation on which strong community is built. I will share what has been learned both through doctoral research in curriculum and instruction for gifted learners and also through practice as a teacher and administrator serving gifted kindergarten through eighth grade students in public and independent schools.

When gifted children grow their self-awareness and recognize the power in their sensitivities, they will be able to walk with calm confidence when their ingenious ideas and equity oriented actions bump up against the familiar and unjust.



Acceleration

Radical Early College Entrance: Missing the College Experience and Being “Out of Whack!”

17-50, USA, Research

Author: *Nancy Hertzog, nhertzog@uw.edu*

Co-Authors: *Rachel U. Chung*

Problem. Radical acceleration, or process where individuals graduate early from high school by three years or more, is one possible educational intervention used to address the needs of high-ability students (Gross & Vliet, 2005), yet rarely chosen as an educational option. **Purpose.** The purpose of this study was to explore the impact of radical acceleration programs to examine the outcomes related to alumni's personal, academic, and professional lives since they graduated from or 17wise left the University. **Methods.** Researchers employed a mixed methods approach. Quantitative and qualitative data were collected through a web-based questionnaire and semi-structured interviews of random and special case samples from the study. **Findings and results.** Graduates on the whole do very well academically and professionally, although there is some variance for social relationships. More than half earn graduate degrees, and almost 90% would make the same decision to go to college early. Many students felt that their living at home while at college limited their full college experiences. Several reported not having their “college experience” until they went to graduate school. **Conclusion.** The study provides programmatic insight for early entrance programs, fills a significant gap in the literature related to the long-term effects of radical acceleration, and contributes to the growing body of general acceleration literature. **Implications for practice.** Results from this study point to a need to develop more systematic ways to address social and emotional growth, and issues related to the disconnect between age and identity to support students as they transition out of college into adulthood. Gross, M. U.M, & Vliet, H. E. van (2005). Radical Acceleration and Early Entry to College: A Review of the Research. *Gifted Child Quarterly*, 49(2), 154-171.

Acceleration: 70 Years of Experience

7-51, Germany, Research

Author: *Annette Heinbokel, annette.heinbokel@swbmail.de*

Co-Authors:

As far as acceleration is concerned, educators and parents are interested in the long term effects of grade skipping. Therefore adults who had skipped a grade were sent questionnaires and asked what they remembered about it. 115 adults were found, they were born between 1917 and 1987. This study is a follow-up of one conducted in the early 1990s. At that time parents whose children had skipped a grade were asked to answer a questionnaire. Besides those of the children who were 13+ were interviewed about their experiences with their older classmates. The present study includes 20 answers from adults whose parents or they themselves had taken part in the first study. Seven girls and boys skipped twice, one girl skipped three times. A third of the adults remembered that after short time there was a lack of challenge again. Most of the grade skipping took place in primary school. There, more boys than girls skipped whereas in secondary school it was done by considerably more girls. There were more boys than girls who during adolescence had a problem with being smaller and weaker than their older classmates. Despite that, about 90 per cent of the females and 80 per cent of the males said they would skip again if circumstances were the same. Enrichment is more popular with teachers, parents and children. However, if enrichment is not sufficient and the pupil is supported the right way, acceleration is far more effective (see Hattie, John (2009). *Visible Learning*, Routledge)

Early to Rise: The Effects of Acceleration on Occupational Prestige, Earnings, and Satisfaction

4-78, USA, Research

Author: *Katie McClarty, katie.mcclarty@pearson.com*

Co-Authors:

While research repeatedly demonstrates positive outcomes for accelerated students in terms of academic achievement and social emotional outcomes (e.g., Kulik & Kulik, 1992; Rogers, 1992), less is known about the relationship between grade skipping and career outcomes. For example, accelerated students earn more advanced degrees, but does this translate to higher earnings? They adjust well to their new educational environments, but are they employed in satisfying careers? This study investigates whether acceleration's educational advantages persist into the workplace. Two mechanisms by which acceleration may affect career outcomes are considered: precocity (i.e., early career entrance) and productivity rate. Using a representative national sample (National Educational Longitudinal Study), we evaluated the effects of grade skipping on occupational prestige, earnings, and satisfaction. Students who skipped a grade were matched using coarsened exact matching (Iacus, King, & Porro, 2008) with older peers of similar ability, race, gender, and socio-economic background. Compared with peers who entered the workforce at the same time, accelerated students held more prestigious jobs, earned more, and increased their income faster.

This suggests the benefits of acceleration are not restricted to the classroom; to the contrary, gifted students realize long-term career-relevant benefits from their acceleration experience. Early acceleration may therefore propel talented students along an appropriately speeded path and enable them to achieve ambitious goals. Implications for educators and counselors will be discussed including how acceleration may impact initial career decisions as well as subsequent career outcomes.



Twice-Exceptional

Individualized Planning for Twice Exceptional Learners

15-112, USA, Practical experience

Author: *Daphne Pereles, stuart.omdal@unco.edu*

Co-Authors: *Lois Baldwin*

One of the challenges in meeting the needs of students with both giftedness and a disability is developing a comprehensive plan for services tailored to the particular student.

Coupled with this challenge is the need to address the impact of the degree of “masking”-- giftedness masking the disability, disability masking the giftedness, or both giftedness and disability masked by the impact of the other.

Understanding contemporary definitions of twice exceptionality, familiarity with common characteristics and providing means to observe them are the first steps in recognizing the impact of “masking” and addressing the multi-dimensional needs of twice-exceptional students. Specific methods for recognizing these characteristics will be introduced.

When addressing these varied needs, three critical concerns have been identified through research and the literature on effective practices: Identification of the student’s academic strengths and interests, learning challenges, and their social/emotional needs. Guiding questions for families and educators to consider regarding each critical concern in this problem-solving approach will be presented.

Twice-Exceptionality and the Impact of Autism on Talent Development

15-119, Australia, Research

Author: *Susan Wade, susan.wade@monash.edu*

Co-Authors: *Leonie Kronborg*

The perceived impact of autism on abilities and achievement was investigated as part of a larger grounded theory study to explore talent development in individuals on the autism spectrum with high abilities. While most research has focussed on the deficits associated with autism, relatively little is known about educational provision for ‘twice-exceptional’ individuals on the autism spectrum - who are gifted and talented in addition to having a disability. The study design uses grounded theory methodology (GTM) in which initial data is collected via an online questionnaire from participants (adults with an autism diagnosis, parents, teachers, psychologists, mentors and coaches). Theoretical sampling informs the selection of highly able participants for follow-up interviews via email. Preliminary analysis of responses from Symposia3 participants (Australia, North America and Europe) has been conducted using GTM procedures. The results demonstrate the importance of self-propelled learning in relation to a perceived positive impact of autism. Negative autism impacts contributed to struggling with employment and living below potential. Positive autism impacts contributed to achievement and wellbeing. A positive view of the impact of autism is associated with participant attributes such as age (adult), gender (female), location (UK) and achievement (high). Understanding the perceived impacts of autism in highly able individuals on the autism spectrum will have practical educational implications for developing abilities relevant to multiple audiences (individuals on the autism spectrum, teachers, parents, mentors and psychologists). Understanding and supporting the process of self-propelled learning may contribute to increasing positive aspects of the autism impact associated with high-achievement.

A Case Study of a High Intelligence Student with School Refusal Behavior

15-227, Taiwan, ROC, Practical Experience

Author: *HsinYi Wang, hsinyi215@gmail.com*

Co-Authors: *Ching-Chih Kuo*

This is a case study report of a high-intelligence youth with school refusal behavior. The family interaction and the relationship between school refusal and academic performance were analyzed. The study was conducted using in-depth interviews and behavioral observations. The main findings are as follows:

1. The subject high in socially prescribed perfectionism puts unreasonable demands for himself, delays beginning, being frustrated, avoids taking responsibility, or shows defensive behaviors because of his fear of failure. He is also extremely sensitive to what others think about him.
 2. Suffering from autism spectrum disorders, he easily avoided school tasks and even refused to go to school when there was a gap between his measured potentials and actual performance on academic tasks.
 3. The lack of adequate understanding of the subject’s twice exceptional learning and behavioral characteristics from parents and teachers results in school failure and avoidance and negative parent-child interaction.
- Currently he joins in a research project initiated by Professor Ching-Chih Kuo at National Taiwan Normal University. This project titled “Enriching Social Capital: Talent Development of Mild Autism Spectrum Disorder Adolescents and Building a Support System” including activities such as mentorship, counseling services, and a comprehensive support system, with a hope to help the subject improve social competence and interaction.



Assessment of Students with (Suspicion of) Intellectual Giftedness in Co-Occurrence with ASD: The S&W Heuristic

15-278, Netherlands, Research

Author: *Agnes Burger-Veltmeijer, info@agnesburger.nl*

Co-Authors: *Alexander Minnaert*

Traits of Giftedness and symptoms of Autism Spectrum Disorders (ASD) show overlap, which may cause camouflage of either condition. Moreover, professionals are often experienced either in ASD or in Giftedness. This may result in mis-, missed and biased diagnoses, and “consequently” inappropriate psycho-educational interventions. Therefore, we constructed a conceptual framework, the Strengths and Weaknesses Heuristic (S&W Heuristic), in order to tune assessment outcomes with intervention-indications in such a way that biased assessments could be reduced and that a grounded interconnection between assessment data and intervention-indications could be realised. Subsequently we evaluated whether assessments in psycho-educational practice were consistent with the theoretical principles of the S&W Heuristic by means of a broad analysis of 36 assessment-dossiers of Intellectually Gifted (IG) students (Full-Scale IQ > 130). The results indicated biased choices at several stages of the assessment process and the possibility of missed signals of ASD-characteristics among IG-students (Burger-Veltmeijer, Minnaert & Van den Bosch, 2011, 20Symposia, 2015). The S&W Heuristic is systematic and dynamic in nature and might optimise systematicity and coherence in psycho-educational research and praxis, regarding needs-based assessments of students with (suspicion of) IG+ASD. Moreover, it might eventually be applied to other categories of Twice-Exceptionality (TE) as well.

“Grades and Gifted” -A Life Story for a Student with dual exceptional situation: High Art Gifted Characteristics and Low Academic Performance Abstract

15-353, Taiwan, ROC, Practical Experience

Author: *Feng-Jui Hsu, samenh@gmail.com*

Co-Authors: *Chieh-Ju Huang*

Learning demands and affective traits from the gifted students are equivalent different from others, and how to provide adaptive education service for each individual student should be the topic now for gifted education. In the research, a student with particular painting performance was referred because of his low academic grades. According to the Special Education Act, he achieves the standard with art gifted but without taking appraisal and education service. With weak family support and complicated interpersonal relationships, this student had a dual exceptional situation: high art gifted characteristics and low academic performance. After interviewing and reviewing for related files, this student has the learner characteristics: overexcitabilities, strong control beliefs, independent work preferring, and good leadership. And the reasons for his low academic achievements are: refusing to do the simple work, avoiding fulfilling format homework, lacking family support; and with high risk interpersonal relationships. In addition, this student was in the environment about subculture and traditional religion and these caused the conflicts between the students and school teachers. The result for this research was to guide the student to ask for related professional teachers for art gifted advises in university, and that would be helpful both for his learning needs and plan. More, the other art gifted students would accept adaptive education service and teaching plan.

Gifted, ADHD, Either, Neither or Both?

15-384, USA, Research

Author: *Debra Troxclair, debbie.troxclair@lamar.edu*

Co-Authors:

Problem statement: Twice-exceptional gifted learners go unidentified and are not served for either their gifts or deficiencies because educators and parents do not have a clear understanding of what is going on with these children. For many years there has been an ongoing conversation between those experts in the field of gifted education and the experts in the field of special education and dialogue about misidentification of gifted students has occurred.

