



14th International ECHA Conference

Re:Thinking Giftedness: Giftedness in the Digital Age

September 17–20, 2014

Programme and Abstract Book

European Council for High Ability (ECHA)
University of Ljubljana, Faculty of Education
MiB, d. o. o.



www.echa2014.info

14th International ECHA Conference

Re:Thinking Giftedness: Giftedness in the Digital Age

September 17–20, 2014

Ljubljana, Slovenia

Programme and Abstract Book

Editor:
Mojca Juriševič

Organised by:
European Council for High Ability (ECHA)
University of Ljubljana, Faculty of Education
MiB, d. o. o.

Ljubljana 2014

14th International ECHA Conference

Re:Thinking Giftedness: Giftedness in the Digital Age

September 17–20, 2014

Ljubljana, Slovenia

Organised by: European Council for High Ability (ECHA)
University of Ljubljana, Faculty of Education
MiB, d. o. o.

Editor: Mojca Juriševič

Publisher: University of Ljubljana, Faculty of Education

For the publisher: Janez Krek, dean

Technical editors: Polona Gradišek and Mira Metljak

Design: Breda Pivko and MiB d. o. o.

Print: Tiskarna Littera picta d. o. o., Ljubljana

Copies: 380

*Authors are responsible for content, technical,
and linguistic correctness of their abstracts.*

© University of Ljubljana, Faculty of Education

Photo on the cover: D. Wedam

CIP - Kataložni zapis o publikaciji
Narodna in univerzitetna knjižnica, Ljubljana

159.924-053.2(082)(0.034.2)

EUROPEAN Council for High Ability. International conference (14 ; 2014 ; Ljubljana)
Rethinking giftedness [Elektronski vir] : giftedness in the digital age : programme and
abstract book / 14th International ECHA Conference, September 17 - 20, 2014 Ljubljana,
Slovenia ; organised by European Council for High Ability (ECHA) [and] University of
Ljubljana, Faculty of Education [and] MiB ; editor Mojca Juriševič. - El. knjiga.
- Ljubljana : Faculty of Education, 2014

Način dostopa (URL): https://www.echa2014.info/14_ECHA_programme_and_abstract_book.pdf

ISBN 978-961-253-159-1 (pdf)
1. Gl. stv. nasl. 2. Juriševič, Mojca 3. Faculty of Education (Ljubljana) 4. MiB (Ljubljana)
275209984



University of Ljubljana
Faculty of Education



Welcome to the 14th ECHA Conference Re:Thinking Giftedness: Giftedness in the Digital Age

It is my great pleasure to welcome all ECHA Members and our other distinguished guests at the 14th ECHA Conference! This abstract book shows the high quality traditions of ECHA, which was and is a major hallmark of the organization in the last 25 years. Additionally, the abstracts show the multiple colors of European talent support both from the scientific point of view and in the practical applications.

The high quality of the abstracts gives a glance to the high quality and treasures of the work they are about. All these lines warn us that we need to learn a lot more from each other than before. The recent proposal to establish a European Talent Support Network (which will also be discussed and refined in this Conference) is just about to help this mutual learning process. The establishment of the European Talent Support Network would help sharing of information and knowledge, would give and make accessible additional resources, would connect partners, who worked separately before, would extend and multiply trustful, motivating environments, and would do all this by a flexible, sustainable, non-bureaucratic, not over-controlling, non-hierarchical manner, concentrating on indirect and direct help of the highly able.

I am sure that this 14th ECHA Conference will make ECHA even stronger and happier. My vision is to make this enrichment of ECHA a self-maintaining process, where young talents of our days will serve as teachers, mentors, role models of the future talented generations and will strengthen ECHA maintaining its high standards and multi-coloured traditions. Ultimately, we need to build a talent-friendly continent here in Europe. It is my great pleasure to serve this process – together with the treasures of expertise of fellow ECHA members.

Finally, Do not forget, our 15th ECHA Conference will be close to Ljubljana, in Vienna between the 2nd and 5th March 2016! We will be very happy to see you there, too! And in between: let me wish you a very fruitful talent support work, with many joys and creative moments! Last, but not least: enjoy networking, and never forget: networking is about sharing: giving and receiving.



Prof. Peter Csermely
The president of ECHA
(Photo: Andras Mayer)

Scientific Programme Committee

Grozdana Gojkov, Pre-school Teacher Training College "Mihailo Palov", Vršac, Serbia
Lianne Hoogeveen, Center for the Study of Giftedness, Radboud University Nijmegen, Netherlands
Norbert Jaušovec, Faculty of Arts, University of Maribor, Slovenia
Mojca Jurišević, Faculty of Education, University of Ljubljana, Slovenia (*Chair*)
Margaret Sutherland, School of Education, University of Glasgow, Scotland
Eva Vondrakova, Association for Talent and Giftedness, Prague, Czech Republic
Drago Žagar, Faculty of Arts, University of Ljubljana, Slovenia
Taisir Subhi Yamin, The International Centre for Innovation in Education, Ulm, Germany

ECHA Committee

Peter Csermely, Department of Medical Chemistry, Semmelweis University, Budapest, Hungary (*President*)
Christian Fischer, International Centre for the Study of Giftedness ICBF, Universität Münster, Germany (*Vice-President*)
Lianne Hoogeveen, Centre for the Study of Giftedness (CBO), Radboud University Nijmegen, Netherlands (*ECHA Secretariat*)
Tessa Kieboom, CBO Antwerpen bvba, Belgium (*Treasurer*)
Roya Klingner, Begabungszentrum Bayern GbR, Germany (*General Committee member: September 2012 – April 2014*)
Victor Müller-Opliger, Fachhochschule Nordwestschweiz, Switzerland (*General Committee member*)
Anna Maria Roncoroni, Italian Association for Gifted and Talented students, Italy (*General Committee member*)
Margaret Sutherland, School of Education, University of Glasgow, Scotland (*General Committee member*)

Local Organisational Committee

Faculty of Education, University of Ljubljana

Polona Gradišek
Mojca Jurišević
Janez Krek
Mira Metljak
Irena Nančovska Šerbec
Karmen Pižorn
Igor Repac
Gregor Torkar
Janez Vogrinc
Matej Zapušek

Student volunteers: Katarina Ačimer, Maja Jakob, Tara Seme, Maša Virk, and Neja Zupanc
Students from Department of Mathematics and Computing (technical support): Klauđija Humar, Tajda Štrukelj, Gorazd Vasiljevič, Davor Zupan, and Lucija Žnidarič

MiB, d. o. o.

Andrej Pajtak Škraba
Borut Seničar
Maruška Željeznov Seničar

Contents

Conference Venue	6
Social Events	8
ECHA 2014 Statistics	10
Timetable	11
Keynote Lectures	16
Invited Lectures	22
Session Guidelines	31
Overview	
Thursday, September 18	32
Friday, September 19	48
Saturday, September 20	61
Abstracts	
Thursday, September 18	65
Friday, September 19	122
Saturday, September 20	169
Author Index	183
Upcoming Conferences	190

Conference venue

The 14th International ECHA Conference will be held at the Four Points by Sheraton Ljubljana Mons hotel, Pot za Brdom 4, Ljubljana, Slovenia.

All symposiums, paper sessions, demonstrations, workshops and poster sessions will be held at the hotel.

Registration desk

The registration desk will be located in the foyer in front of Plečnik 1-2-3. It will be open daily from 08:00 a.m. to 7:00 p.m.

Coffee breaks

During the breaks in the morning and afternoon, there will be coffee, tea, water, soft drinks and snacks provided in the foyer in front of Plečnik 1-2