Purpose of the Study: A review of literature surrounding twice-exceptional gifted learners who may also have ADD/ADHD provides an explanation of the issues.

Methods: Journals in the field of gifted education were used to assemble an explanation of the issues.

Findings & Results: A summary of the long-standing debate is provided along with recent findings from the medical field which provide physical evidence of the existence of a variety of possibilities.

Conclusions: Mri scans indicate that there are distinctly different brain patterns of those who are gifted, those who are gifted/adhd, and those who are adhd only.

Implications for practice: Special educators, gifted educators, counselors, and parents need to be informed of these recent findings from the medical field in order to best support the children evidencing the similar characteristics.

Research studies need to be completed to determine if medication is appropriate for all of the different types of possibilities.



Promoting Learning Strategies for Twice Exceptional Students

15-401, Germany, Research

Author: *Christian Fischer, Ch.Fischer@uni-muenster.de*

Co-Authors: *Christiane Fischer-Ontrup*

Educating gifted and talented children is a big challenge for the educational system, especially when occurring in combination with various impairments. Those twice exceptional children often show a combination of different gifts and disadvantaged backgrounds, disabilities, behavioral difficulties, or learning difficulties. This presentation will especially focus on the last group of twice exceptional persons to support those children in their strengths, as well as in their weaknesses. While successful learning processes require effective learning strategies like cognitive, meta-cognitive and motivational-volitional strategies, twice exceptional children need special instruction adequate to their special profiles. This requires adapted strategies of information-processing, self-regulation and achievement-motivation using the personal strengths to cope with the individual weaknesses in order to transform potential into performance. The presentation will analyze different learning strategy-oriented programs of the ICBF especially for twice exceptional children (e.g. gifted dyslexic children). These learning strategy-oriented programs inside and outside schools are evaluated in empirical studies via different quantitative and qualitative methods (e.g. testing). Results show the effectiveness of promoting learning strategies for twice exceptional students, which in conclusion could be implemented via adaptive teacher training and further education turning research into practice.



Introduction of “Tuning Play”, a Music-Based Education Program for Children and Its Effectiveness

4-307, South Korea, Practical Experience

Author: *Jinmi Tae, jmtae91@hanmail.net*

Co-Authors:

During infancy and childhood, there is a difficulty in identifying talents or ability. Thus, it is important to create a comprehensive atmosphere to foster the development. It is found that music related activities are positively related to development of potentials of infants and children as these naturally facilitates sensibility and contributes to creating creative ability and attitudes. Tae(20Symposia) built upon previous researches and education experiences in Russia and Korea and have designed a music-based education program of channeling sensibility necessary for children and infants to fully utilize and facilitate abilities of hearing, visualizing, language, operating, and motions. The program named “Tuning Play” is to develop necessary ability and attitudes before receiving formal education; the user would be like an instrumental player in an orchestra to tune the instrument prior to playing the music. The research is to introduce the program and its effectiveness and to discuss the applicability in using the program for early ability development.

Bore-out: A Challenge for Unchallenged Gifted Adults

17-408, Netherlands, Practical Experience

Author: *Noks Nauta, noksnauta@ihbv.nl*

Co-Authors:

Boredom and bore-out at work are still not very well known themes. Gifted adults are at risk for this condition especially when they are employees, this statement is based on a study in the Netherlands in 2012-2013 among a large group of gifted workers. Possible factors that may make the gifted, talented and creative more vulnerable to boredom and bore-out are for instance: the hunger for intellectual challenge, the speed with which they observe and think and the importance to work following their values.

After a short theoretical introduction on boredom and bore-out some examples are given based on practice. Principles of positive psychology are used to formulate advice for the gifted workers and for their supervisors. Bore-out is a serious condition and it is important to prevent it or at least recognize it in an early stage.

People working with gifted, talented and creative children may use these insights in order to prepare gifted children more effectively for adulthood.

Gifted Elders: Not Everyone is Average

17-427, Netherlands, Practical Experience

Author: *Noks Nauta, noksnauta@ihbv.nl*

Co-Authors: *Ellen D. Fiedler*

Giftedness does not stop when people get older. Gifted elders are not always aware of their giftedness. In the last phase of life many gifted seniors withdraw in loneliness, because there are not enough people they can talk to at the same level. The average activities on offer for their age group are often very disappointing to them. The result of all this is that they feel quite lonely, some of them get depressed or want to end their lives.

Experience shows that recognizing this cause of “being different” and “feeling different” really helps a person to function better. Recognition also helps to learn more satisfactory connection and communication with 17 people.

At the Gifted Adults Foundation in the Netherlands we started four years ago to think about this topic. How do gifted elders experience their life? What are their social and emotional needs? What are effective ways to have gifted seniors and people around them recognize giftedness? What are ways to deal more effectively with the special needs of this group, whether they live at home or in sheltered accommodations? How can we help to prevent or cure loneliness and mental problems in gifted seniors? We have data from a small research project and from practice.

The presentation is part of the SENG “Gifted elders initiative” aiming to collect knowledge about gifted elders around the world and to spread this knowledge. <http://sengifted.org/archives/articles/gifted-comes-of-age-a-seng-initiative>

Identification of Musical Talents from Music Competitions’ Perspective

17-442, Hungary, Research

Author: *Balazs Hornyak, balazs.hornyak@gmail.com*

Co-Authors:

The importance of music competitions in music education has been widely appreciated for decades. Outstanding performers, chamber musicians, and teachers first appear in music competitions. Following the career of the winners of national competitions in Hungary, we can understand that there are many components that make a musical talent. The purpose of my research is to examine the results of National Music competitions in the mirror of the competitors’ achievements and careers. Besides their musical abilities it has been interesting to examine their cognitive skills and intellectual abilities as part of their success.



Underachievement

Underachievement: Identifying Potential Gifted Underachievers in Early Years Education

16-45, United Kingdom, Research

Author: *Diane Montgomery, dmont507@aol.com*

Co-Authors:

Silverman (2004) has shown that the most common factor in underachievement of the gifted is problems with writing and it is poorly developed lower order skills of handwriting and spelling that are the key contributors (Berninger (2008). Among disadvantaged populations lack of linguistic competence is also a contributing factor. Social language competence may be adequate but difficulties lie in the higher order language structures, vocabulary and concepts of the school curriculum (Warwick, 2009). The proposition is that if we identify poor writing skills and linguistic retardation in the early years in the presence of potential high ability then better targeted interventions could reduce the underachievement of these students at secondary school and degree level (Connelly et al, 2001, 2005). The problem has been that English Foundation Year assessments (DfE, 2012) have failed to identify gifted children in Reception and the Early Years much less their potential underachievement. This research (2012-20Symposia, N=177) has involved the development of a) a handwriting test, b) a spelling test, and c) a vocabulary assessment to reveal early skills and their development so that by the end of the Reception or the first years in school a teacher could profile achievement and underachievement. The rationale, methodology and first stage results will be presented in this session e.g. Girls were shown consistently to outperform boys in all three areas; high achievers made little progress in Reception; strategies teachers employed did not match children's needs. Strategies that will counteract UACh in these early years will be discussed.

Gifted and Troubled: Characteristics of Underachievers and the Need for an Appropriate Gifted Model

16-102, Australia, Research

Author: *Mimi Wellisch, mimiwellisch@bigpond.com*

Co-Authors:

The identification of gifted children have always been problematic, partly because characteristics can be quite diverse. This presentation explores gifted characteristics including those suggested by Roeper, Csikszentmihaly, and Betts and Niehart. Characteristics will also be viewed from the angle of the Theory of Positive Disintegration, as well as from research about highly sensitive children. It will be suggested that gifted children's characteristics, motivation, learning, and adjustment may be affected by problematic attachment (Bowlby, 1969), often associated with maternal depression. The session will include some of the presenter's research findings on gifted children's attachment style and characteristics. It will be suggested that gifted children's attachment problems may lead to underachievement, and compound the difficulties in their identification and schooling. Gagné's gifted model, currently used by education departments in all states and territories in Australia, will be discussed and analysed in relation to its practical applicability to gifted underachievers. It will be argued that a pathway is lacking in this model for children with socio-emotional and 17 problems. A new inclusive educational gifted model that can accommodate gifted children with problems will be introduced. The model includes a component for the screening of for both gifted characteristics, and for characteristics of commonly associated disorders, such as anxiety and ADHD. The discussion will highlight the difficulty in identifying gifted children who have associated disorder that may affect core gifted characteristics. A handout will be available to participants with a table of gifted characteristics and how these may change in children with associated disorders.

School, Family and Personal Characteristics: A Comparative Study between Gifted and Gifted Underachievers

16-229, Brazil, Research

Author: *Vanessa Terezinha Alves Tentes, psivan@terra.com.br*

Co-Authors:

This study investigated differences between 53 gifted and 43 underachiever gifted students, males and females, in relation to intelligence, creativity, learning motivation, self-concept, school performance, and parental attitudes. Tests of intelligence, creative thinking, and academic performance were used, as well as scales of personal and academic characteristics, motivation, self-concept and parental attitudes. The multivariate analysis of variance was employed. The results indicated that gifted students had superior scores on intelligence, total and verbal creativity, self-concept, and school performance measures. On the 17 hand, the underachievers had higher performance on extrinsic motivation. With respect to gender, the results pointed significant differences favoring male students in the intelligence test, and female students regarding verbal creativity, intrinsic motivation, self-concept, and school performance measures. No differences were noted related to parental attitudes. The recognition of underachiever gifted students has implications concerning the characterization of gifted persons and the criteria used for their identification.



Too Much too Soon?: An Exploration of Mental Health Issues amongst Gifted and Talented Children in the United Kingdom

16-440, United Kingdom, Research

Author: *Denise Yates, deniseyates@potentialplusuk.org*

Co-Authors:

1. What is the problem?

More than 850,000 children in the UK have been diagnosed with mental health conditions. There is reason to believe that many of these children may be gifted and talented. Certainly, Potential Plus UK's experience with children, parents and carers suggests that an increasing number of children are experiencing more severe mental health issues (including self-harm, eating disorders and depression) the impact of which includes underachievement, self-exclusion from school and a range of professional mental health interventions

2. The purpose of the study:

To explore the experience of families whose gifted children have mental health conditions.

To explore the implications of this research on policy and practice

3. Methods:

Desk research to explore the prevalence of mental health conditions amongst gifted children in the UK

Qualitative research including questionnaires targeted at parents and children, case studies from Potential Plus UK's Helpline and discussion groups with parents

4. Findings and results:

Some early conclusions from this study include that

perfectionism can have a major impact on the emotional health of gifted children particularly where this is linked to eg stress, anxieties and fear of failure, emotional health problems are starting to happen at a younger age, change to policy and practice both within education and amongst the mental health professions is vital.



Posters

Understanding Cognitive Processes in a Sample of Italian Gifted Children: Preliminary Data

P2-275, Italy, Research

Author: *Cristina Morrone*, morrone.cristina@gmail.com

Co-Authors: *Antonella Torriani*

The existence of different aspects of giftedness and the great variation within gifted population suggest that IQ does not completely define intellectual giftedness or describe the developmental differences between gifted children (Subotnik et al., 2011).

The aim of this study is to explore the executive functioning underlying the information processing of a sample of 42 Italian gifted children aged 6 - 14 years. WISC-IV (Wechsler, 2003) and DSM-oriented Scales of the School Age Child Behavior Checklist and Teachers Report Form (Achenbach et al., 2001) were used in order to enroll children with an IQ above 130 that do not have clinical issues. All children selected were administered the Cognitive Assessment System (CAS; Das, Naglieri, 1997) based on the Planning Attention Simultaneous Successive theory (PASS; Das et al., 1994).

Gifted children achieved higher CAS scores than Italian normative sample in all PASS Scales, particularly in simultaneous processing, that can be observed as gifted children's preferential modality of learning ($M = 131.64$, $SD = 9.37$). Planning ($t(40) = -2.62$, $p = .012$), Attention ($t(40) = -2.82$, $p = .007$) and Successive ($t(40) = -2.8$, $p = .008$) scores increase in correspondence to higher IQ levels. Therefore, we can identify a specific PASS cognitive profile of gifted children. The results could enhance the clinical and cross-cultural assessment of these children, and could make a useful contribution to intervention planning for gifted children.

Identifying Gifted English Language Learned within the Cultural Educational Context of China

P2-483, China, Research

Author: *Ruihua Chen*, r.chen.1@research.gla.ac.uk

Co-Authors:

English and Chinese languages are totally different and belong to different cultures. Cultural heritage, mother tongue, forms, social context and other aspects influence second or foreign language learning. It is estimated that there are approximately 400-650 million English learners and users in China, contributing to a quarter of the population in China. However, there is a paucity of research investigating gifted English language learning in China. As cultural conceptions could influence second or foreign language learning, the context of Chinese culture needs to be considered when identifying gifted English language learners (GELL) in China. Beliefs and attitudes of teachers, parents and peers relating to GELL are likely to be influenced by virtues of Confucianism in China. Considering Chinese cultural aspects will help researchers to contextualize and identify GELL in a more comprehensive manner. Issues relating to the identification of GELL within cultural contexts will also be relevant to the general development of gifted education research with respect to language learning. This poster will present the initial findings from the review of literature. The poster will include discussion of:

- 1) the concept of Chinese GELL;
- 2) the behaviors of adult GELL;
- 3) the effect of the Chinese cultural context on GELL. After presenting the main aspects, the poster will conclude with the emerging research questions around the identification of GELL in China in the Chinese cultural educational context.

Odyssey of the Mind - What We Know and Don't Know about This Creative Competition

P3-169, USA, Practical experience

Author: *Elena McLaughlin*, ewebb6@fau.edu

Co-Authors:

Problem: In 1978, S. Micklus and T. Gourley of Glassboro College, USA introduced a creative competition for youth. This program was a result of founders' belief that creativity can and should be fostered by giving children appropriate opportunities, not generally available in a school day. This competition became known as Odyssey of the Mind. It now reaches into many geographical regions, involves many levels, attracts international participants, and enjoys wide support. Yet, little is known about specific program outcomes of Odyssey of the Mind.

Purpose: The purpose of this poster is to highlight the current scope of Odyssey of the Mind program and summarize research findings about this initiative.

Methods: The method for this project is a systematic literature review, which will involve analysis of both print and Internet sources. An annotated bibliography will provide attendees with literature that best illustrates research findings.

Findings: The findings of this study are two-fold. First, anecdotal accounts by teachers, coaches, program organizers, and participants attest to a variety of positive program outcomes. However, an 17 finding is that very few scholarly articles have systematically documented the impact of Odyssey of the Mind on creativity and 17 elements.

Conclusion: It is somewhat surprising that such a long-running creative competition would receive little to no attention from the scholarly community. The poster's main conclusion is that more research is required to substantiate the overwhelmingly positive anecdotal support for Odyssey of the Mind. The poster suggests directions for future research and classroom applications.



Is There Any Difference in the Kindergarten Teachers' Perception of the Role in Creativity Education According to Their Background Factors?

P3-203, South Korea, Research

Author: *Min Taek Lim, ehsung06@hanmail.com*

Co-Authors: *So-Yeon Sung Eun-HyunSung*

There are few studies examining whether the background factors of teachers affect the performance in creativity education. To give some elements of answer to that issue, this study asks whether kindergarten teachers' perception about their role in creativity education differs according to their background factors (teaching experience, academic background, certification type, age of the infants that teachers are in charge of, number of courses about creativity that teachers had completed). We surveyed 264 kindergarten teachers from 105 kindergartens in Gyeonggi province, Korea. We asked them teacher's role for creativity education and analyzed the differences with independent t-test. The results are as follows. First, the more a teacher has teaching experience, the better he or she assumes the role related with the creativity education. Second, there is no significant difference according to teacher's academic background. Third, there is no significant difference according to teacher's certification type. Fourth, teachers who are in charge of five years old infants do better their role for promoting infants' fluidity than the teachers in charge of three years old infants. Finally there exists significant difference according to the number of courses about creativity that teachers had completed. These findings suggest that teacher's experience of teaching and completing creativity courses are important to do better their role of creativity education.

Comparison of Creativity Education in the Classroom between Korean Teachers and American Teachers

P3-204, South Korea, Research

Author: *So-Yeon Sung, ehsung06@hanmail.net*

Co-Authors: *Moon Jung Lee Eun-Hyun Sung*

It is important to understand cultural difference in creativity within education. However there are few studies about that issue. Based on this perspective, this study aims to compare creativity education in the classroom between Korean teachers and American teachers. To achieve that purpose, this research surveyed 245 teachers from Korea and 40 teachers from America. We asked them to self-report how they prepare and execute the factors related with the creativity education, which are consideration of students' traits, specialty of teachers, student centered teaching and learning method, personal and physical resource, divergent thinking, convergent thinking, creative problem solving, openness, and challenge and curiosity. We analyzed the differences with independent t-test. The results indicate that the differences in the mean scores of each factor between Korean teachers' and American teachers' are not significant except for the factor, "challenge and curiosity". This finding suggests that teachers in Korea need to make more efforts to encourage students to enhance challenge spirit and curiosity.

Developing the Assessment of Creativity Education in the Classroom: For Students' Use

P3-207, South Korea, Research

Author: *Eun-Hyun Sung, ehsung06@hanmail.net*

Co-Authors:

Students' assessment of creativity education (SACE) is essential in examining the effectiveness of creativity education. The present study aims to develop SACE in the classroom based on the components in the class and creativity education. This study reviewed previous research about the components in the class and creativity education. Four components (consideration of students' traits, specialty of teachers, student centered teaching method, resources) are detected as the components of the class while five components (divergent, convergent, creative problem solving, openness, curiosity) are identified as the components of creativity education. The survey was executed to 347 elementary and middle school students in creativity-personality model (CPM) schools and to 459 students in regular schools. Then this study developed 16 items for the components in the class and 26 items for the components of creativity education. The construct validity was confirmed through confirmatory factor analysis. In case of elementary school, independent t-test showed significant difference between CPM school and regular school both in the components in the class and creativity education. However, in middle school, the result demonstrated there was no significant difference between CPM school and regular school in the components of creativity education. This result might be due to Korean social phenomenon that middle school education places more focus on the preparation for college entrance test.

Creativity and Creative Classroom Environment in Korea and the USA

P3-211, South Korea, Research

Author: *Eun-Hyun Sung, ehsung06@hanmail.net*

Co-Authors: *Sunah Son James C. Kaufman*

There are few studies dealing with cultural differences in creativity within education. The purpose of this study is to examine the relationship between domain-specific creativity (DSC) and creative classroom environment (CCE), the latter consisting of both teachers' attitudes and teaching and learning methods. Our goal is to compare the CCEs of both Korea and America in order to find ways to improve them. We surveyed 1,174 university students from Korea and 551 university students in America. We asked about their experience with the CCE and administered a self-report DSC test. We analyzed the differences with independent t-test. First, there exist significant correlations between the CCE and different aspects of DSC. Second, the students with higher perceived CCE displayed higher scores in all areas of the DSC measure than students with lower perceived CCE. Third, American students perceived better CCEs compared to the Korean students. Fourth, Amer-



ican students reported higher scores in the DSC measure compared with the Korean students. Fifth, Koreans saw the need for teachers' attitude as being important for an ideal creative environment, whereas in America, this need was low. Instead, Americans viewed real practical needs as being of higher priority than did Koreans. Based on these results regarding the difference between Korean and American creativity and CCE, this study discusses what the two countries need to focus respectively to best improve their CCE.

A Historical View to Giftedness Educations in Turkey: With Policies, Theories and Psychological Basis

P3-355, Turkey, Research

Author: *Sule Demirel Gurbuz, suledemirel@gmail.com*

Co-Authors: *Ercan Opengin*

This study includes cultural beliefs and values about giftedness. Additionally theoretical frameworks of definition of gifted children in turkey has discussed. Turkey's priorities and strategic goals about gifted education is also this study's focus. In Turkey date back to the beginning of the 20th century, the first official definition of giftedness was made by the Ministry of Education in 1974. In this definition, heavily influenced by the notion of general intelligence, someone having an IQ over 130 was considered as gifted, and someone with an IQ over 120 was considered as talented. In 1991, the Ministry of Education used the term "talented" instead of the gifted and defined talented children as those who demonstrate high performance in general ability or special talents compared to their peers. Theory of Multiple Intelligences was quite effective on definition of giftedness recent years.

According to implicit view, practical ability, rational thinking, and leadership have been the most valued abilities throughout the history of Turkish people. But these abilities don't reflect to current definitions and identification procedures so much. As a result for this review, it can be said that from the very beginning of the establishment of the Turkish Republic in 1923 and to the present, new and innovative regulations in the educational system related to the nation's gifted and talented students have emerged and were shaped by the context of Turkey's political, economic, and universal goals and competition.

The Effects of Student Reflection on Academic Performance and Motivation

P4-15, USA, Research

Author: *Derek Cavilla, derek.cavilla@galileogiftedschool.org*

Co-Authors:

This action research was conducted for the capstone project of the presenter's Master of Education program in Gifted Education at the University of Central Florida. The mixed-method study examines the potential connection between student self-reflection with academic performance and motivation to complete assignments within the context of an eleventh and twelfth grade English classroom in an underserved community. Building upon the conceptual framework of reflection as a tool for enhanced student metacognition, defined as the ability to think about one's own thinking, the researcher postulated that a positive correlation would exist between application of a self-created reflection instrument and students' overall level of academic performance and motivation. After an eight-week integration of the intervention, a statistically insignificant correlation was found between either construct; however, qualitative analysis provided significant implications for teachers and the potential power of reflection in the classroom – particularly for gifted students. Foremost, reflective activities do not appear to detract from academic performance nor have a negative correlation with student motivation. Furthermore, reflective activities in the short term appear to impact students on an affective level rather than a cognitive level, thus suggesting the need for a multi-tiered, extended time period for implementation in order to support lasting, significant impact academically – particularly for gifted students who are experiencing asynchronous social-emotional development or who lack environmental support as a result of living in an underserved community.

The Students' Perceptions of Participation in Advanced Placement in Specialized Gifted Science High Schools

P4-142, South Korea, Research

Author: *Hyeri Park, hyeri@uga.edu*

Co-Authors: *Kyung Hee Park, Ho-Seong Choe*

Advanced Placement was initiated in Korean gifted science high schools, in 2013 to offer gifted students more challenging academic experiences. This study investigated the necessity of Advanced Placement, students' satisfaction of AP courses and differentiation in contents, methods, and assessments from regular courses. To conduct this research, 884 participants were differentiated from four different gifted science high schools in Korea. In addition, 39 gifted college students who took AP courses in their high schools, also participated in focus group interviews about the experience and meaning of taking AP courses.

The results demonstrated that 27.7% of the students responded that these AP courses elevated their educational opportunities, and the 17.18.5% who responded that these AP courses would help their major course of study in college. Regarding differentiation of AP courses, 48.8% of these students indicated that the content they were learning was differentiated and 40.7% of these students indicated that the teaching methods used were differentiated. Several important points from these focus group interviews were drawn. In conclusion, students suggested that the curriculum connection between gifted science high schools and specialized science colleges should be strengthened so that they have a more enriching research experience without repeating the same concepts in college. Also, students emphasized that diverse materials and instructional methods are needed.

To raise educational accountability and strengthen the connection of the curriculum in gifted science high schools and specialized science colleges, common differentiated rigorous Advanced Placement criteria should be established at the national level.



The Influence of Concept Oriented Mathematics Curriculum Toward the Mathematics Achievement Motivation of Gifted Students

P4-165, Taiwan, ROC, Research

Author: Ya-Ling Hou, Professor, yalingho0601@gmail.com

Co-Authors:

This study was a longitudinal study to explore the change of gifted students' mathematics motivation when they participated in the concept oriented mathematics curriculum. Concept curriculum emphasized on interdisciplinary collaboration to help students learn about the system of knowledge, not the individual element of the knowledge system. Most gifted math curriculum in the junior high school was adjusting to the original textbook. Most of the content was for the purpose of acceleration or enrichment. There were very few curriculum designed by the math theme or math concept. This kind of curriculum could best respond to the characteristics of gifted students.

101 math gifted students participated in this study. The researchers developed "The Scale of Mathematics Achievement Motivation" according to Eccles and Wigfield's Expectancy-Value Theory of Motivation. There were four sub-scales in this test such as the math ability belief, interest value, utility value, and importance value. And the researchers used Latent Growth Curve Model (LGM) to analyze data. The results showed that the LGM could describe the math ability belief, and the TLI was .977, IFI was .967, CFI was .967, and SRMR was .031. The data showed a clear increase in the math ability belief.

The conclusions of this study were as the follows:

1. The Concept Oriented Mathematics Curriculum could reach the special needs of math gifted students and maintained the steady growth of their cognitive function.
2. Unlike most of the studies that concentrated on the gifted students' academic achievement, the study focused on the importance of inner achievement motivation using the whole gifted person perspective. It could help teachers to assist gifted students to reach self-actualization.
3. It could understand that the change of students' achievement motivation when participated in the curriculum was positively increased.

Keywords: Concept Oriented Mathematics Curriculum, gifted students, longitudinal study

Teaching Childrens' Literature to Gifted Readers in the Primary School: A Comparative Study between China and Scotland

P4-177, China, Research

Author: Tingzhao Zhang, t.zhang.1@research.gla.ac.uk

Co-Authors:

Children's literature can be used to support children's development in many aspects, such as their intellectual, social emotional and aesthetic needs. Gifted readers often display characteristics such as high level of reading ability, critical thinking, creative thinking, persistent behavior and independent learning. Guiding them to select appropriate books and using differentiated pedagogy are essential to support their individual development. However, currently there is a paucity of research considering how teachers use children's literature to support gifted readers in practice. Even fewer studies have been undertaken to consider gifted readers in comparative cultural perspectives, by which advantages and disadvantages will be identified and implications for practice can be developed.

The poster will be based on a review of literature on this topic. Firstly the review will examine how national curricula in China and Scotland supports the learning and teaching of gifted readers. Secondly it will identify from existing literature how each country conceptualises gifted readers by exploring things such as definitions, characteristics and cognitive styles of gifted readers along with purposes and strategies for teaching children's literature to gifted readers. After presenting the main aspects, the poster will conclude with the emerging research questions around the teaching of children's literature to gifted readers in the primary school in both China and Scotland.

Intervention for Gifted Children from the Discourse of Primary Teachers

P4-187, Mexico, Research

Author: Monica Galan Leyte, doloresvaladez@yahoo.com.mx

Co-Authors: Rogelio Zambrano Guzman Maria de los Dolores Valadez Sierra Alejandro Avalos Rincon Gabriela Lopez

Aymes

The knowledge that we have about the teachers' intervention with gifted children, generally comes from a investigator's point of view, not from a teacher's view, which implies a loss of important data about the duties they perform (Coleman, 20Symposia). As a part of a broad study, 164 teachers from Guanajuato, México's elementary schools were asked how they taught inside a classroom with gifted children, with the objective of getting to know more about their teaching practice from their perspective. A lexical analysis was done in order to classify their responses with Alceste 2010 software. Their statements were classified according to similarities found in their responses. Results show that their classroom's intervention is done by adapting new strategies in their schoolwork. The strategies they use the most are extra activities that they believe are more challenging and complex in order to strengthen the gifted children skills. An17 strategy found to be used is the active participation of the gifted students as tutors of 17 non-gifted students. They rarely work on simple projects or research projects. Overall, teachers are putting effort in satisfying the educational needs of these children; however there is still a lack of training to understand clearly the work that needs to be done with this children.



The Effect of Problem-Based Learning on Student Achievement and Perceptions of Classroom Quality

P4-234, USA, Research

Author: Anne Horak, ahorak@gmu.edu

Co-Authors:

Using a quasi-experimental design, this study explored the impact of a Problem Based Learning (PBL) unit developed by a large suburban school district in the mid-Atlantic USA for a gifted and talented program middle school curriculum on: (a) students' performance on standardized tests in middle school Science, as measured by a sample of relevant test questions from a district-managed test bank; and (b) students' perceptions of classroom quality according to the constructs of: meaningfulness, challenge, choice, self-efficacy, and appeal as measured by the Student Perceptions of Classroom Quality (SPOCQ) (Gentry & Owens, 2004). A total of 457 students participated in the study.

The Effects of Assumption Reversal Thinking Skill on Scientific Concept Formation in Elementary Science Gifted Students

P4-249, South Korea, Practical Experience

Author: Ju Young Lee, leejysam@daum.net

Co-Authors: Seong Joo Kang

The purpose of the study is to find the effects of science classes applied with assumption reversal thinking skill on scientific concept formation of elementary science gifted students, and the object of this investigation are one science gifted class of 25 sixth graders, experimental group, and the 17 science gifted class of the 25 sixth graders, control group, who belong to A gifted education institute located in B City.

While the experimental group received assumption reversal thinking skill based lessons, the control group received common lessons according to the science teachers' manual. For the study, the investigator selected six lessons for the Unit of The Several Gas from the first-semester curriculum of the sixth grade. In Order to measure the scientific concept formation, examination paper was utilized as the pre-test and post-test.

For the analysis of collected data through the pre-test and the post-test, t-test was conducted and the results are as followings.

The experimental group which participated in the science classes applied with assumption reversal thinking skill showed statistically significant difference with the control group which experienced general teaching methods in scientific concept formation. The experimental group did not show statistically significant difference in scientific concept formation of scientific knowledge but they showed statistically significant difference in scientific concept formation of scientific inquiry.

Becoming Real Scientist as a Program for Gifted Students

P4-328, South Korea, Practical Experience

Author: Jung Bog Kim, ljiwony@gmail.com

Co-Authors: Bokyoung Jung

In Korea, the Research and Education program (R&E program) for science-gifted students has been operated since 2002. The purpose of this program is that science-gifted students practice real research in a science laboratory from scientist. In this study, we investigated what students learn through a R&E program in the laboratory where interaction between atoms and laser fields for laser cooling has been studied. Science-gifted students researched their own topic set by the scientist in the lab for one year. We were able to find out their three features during this program. First, they changed their language like a scientist. They were able to express their own thinking using equation and scientific terms. Second, they learned the way to solve problems a scientist does it, They made the plan to do experiments and carried out investigations. Third, they felt worth to live like a scientist. They wanted to research more and find something new. And they said that they want to be a scientist even though scientists' life is very tough.

Functions in Daily Life

P4-462, Taiwan, ROC, Practical Experience

Author: Yu-Tso Chen, mathgtc@gmail.com

Co-Authors:

Mathematics is an essential tool in many fields, especially in scientific research. For instance, a lot of research has to be done, based on a series of quantitative analysis. The relations between or among numbers and data are all function relation in mathematics.

The concept development on functions is very important in junior high school math. However, it's, in fact, not easy for a teacher to well explain what functions are. Neither is it easy for secondary school students to understand why they need to acquire them. In my opinion, though eight types of functions are taught in Taiwan high schools, the real core of the concept is based on one rule. Functions are just relation between a set of input and a set of output. Understanding the relations is the key idea. If we, math teachers, can convey the basic concepts efficiently, it will be easy for students to get the key points, understand how important it is, and apply it to daily lives. Therefore, I try to use a lot of life experiences to enable students to learn the basic idea. I hope through interesting examples and dialogue, enable students to do repeated thinking and figure out the definition of functions is in fact some certain rules often shown in life. All I want to share in the work is my curricular practice in teaching functions through daily examples.



A General Outlook on Early Childhood Programs in Gifted Education

P4-479, Turkey, Research

Author: O-mer Faruk Tamul, omerfaruktamul@gmail.com

Co-Authors: Emine O-zturk Hatice Kübra Sözel

Gagne's emphasized that ability and attitudes develop concurrently (Johnsen, 2009). By contrast of this, in education the young-est participants are often the last priority (Freeman, 2009). For this reason early childhood programs are very significant particularly gifted children. In this study, early childhood programs for gifted students are examined. The purpose of this study is to investigate early childhood programs for gifted children according to identification, curriculum and grouping criterias. Different schools, universities and private schools for early childhood in gifted education were examined from their websites and descriptive statistics were used. According to the first results, very few early childhood programs for gifted children were found in schools, universities and private institutions and current ones are usually summer school or weekend programs with different practices. Addition to this, very few formal education programs for gifted children in early childhood were found. As a consequence of that, homeschooling can be an alternative for some of them. Private or public early childhood programs for gifted and talented learner can be evaluated in terms of convenience of these children. Addition to this, differentiated curriculum effects on these children's academic and social needs can be investigated. Finally, gifted education policies of Turkey and 17 countries effects on that programs should be investigated.

To Play or Not to Play: Enhancing Gifted Students' Leadership and Willingness to Serve

P5-365, Taiwan, ROC, Practical Experience

Author: Yuchen Liu, a323323323@yahoo.com.tw

Co-Authors:

It is a myth whether gifted students are willing to serve 17s. The instructor thought about guiding students in the program to develop leadership and build up their awareness of social responsibility as the program was sponsored by Taipei City Government. These students were demanded to launch some projects regarding western holidays for school. The preliminary study aimed at probing into how students grew in the process.

Two classes were asked to perform dramas about western cultures. In 2012, one class was assigned to prepare a Christmas play. Students were excited at first, but then the united spirit nearly fell apart when disagreement arose. The director of the Christmas play even irritated some students because of her overexcitedness. In the beginning of 2015, the 17 class was requested to complete an Easter play. Some seniors in the Christmas play came back school after graduation and shared with the younger students how to fulfill the Easter show.

The findings of the study are : (1) the students failed to tolerate 17s' mistakes, but later could adjust themselves; (2) they practiced the idea of giving and knew the importance of leading 17s as well as being led; (3) the instructor needed more understanding and patience.

From this study, the instructor found the students could devote for the greater good. Therefore, teachers should supply more opportunities for students to experience leadership and enhance their abilities.

The Development of Career Path Model for Science Gifted Students in South Korea

P5-405, South Korea, Research

Author: Jungmin Kim, justkstyle@gmail.com

Co-Authors:

The purpose of this study was to 'The development of Career Path Model for Sciecn Gifted Students'. Many Gifted Students are reluctant to enter school of natural sciences or engineering, and switching a career path the 17 fields of academia. Targeting the field of medical science or very differnt study area, such as law. To prevent a social issue named 'crisis in the field of natural science and engineering'. Therefore, it is required to provied specific consultation and education supprting Gited Students to establish their Career. The research subjects were 17 cities in the province of Supervisory official(School commissioner), and 20 Professors of Gifted education, and 25 Teachers of Gifted School. Career path delveloped for varios fields of Science and Mathematics for Gifted Students. Science devi- ded 5 sections, physics, chemistry, biology, earth science, foundation/venture. For statistical analysis of the collected data, SPSS Program and Structural Equation Model Analysis were used. As a result, the Career Path Model showed suitable, and benefits for Science Gifted Students. The results of this study can be offered as basic data for developing career and implementing a system in order to broaden the width of understanding about career and to help the Career decision in the Science Gifted Students.

IGGY E-Learning

P6-407, United Kingdom, Practical Experience

Author: Rosalind Roke, R.L.Roke@warwick.ac.uk

Co-Authors: Adam Boddison

IGGY's e-learning pedagogy is based on the premise that giftedness is developmental and that the potential of gifted learners can be further developed through the opportunities to explore academic subjects in more depth (in order to achieve mastery), as well as through breadth of study (by introducing learners to new subjects which may not be available in their everyday educational setting). Uniquely, IGGY's intellectual proposition is set within an online social network which aims to connect gifted learners from around the world, providing a sense of belonging to a community of like-minded young people. IGGY positions its members as part of a worldwide community of gifted learners and as co-collaborators (with expert academics, doctoral students and specialist learning/knowledge organ- isations) of academic content for this audience.

This presentation will demonstrate the innovative e-learning and community-building opportunities provided to gifted learners through IGGY. It will locate key features of IGGY's online community and e-learning platform within best practice teaching strategies for gifted education (as defined by Kronborg and Plunkett 2012) including: extension and differentiation; inquiry-based learning; tapping into stu-



dent interests through the use of advanced concepts and knowledge and IT; and providing for the social and emotional needs of students. It will also discuss the importance of online mentors as facilitators of academic and psycho-social development (Kelemen, 2010) in the IGGY context.

Lessons Learned on Junior Science Talent Project, Thailand

P7-106, Thailand, Practical experience

Author: Atiporn Suwan, atiporn@nstda.or.th

Co-Authors:

Junior Science Talent Project (JSTP) is a program under Human Resource Development (HRD) of National Science and Technology Development Agency (NSTDA), Thailand. JSTP established in 1999. The mission are to build up the pool of science and technology talented students, and to enrich and nurture them to become high quality scientists and researchers. Each year, JSTP searches for 100 talented high school students using several criteria such as creativity, scientific interests, scientific project and individual academic background. JSTP provides an enrichment program based on the theory of multiple intelligences and mentoring system. Each talented student will be matching with an active scientist mentor. The mentoring system will then be carried out through various activities, including a small research project. During the process, students' creativity, learning, and problem solving skills will be monitored. Finally, 15-20 students will be carefully chosen for scholarships in the fields of science and technology. For outstanding students, the scholarship will be extend to the Ph.D.

In this study, the qualitative research methodologies are used to assess the JSTP's enrichment program. The secondary data from the annual report are collected and categorized. The qualitative data are collected by semistructured in-depth interviewing 37 key Informants related with JSTP including Symposia talented students, 21 parents of talented students and 3 mentors.

The result showed that, for 17 years of operation, JSTP has supported 244 talented students, and 62 % of JSTP's graduated students choose a science and technology related career such as scientist, researcher, engineer and doctor. Many talented students have successfully applied to study in high ranking world universities. In addition, some of them have published 99 papers in peer review journals, with 526 citations. The 4 keys of success of JSTP are, 1) JSTP provides varieties of enrichment activities based on the theory of multiple intelligences. 2) JSTP encourages talented students to realize the beauty and importance of science and technology. 3) JSTP set up the mentoring system with full supports, i.e. full scholarship and research grant. 4) JSTP creates a learning society and networking to share experiences among JSTP's scholars. We believe that these 4 keys of success assist talented students to have truly scientific abilities and become high quality scientists or researchers in Thailand.

A Theoretical Study for Developing Self-Regulated Learning Improvement Program for Gifted Children of Economically Disadvantaged and Multicultural Families

P7-155, South Korea, Research

Author: Hye-Young Park, hyeyoung00@hotmail.com

Co-Authors: Shindong Lee Jinho Kim Soyoung Joo

Assuming the same rate of gifted and talented children in all groups of the society, there must be a number of the gifted among children from economically disadvantaged and multicultural families. However, there are few researches on the gifted children of economically disadvantaged and multicultural families, and programs related to supporting those children in Korea. The purpose of this study is to explore the differences on self-regulated learning between gifted children from different social statuses, and have a strong theoretical background for developing an self-regulated learning improvement program. Even though there were not many previous researches conducted in Korea, it had been predicted that there would be much difference between two groups of children. However, there was little difference on most factors of self-regulated learning between two groups of children, which is surprising and very different from researches conducted in 17 counties. It was concluded that the subjects were already identified as gifted children and participating in gifted programs and it made them improve their self-regulated learning ability. Therefore, a research with children who haven't been identified as the gifted needs to be conducted.

The study made three contributions to the fields of gifted education and self-regulated learning. First, expanding knowledge base of self-regulated learning and children of economically disadvantaged and multicultural families. Second, understanding gifted children's learning process according to variables such as environment. Finally, suggesting a further research.

The Development of Assessment Test for the Task Commitment of Gifted Students, Based on Students' Actual Performances

P7-222, South Korea, Research

Author: Eun Sun Ji, lemondemon@hanmail.net

Co-Authors: Sung Ho Yang

The task commitment is one of the most distinct characters of gifted students. The assessment of task commitment is mostly conducted by self-assessment which evaluates their task commitment for themselves through the questionnaire. In the stage of recommendation for gifted education, the assessment of task commitment is frequently performed by teachers, based on their observation on gifted students. However, the former lacks objectivity and the later could be dogmatic or make hasty generalization. In this work, we tried to develop new assessment tools evaluating task commitment of gifted students on the basis of students' actual performances, instead of self-questionnaire or teacher's observation. In particular, the assessment tool includes operation of intellectual games such as snake puzzle, pentomino for sustaining students' interest in the



assessment. Objectified Indexes (time spent on the challenges, the expression of the will of the challenges, etc.) that revealed from the actual performances were scored, and then compared with the sub-factors (e.g., challenge, flow, willingness) of task commitment from conventional self-assessment.

Developing a Self-Regulated Learning Improvement Program for Gifted Children of Economically Disadvantage and Multicultural Families

P7-270, South Korea, Research

Author: *Hye-Young Park, hyeyoung00@hotmail.com*

Co-Authors:

Assuming the same rate of gifted and talented children in all groups of the society, there must be a number of the gifted from economically disadvantaged and multicultural families. However, there are few researches on the disadvantaged gifted, and programs related to supporting those children in Korea. The purpose of this study is to explore the differences on self-regulated learning between gifted children from different social statuses, and have a strong background for developing an self-regulated learning improvement program.

Even though there were not many previous researches conducted in Korea, it had been predicted that there would be much difference between two groups of children. However, there was little difference on most factors of self-regulated learning between two groups of children, which is surprising and very different from researches conducted in 17 counties. It was concluded that the subjects were already identified as gifted children and participating in gifted programs and it made them improve their self-regulated learning ability. Therefore, a research with children who haven't been identified as the gifted needs to be conducted.

The study made three contributions to the fields of gifted education. First, expanding knowledge base of self-regulated learning of the disadvantaged gifted. Second, understanding gifted children's learning process according to variables such as environment. Finally, suggesting a further research.

Factors Predicting Self-Regulated Learning Strategies: On Psychological Basic Needs and Achievement Motivation

P7-338, South Korea, Research

Author: *Min Shin, dahn@cau.ac.kr*

Co-Authors: *Doehee Ahn*

This study was to examine whether group of high school students' (gifted students, high achieving non-gifted students, and low achieving non-gifted students) psychological basic needs and achievement motivation influence their self-regulated learning strategies. Of the 600 high school students surveyed from 3 high schools in two metropolitan cities, Korea, 489 students completed and returned the questionnaires yielding a total response rate of 81.50%. The final sample consisted of 399 males (81.6%) and 82 females (16.8%). Among the final sample, 113 students were gifted, and 376 students were non-gifted. Their average age was 17.20 years. Measures of students' self-regulated learning strategies (i.e., cognition strategy, self-regulation), psychological basic needs (i.e., autonomy, relatedness, and competence), and achievement motivation (i.e., intrinsic motivation, extrinsic motivation, and amotivation). Pearson's correlations indicated that students' cognition strategy was positively associated with some of psychological basic needs (i.e., autonomy and relatedness) and some of academic motivation (i.e., intrinsic motivation and extrinsic motivation). Also, students' self-regulation was positively associated with psychological basic needs (i.e., autonomy and relatedness) and intrinsic academic motivation. However, students' cognitive strategy and self-regulation were negatively associated with amotivation. Results are discussed in relation to theoretical implications and school settings. Based on these, it is expected to seek an environment that brings out the self-regulation learning strategies at the school site.

Supporting Low-Income, High-Ability Students to Be Confident in Career Decision-Making

P8-87, USA, Research

Author: *Mihyeon Kim, mxkim3@wm.edu*

Co-Authors:

Various unique factors may influence the career development of gifted students (Perrone, 1991). Researchers believe that environment influences students' self-efficacy, and high self-efficacy impacts the way of interaction with teachers in a positive way; that better interaction will in turn lead to high outcome expectation as well as career goal setting based on student interest (Lent, Brown, & Hackett, 1977, 1982, 1986). In this regard, this study is to examine the relationship among disadvantaged gifted students' school climate, self-efficacy, and career decision-making self-efficacy. In this study of high-ability, disadvantaged middle school students, the regression analysis for predicting career decision-making self-efficacy from school climate and multidimensional scales of perceived self-efficacy was found to be statistically significant ($r^2 = .17$ and $r^2 = .51$); that is, 17% of the variance in career decision-making self-efficacy was predictable from school climate and 51% of the variance in career decision-making self-efficacy was predictable from multidimensional perceived self-efficacy. The results of this study suggest that supporting leisure-time management skills and providing extracurricular opportunities helps students to have higher career decision-making self-efficacy. In addition, students who are confident in expressing themselves have higher career decision-making self-efficacy. Also, if the students are proud of being part of the school, they tend to be more confident in expressing themselves. Therefore, schools need to work on positive school environment allowing students to express themselves comfortably, and encouraging students to have time management skills and communication skills may be important to prepare students for them to make proper career decision-making.



Specialist Music Schools in Poland in Parents' Perspective

P9-91, Poland, Research

Author: *Malgorzata Sierszenska-Leraczyk, mleraczyk@o2.pl*

Co-Authors:

Numerous studies show that children whose achievements in music are high experience great support and encouragement from their parents. It has been proved that parents' conviction of their child's talent, even if objectively not confirmed, may be a significant factor enhancing the child's musical development. It also happens that a child labelled as musicaly "gifted" becomes motivated and encouraged to work hard which in consequence results in high achievements. That is why parents' interest and involvement in music education of their children is appreciated in music schools. It has been observed that parents who orient their children towards music, for example by joint singing or listening to music, introduce the child to this specific realm. Their involvement in the child's musical development often demonstrates as joint music making, which in turns makes the child wish to play an instrument and deal with music. Due to the fact that the family environment plays a great role in the child's professional development, it has been undertaken to check how music education is perceived and evaluated by parents whose children attend secondary music schools. The presented results stem from 54 questionnaires filled in by parents in secondary music schools in five Polish cities.

Parenting Stress and Gifted Children Needs: A Research among a Sample of Italian Families

P9-277, Italy, Research

Author: *Cristina Morrone, morrone.cristina@gmail.com*

Co-Authors: *Florinda Artuso*

Gifted children have emotional and behavioral characteristics that could influence their social-emotional competences as well as parenting role. Asynchrony, perfectionism, high sensitivity and school problems (such as underachievement and dropout) are some of the main issues that could influence parenting. Previous researches reported that a supportive family environment plays an important role in promoting children's social-emotional skills and wellbeing (e.g. Olszewski-Kubilius et al., 20Symposia). The aim of this study is to explore the level of parenting stress related to the social and behavioral characteristics of gifted children. The study includes 60 Italian gifted children aged 6-10 years and their parents. All parents were administered Parenting Stress Index-Short Form (PSI-SF; Abidin, 1995) and School Age Child Behavior Checklist (CBCL; Achenbach et al., 2001). Results reveal that m17s (28%) and fathers (23%) reach clinical levels of parenting stress. Stress is mainly related to the dimension of Difficult Child, without any statistical differences between m17s and fathers ($\chi^2(1, N = 120) = 1.64, p=.27$). The dimension of Difficult Child is weakly positively correlated with internalizing problems ($r(120) = .29, p=.001$) and strongly positively correlated with externalizing problems ($r(120) = .47, p$

Parents'™ Views on Education Programs for Gifted Students and Their Expectations from EPTS

P9-350, Turkey, Research

Author: *Sule Demirel Gurbuz, suledemirel@gmail.com*

Co-Authors: *Emine Ozturk*

Parents' involvement in education process is very crucial in terms of meeting children's character and academic developments needs. Collaboration with parents of gifted children who have different development needs from their peers and education institutions is critical importance for supporting their needs. Parents' contribution to this process like sharing their expectations and evaluating programs are useful for reforming programs towards existing needs and designing new programs. In this study, gifted parents' (whose children are 5th and 6th grade had started EPTS in 2015) expectations and their feelings when their children accepted to EPTS are examined. For data collection, expectation form which includes open ended questions was used. 45 parents participated in this study. The datas obtained were analyzed with descriptive statistics. According to the results, developing their children's existing potential, expanding knowledge in quantitative courses and contribute to their children's happiness are the highest frequency in their statements.

Educating Young Gifted Children in a Diverse Culture

P12-273, USA, Research

Author: *Pamela Clinkenbeard, clinkenp@uww.edu*

Co-Authors:

PROBLEM: early childhood educators around the world receive training in special education, but many are not exposed to gifted education. PURPOSE: to assess background experiences and interests of U.S. early childhood educators re: preschool/primary age (3-7 years) gifted children, and to gather impressions of that data from focus groups of educators and university faculty. METHODS: Questions on a mixed-methods survey emphasized that giftedness is found in diverse cultures and income levels and among English language learners. Surveys were distributed at an early childhood conference. Three focus groups of early childhood education faculty and teachers responded to the survey data. FINDINGS/RESULTS: 170 surveys were returned; respondents indicated moderate confidence meeting the needs of young gifted children, except for children of poverty and English language learners. They wanted to learn more about those topics and also social-emotional needs, classroom activities, and working with parents. Focus groups emphasized different dominant themes. University faculty focused on what might be missing from their curriculum; early childhood educators also focused on cultural stereotypes and parent involvement. CONCLUSION/IMPLICATIONS FOR PRACTICE: EC educators had more interest than knowledge about young gifted children. Faculty worldwide may consider what gifted child information should be included in the curriculum for future child care workers and preschool-primary teachers.



Blind Variation View of Creativity; Scientific Creativity of 6th Graders

P12-324, Turkey, Research

Author: *Bahadır Ayas, bahadirayas@gmail.com*

Co-Authors: *Ercan Opengin Fatih Tokmak*

Many researchers in the area of creativity adopt a two-criterion definition, namely that creativity requires novelty and utility (Runco, 2004; Simonton, 2000). Utility ensures that the novelty or originality is not maladaptive. Campbell (1960) proposed blind variation and selective-retention model of creativity in which quality (utility) is a probabilistic consequence of quantity. The more ideas are produced by an individual creator (an inductive, trial and error, fluency of ideas), the higher are the odds and some of will survive.

Much of the best support for blind variation creativity comes from a somewhat questionable source, namely, the introspective reports of eminent creators (Simonton, 1999). Research on both the scientific creativity of school age children and blind variation view of creativity within this sample are limited. The purpose of this study is to investigate the blind variation view of scientific creativity in a school-age population.

306 sixth graders were the participants of the study. The data was collected by Creative Scientific Ability Test (C-SAT) (Ayas and Sak, 2008) which is a domain specific divergent production test. Fluency, flexibility, originality, creativity quotient and odd-response scores were used for statistical analyzes.

From the first findings high correlation coefficients were found between fluency, originality and CQ that can be interpreted as the confound.

Development of Pedagogy for Prodigies: Study on Early Childhood Specific Music Education for Brilliant Children through Harmony

P13-224, Mongolia, Research

Author: *Tsendjav Delgermaa, decko_symposia000@yahoo.com*

Co-Authors:

The objective of the education program was to develop the potential creativity of the gifted preschoolers of music, so I conducted the "Harmony Feeling" class through singing and playing the piano in the divisions of arrangement, composition, and improvisation: the elements of creativity. The education program procedure required selecting 10 gifted preschoolers of music by contacting 871 kindergartens and Internet websites, and conducting the "Harmony Feeling" class for 6 months. To verify the effect, I conducted the standard procedures before and after the study.

We carried out 'the feeling of harmony' class a total 24 times. The results of harmony class are as follows:

First, young musically gifted children arranged their favorite songs by piano through harmony.

Second, they experienced the music they are thinking (composition) based on harmony education.

Third, they came to approach the piano naturally and could play impromptu like looking for the sound.

Fourth, when they met the harmony through singing, they tried to look for their sound more correctly and could distinguish the difference of sound well.

Fifth, they could play the piano and sing a song at the same time.

Sixth, the representation of music was developed which was shown as the gesture or the concentrating attitude. [Refer to 18th session and 24th session].

According to the above conclusion, we obtained the fact that the younger children can accept the 'harmony' and develop this by growing.

Release the Kids: Program of Development of Kids and Young Gifted/ Talented

P13-306, Brazil, Research

Author: *Guilherme Henry Prista, rosamprista@gmail.com*

Co-Authors: *Rosa Maria Prista*

We have witnessed an impoverishment of gifted children and young people the Brazilian daily it deserves the deep reflection because we have denied to children and young people the opportunity of the exercise of imagination, creativity, and placements front the world autonomously. The religious movements and traditional education by businessman are conductive linear thinking, reductionist and provocative of many disturbances in the evolution of these young people. CEC- Child Study Center is a particular institution that there is for thirty-two years has been working on a program called "Free the Children" which aims to mediate systemic actions that create links between adult actions and those gifted people allowing the dialectical development of motor skills-psyche-cognition.

The school daily activities are founded in a Cartesian paradigm that does not allow the formation of educational projects where the desire of the subject are integrative actions. But in an17 sense the banking education fragments the subject's ability to articulate their knowledge with the knowledge of the world. The result is hyperactive children with various behavioral and psychic disorders who seek the Child Study Center for treatment.

The program of development brings together young people 4-18 years in various groups where planetary citizenship is the focus of attention, creating Trans disciplinary projects and focused to a social intervention. This program already helped two thousand, eight h



The 6th Language of Love

P13-359, New Zealand, Practical Experience

Author: Lynn Berresford, lynnberresford@indigo.org.nz

Co-Authors:

What is the 6th Language of Love?

In 1995 Dr Gary Chapman published his 1st book "The Five Love Languages". He is the author of many more books but this one changed the way I connected with my husband, family and all the children, teenagers and adults I have worked with in the last 20 years.

Dr Gary Chapman outlines 5 ways to express and experience love. It has been my privilege to discover a 6th language of love while working with the gifted and talented.

What does a gifted child want you to do most? They want you to listen to what they know and are discovering. They also want you to answer their questions. Gifted and talented children almost come into this world asking 'why'. They want to be given knowledge and they don't want to be put off with 'just a minute dear' or 'why don't you look it up'.

Lets explore the importance of giving and receiving knowledge is for our Gifted and Talented Children.

A Literature Review on the Play and Toys Preferences of Gifted Children

P13-477, Turkey, Research

Author: Hatice Kübra Sözel, kubrasozel@hotmail.com

Co-Authors: Emine O-zturk O-mer Faruk Tamul Fatih Tomak

Plays and toys are very crucial in terms of children's cognitive development. Gifted children's plays are generally advanced and their play patterns resemble children who are older and have average intelligence (Terman, 1926). The purpose of this study is to investigate the differences in gifted children's preferences of toys and plays. For that purpose, books, book chapters and articles published between 1930- 2015 are examined in main databases of gifted education. Play, toys, gifted girl, gifted boy, talented, gender, toys preferences, play preferences are the keywords of this research. To have an abstract , extended summary with enough information or full text available are our article inclusion criteria. According to first results, some differences were observed between gifted and non-gifted students regarding age group, gender, IQ, types of play and toys preferences. Whereas some research supports the same results, some of them are conflicting. Additionally, it's remarkable that existing studies about gifted students' preferences of toys and plays are usually descriptive. As implication for practice, gifted children's parents' preferences of toys and plays can be investigate. Moreover, new researches should be made with different methods.

A Study on Gifted Students with Autism Spectrum Disorder through the RTI Model: The Adjustment Strategy for Identification and Assessment of Strength and Disadvantage

P15-101, Taiwan, ROC, Research

Author: Hsiao Lan Chau, tsousl@gmail.com

Co-Authors:

This study, based upon the Response to Intervention (RTI) model, conducted literature analysis and adopted focal group method, so as to discuss the combined assessment tools for analyzing the strength and disadvantage of gifted student with autism spectrum disorder (GASD), as well as facilitate the discovery, identification, and counselling of dual exceptional students. The members of the focal group include senior scholars, doctors, occupational therapists, and psychological-assessment teachers in gifted education or autism field, totaling 15 people. The heterogeneous and homogeneous focal groups were run to each 17 for 9 times. Study results: (1) the combined assessment tools include five aspects: cognitive capability, advantageous subject, learning style and characteristic, interpersonal communication and emotional management, and 17 talents, which were put into three stages according to the RTI model; 33 tools and their strategies for flexible adjustment were proposed; (2) by applying RTI concept, respectively design intervention service and provide different placements for the three types of GASD: confirmed autistic students who might be gifted, confirmed gifted students who might be autistic, and unconfirmed students who might be GASD: (a) cases which meet the legal identification standards are provided with special education and are reported to the special education system; (b) cases with actual needs and merely meet the standards will not be reported, yet are provided with project for advantage development and disadvantage compensation. The diverse comprehensive data acquired from the tools for assessing strength and disadvantages are conducive to teachers' planning of more suitable intervention program.

GLD (Gifted with Learning Disability) in Australia

P15-471, Australia, Research

Author: Catherine Wormald, cwormald@uow.edu.au

Co-Authors:

Gifted students with learning disabilities do exist. Unfortunately, these students are often misunderstood and unrecognised. Described variously as twice exceptional, double labelled or gifted with learning disabilities (GLD) the challenge for teachers is to identify these students so they can implement strategies to help them achieve. This research examines what knowledge and understanding teachers may have of these students, with the aim of developing an identification process for use in Australian classrooms.

Mixed methods were used in this project, with the research conducted in two phases. In Phase 1 teachers from primary and secondary schools were surveyed and interviewed in order to understand teacher's attitudes to and knowledge of GLD stu-



dents. Of the teachers surveyed, 11 were subsequently interviewed to expand and clarify the information gathered from the surveys. In Phase 2 a multiple case study approach was employed. Participants in the case studies were students who had been identified as gifted with a learning disability and their parents/caregivers.

The results indicated that teachers have little understanding of GLD students but were willing to learn about and identify these students in order to provide appropriate educational programs. The case studies indicated a substantial cost, both in financial and emotional terms, to the students and their families as they learn to cope with the contradiction of high ability coupled with learning disabilities. For twice exceptional students to be recognised in Australia and have their educational, social and emotional needs met an identification process must be developed that can be implemented and understood by teachers, parents and other relevant professional groups.

Gifted Student and Underachievers: Prevalence, Characteristics, Preferences, Interests and Learning Styles

P16-230, Brazil, Research

Author: *Vanessa Terezinha Alves Tentes, psivan@terra.com.br*

Co-Authors:

The focus of this study was to examine the underachievement phenomenon in gifted students, defined as the discrepancy between the potential (ability) and the performance, particularly in the school context. The purposes were to identify the prevalence of the low performance condition among 96 students who attended a specialized educational service for the gifted, as well as to describe the profile of gifted (n=53) and gifted underachiever students (n=43) with respect to demographic variables, abilities, preferences, interests, motivation, personal characteristics, interpersonal relationships, academic performance, and learning styles. A set of instruments, such as analysis of documents, demographic questionnaire, and scales of characteristics, interests and learning styles were used to collect the data. The results indicated that there are underachievers among gifted students and that giftedness is characterized by heterogeneous personal and school characteristics.

Analysis on Light Concept Modeling in Gifted Students with Spatial Strengths and Verbal Weaknesses

P16-247, South Korea, Practical Experience

Author: *Yeon Su Jung, asteroid0928@hanmail.net*

Co-Authors: *Jung Bog Kim*

The purpose of this study is to analyze understanding differences of physics concept between students who are spatial strengths but verbal weaknesses and students who are verbal strengths but spatial weaknesses. The participants were ninety 9th grade students in middle school, and they were asked to conduct two kinds of tests, spatial visualization and verbal ability. We taught the light concept about pinhole camera for 2 hours, and analyzed the changes of pre-post concept using concept test.

We selected and interviewed 4 students with spatial strengths and verbal weaknesses and 4 students with verbal strengths and spatial weaknesses based on spatial visualization test and verbal ability test.

The students showed differences in the modeling processes about light concept. Students with spatial strengths and verbal weaknesses understood the concept of light and made scientific model better than students with verbal strengths and spatial weaknesses. We have found needs selecting students with spatial strengths and verbal weaknesses for gifted program and a appropriate instructional method for teaching them.

Construction of Meanings Related to Giftedness in the Circumstances of Changed Learning Approach

P17-340, Estonia, Research

Author: *Halliki Põlta, halliki.polda@gmail.com*

Co-Authors: *Katrin Aava*

The aim of the study is to clarify the perceptions of the key persons of Estonian education system about giftedness in the context of changed learning approach.

The study is based on the new education strategy of Estonia (ELLS), which outlines that the valuation and noticing of different types of giftedness of learners has still not become an inseparable part of the learning process.

The study is framed by theories which handle giftedness as a social construct (e.g., Borland 1997) and the idea of critical approach to society (Fairclough 2001), which allows to highlight the social meanings of the interviewees that are expressed through their linguistic choices.

The research questions are:

- 1) What are the understandings of focus groups about giftedness in the context of the present education system?
- 2) What meanings related to giftedness are constructed in the circumstances of changed learning approach?

The focus groups of the study includes the teachers, lecturers, scientists, heads of schools and education officials. The material is collected using semi-structured interviews of focus groups and analysed with the critical discourse analysis (Fairclough 2001).

The results indicate that giftedness is rather handled as the system of personal characteristics and expectations than a developmental process. According to the dominating understanding of focus groups, giftedness is the characteristic of a person to think in a non-typical and independent manner and those aspects are emphasised as the conditions that support the learning and development of gifted learners.



Gifted and Talented International Journal

CALL ^{FOR} SUBMISSIONS

Gifted and Talented International (GTI) is the international, refereed journal of the World Council for Gifted and Talented Children. This journal is devoted to publishing original research, theoretical studies, review papers or accounts of practice that contribute to our understanding and promotion of giftedness, talent, creativity, and optimal development of children, adolescents, and adults.

Its purpose is to share current theory, research, and practice in gifted education with its audience of international educators, scholars, researchers, and parents. GTI is usually published twice a year, but in this transition year of 2015, it was decided with the new editorial team that we would focus on one Journal to be published in December.

The focus of the next issue to be published is **Gender and Giftedness**.

Editors of this Special Edition: **Barbara Kerr**, (University of Kansas, USA) and **Leonie Kronborg**, (Monash University, Australia) with the new editing team for 2015-2017 being **Megan Nicpon Foley** (University of Iowa, USA), **June Maker** (University of Arizona, USA), **Nielsen Pereira** (Purdue University, USA), **Franzis Preckel** (University of Trier, Germany) and **Ann Robinson** (University of Arkansas, USA).

Refer to www.world-gifted.org/Publications for submission details.

Please email manuscript(s) to:

Dr. Leonie Kronborg

Leonie.Kronborg@monash.edu

GTI



HISTORY AT A GLANCE

THE WORLD CONFERENCE

| NO | CITY | YEAR | PRESIDENT OF THE WCGTC |
|----|---------------|------|------------------------------|
| 1 | London | 1975 | Dan Bitan |
| 2 | San Francisco | 1977 | Iraj Broomand / Dorothy Sisk |
| 3 | Jerusalem | 1979 | Henry Collis |
| 4 | Montreal | 1981 | James Gallagher |
| 5 | Manila | 1983 | James Gallagher |
| 6 | Hamburg | 1985 | A. Harry Passow |
| 7 | Salt Lake | 1987 | A. Harry Passow |
| 8 | Sydney | 1989 | Norah Maier |
| 9 | La Hague | 1991 | Norah Maier |
| 10 | Toronto | 1993 | Wu-Tien Wu |
| 11 | Hong Kong | 1995 | Wu-Tien Wu |
| 12 | Seattle | 1997 | Barbara Clark |
| 13 | Istanbul | 1999 | Barbara Clark |
| 14 | Barcelona | 2001 | Klaus Urban |
| 15 | Adelaide | 2003 | Klaus Urban |
| 16 | New Orleans | 2005 | Den-Mo Tsai |
| 17 | Warwick | 2007 | Den-Mo Tsai |
| 18 | Vancouver | 2009 | Taisir Subhi Yamin |
| 19 | Prague | 2011 | Taisir Subhi Yamin |
| 20 | Louisville | 2013 | Leslie S. Graves |
| 21 | Odense | 2015 | Leslie S. Graves |

CURRENT & FORMER PRESIDENTS:

| | | | |
|--------------------|-----------------|-----------------|-------------|
| Leslie S. Graves | (2013- Present) | Wu-Tien Wu | (1993-1997) |
| Taisir Subhi Yamin | (2009-2013) | Norah Maier | (1989-1993) |
| Den-Mo Tsai | (2005-2009) | A. Harry Passow | (1985-1989) |
| Klaus Urban | (2001-2005) | James Gallagher | (1981-1985) |
| Barbara Clark | (1997-2001) | | |

The World Council was officially incorporated and registered in the state of Delaware as a non-profit organization on March 30, 1976. The officers at the time were President Dan Bitan, Vice-President Henry Collis, Executive Vice-President Alexis DuPont DeBie, joint Secretaries Dorothy Sisk and Elizabeth Neuman, and Treasurer Bob Swain.

Bob Swain, from California, had proposed that San Francisco be considered as the site for the Second World Conference, and it was held there in 1977. Representation in the new seven-member executive committee expanded to: President Iraj Broomand, Vice-President Dorothy Sisk, and members Marie Schmidt, Levcho Zdravchev, Warren Lett, Henry Collis, and Dan Bitan. In 1978, Vice-President Dorothy Sisk assumed the presidency, according to the World Council constitution, until Henry Collis was elected as President at the Jerusalem conference in 1979. He held the post until 1981.

Executive Committee (2011-2013)

| | | | |
|-----------------|--------------------|---------|------------------|
| President: | Taisir Subhi Yamin | Member: | Ümit Davasligil |
| Vice President: | Ken McCluskey | Member: | Leonie Kronborg |
| Secretary: | Klaus K. Urban | Member: | Leslie S. Graves |
| Treasurer: | Julia Link Roberts | | |

Executive Committee (2013-2015)

| | | | |
|-----------------|--------------------|---------|------------------------|
| President: | Leslie S. Graves | Member: | Ümit Davasligil |
| Vice President: | Ken McCluskey | Member: | Leonie Kronborg |
| Secretary: | Humphrey Oborah | Member: | Denise de Souza Fleith |
| Treasurer: | Julia Link Roberts | | |

WCGTC Delegates



Argentina - Maria del Carmen Maggio
Australia - Susan Knopfmacher, Toni Meath, Susan Prior, Michelle Bannister-Tyrell
Austria - Claudia Resch, Mag. Helga Pfeifer, Kornelia Tischler, Johanna Stahl
Bahrain - Jihan Alumran
Belgium - Stijn Smeets, Carl D'Hondt
Brazil - Eunice Maria Lima Soriano de Alencar, Maria Lucia Sabatella
Canada - Kevin Lamoureux, Juss Kaur Magon, Adrienne Sauder
China - Jiannong Shi, Hongqi Chu, Juncheng Wang, Ning Chen
Denmark - Ole Kyed, Tina Refning Larsen, Susanne Hoff-Clausen, Poul Nissen
Ecuador - Fanny Alencastro
England & Wales - Ferial Mansour, Johanna M. Raffan, Roger Silk
Estonia - Viire Sepp
France - Monique Binda, Jean-Christian Brunault, Jean Charles Terrassier
Germany - Christian Fischer, Albert Ziegler, Roya Klinger
Greece - Sofia Theodoridou
Hong Kong - Mantak Yuen, Pui-Tin Chan, Ricci Fong, Helen Siu-yin Ku-Yu
India - Krishna Maitra, Prodipta Hore
Iran - Marzieh Amini
Ireland - Anna Giblin, Joyce Senior
Israel - Hanna David, Hava Vidergor, Shoshana Rosemarin
Jamaica - Vivienne DeOkoro
Japan - Nobutaka Matsumura
Jordan - Janette Wakileh
Korea - Doehee Ahn, Kyunghwa Lee
Lebanon - Anies Al-Hroub
Mexico - Andrew Almazan, Dalynn Somuano, Zayda Acceyo Zepeda, Araceli Robles
Netherlands - Marieke Schuurman-van der Heijden, Hans Van Elten
New Zealand - Rose Blackett, Tracy Riley
Norway - Jan Terje Bakler
Peru - Sheyla Blumen, Manuel E. Rodriguez
Poland - Cezary Gluszek, Malgorzata Sierszenska-Leraczyk
Romania - Ana Bezem
Saudi Arabia - Abdullah Al-Jughaiman
Scotland - Margaret Sutherland, Niamh Stack
Singapore - Bee Geok Tan, Liang See Tan
Slovakia - Zuzana Jurkovicova
Slovenia - Mojca Juriševič
Spain - Yolanda Benito, Flacio Castiglione, Juan Antonio Alonso, Leopoldo Carreras
Switzerland - Jean-Jacques Bertschi, Victor Mueller-Oppliger, Salome Mueller-Oppliger, Marion Rogalla
Taiwan - Ching-chih Kuo, Wu-Tien Wu
Thailand - Usanee Anuruthwong, Selena Gallagher
Trinidad & Tobago - Nubia Williams
Turkey - Serap Emir, Ayça (Köksal) Konik, Nihat Gürel Kahveci, Marilena Z. Leana Taşçılar
Ukraine - Oleksandr Butov, Maksym Galchenko, Nataliia Polikhun
Uruguay - Karen Bendelman
USA - Wendy Behrens, Joyce Miller, Sylvia Rimm, Connie Phelps
Vietnam - Anh Bui, Minh Kim



WCGTC Affiliates

- The African Federation for the Gifted and Talented (AFGT)
- Asia-Pacific Federation on Giftedness
- ECHA (European Council for High Ability)
- Eurotalent (France)
- Ibero-American Federation
- Affiliated Organizations
- Al Alfi Foundation, Egypt
- Association of Hungarian Talent Support Organizations
- Association of Talent and Giftedness (STaN – Czech Republic)
- Austrian Research and Support Center for the Gifted and Talented
- The Carol Martin Gatton Academy of Mathematics and Science in Kentucky
- The Center for Gifted Studies at Western Kentucky University
- Centro de Atención al Talento (CEDAT), Mexico
- Council for Gifted (Russia)
- Dan Voiculescu Foundation for Romania's Development
- Deutsche Gesellschaft für das hochbegabte Kind e.V. (DGhK)
- Foundation of International Education Poland
- Future Problem Solving Program International, Inc.
- Gifted Children Denmark
- The Hong Kong Academy for Gifted Education
- International Gifted Education Teacher-Development Network (IGET-Network)
- Institute of Gifted Child Ukraine
- IRSCA Gifted Education Association
- MENSA Education & Research Foundation
- Minor Academy of Sciences Ukraine
- National Association for Able Children in Education (NACE-UK)
- National Association for Gifted Children (NAGC-USA)
- National Beta Club
- Philippine Center for Gifted Education, Inc., Philippines
- Potential Plus UK
- School Talenta Zurich
- Scottish Network for Able Pupils (SNAP)
- Sistema para el Desarrollo Integral de la Familia DIF CDMX (Mexico City)
- STEP-NET (Italy)
- The University of Winnipeg
- The Wisconsin Center for Gifted Learners



Social media



<https://www.facebook.com/wcgtc>

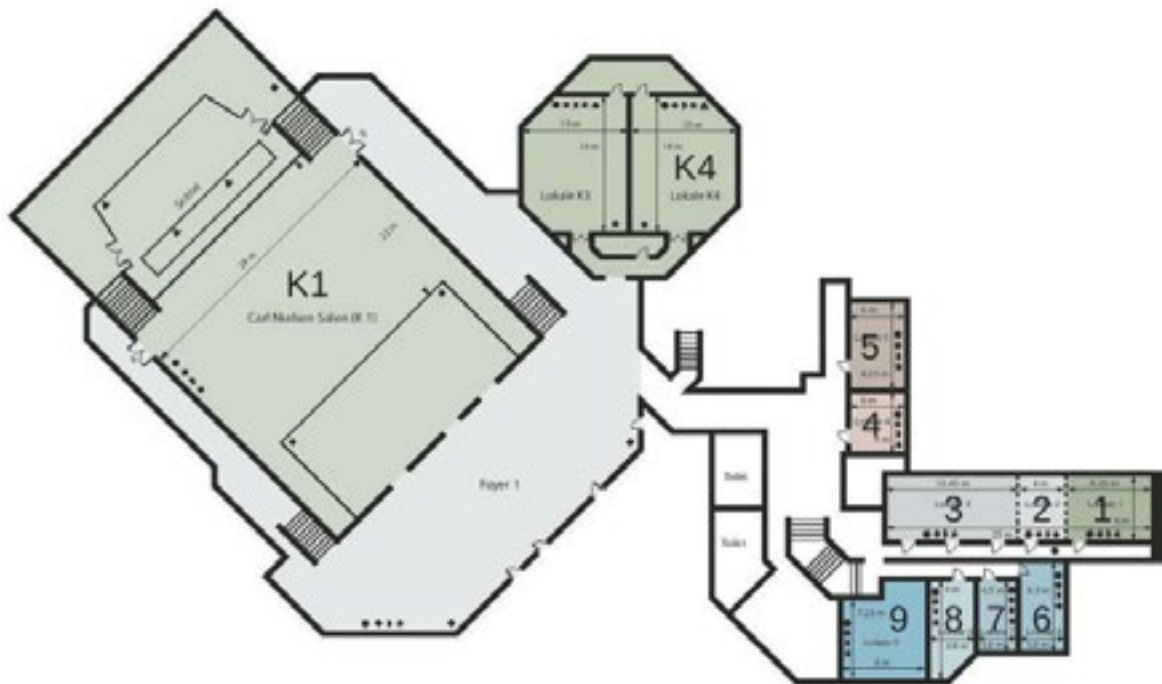


#WCGTC15 @WCGTCWC2015

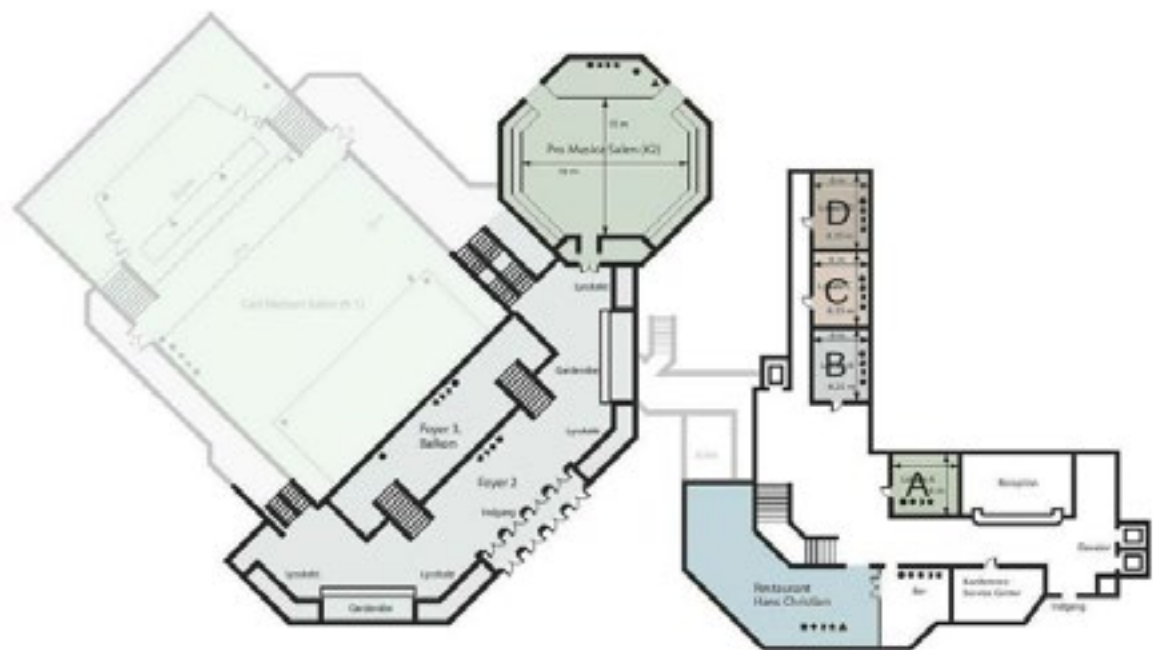


Floor Plan

Floor plan 1st floor



Floor plan 2nd floor



Lokale = Room



Exhibitors

Beta Club

The Center for Gifted Studies

Centro de Atención al Talento

The European Council for High Ability

Future Problem Solving Program International, Inc.

Pearson

WCGTC 22nd Biennial World Conference

World Council for Gifted and Talented Children



Sponsors:



Non-profit organisation with focus on business tourism and knowledge growth in Southern Denmark



Profesional Conference Organiser – tourism in Odense, on Fyn and in Denmark



Odense Municipality
Mrs. Jane Jegind will be our hosts for the welcome reception.



The Funen Opera will perform at the conference.



The Royal Ballet School in Odense will perform at the conference.



Your professional supplier and partner in the ERP system Microsoft Dynamics AX.



ICIE is committed to the development of all learners as productive world citizens and leaders for the future.



National Association for Gifted Children, USA
Supporting the needs of high potential learners



Chr. Nevado
Writer and illustrator



Domain and email host
Social media consultancy







Follow the Sun

In November 2015 the National Association for Gifted Children (NAGC) hosts the largest annual convention devoted to gifted and talented learners. Classroom teachers, gifted/talented coordinators, school administrators, researchers, parents, college and university faculty, and more, will converge in Phoenix, Arizona (USA), November 12-15, for the 62nd Annual NAGC Convention.

In Phoenix, home of the Valley of the Sun, we will celebrate the difference that our diversity makes on the lives of children and adults by casting a wide net and celebrating Everything Gifted Under the Sun!

General Session Keynotes Feature:

Thomas Schumacher

*Producer and President
Disney Theatrical*

Jaime Casap

*Chief Education Evangelist
Google, Inc.*

Joshua Davis

*Author of Spare Parts: Four Undocumented Teenagers, One Ugly Robot, and the Battle for the American Dream (Farrar Strauss Giroux, 2014) with Cristian Arcega, Lorenzo Santillan, and Luis Aranda
Former Carl Hayden High School students*

Joe Hudy

Gifted inventor/DIY engineer and active member of the Maker movement with

Jason Babler

Creative Director of Make Magazine and Maker Media

.....

NAGC 62nd Annual Convention and Exhibition



**Everything Gifted
Under the Sun**

November 12-15, 2015

Phoenix ✨ Arizona

.....

Early Bird and Group Discounts
Through September 21

Register Now

www.nagc.org/2015convention

World Gifted Conference Committee Denmark

In the wake of the WCGTC World Conference 2015 in Odense, Denmark, World Gifted Conference Committee Denmark will fathom and facilitate the immense amount of information presented and gathered at the conference. WGCCD will establish a knowledge center on Gifted Education and the well-being of families and children with high abilities.

In the near future WGCCD will change its name into a more appropriate name that embraces the ideas and content of the center.

The center will focus on nurturing potential and inspire excellence through information, education and networking for professionals, parents, educators and children.

Vision

Turning Research to Practice

- Raise awareness about High Ability and Gifted Education at all levels from children to policy makers
- Meet potential in children from early age to young adult+
- Develop training materials
- Educate and post educate staff
- Create and hold conferences and events for professionals, parents and others interested in High Ability and Gifted Education

Mission

The mission will be to empower and serve the gifted community through exemplary leadership in programs, research, and advocacy.

- Identify high ability and gifted learners
- Increase awareness and provide assessment, counseling, and consultation services
- Develop curriculum resources and materials
- Facilitate the professional development of educators
- Disseminate information through conferences and publications

The center will support the development of gifted education programs and cooperate with organizations around the world.

We hope you have enjoyed our first two events: Parent Day and the World Conference 2015, and we invite you to follow and support the creation of the knowledge center.



World Gifted Conference Committee Denmark

www.wgccd.dk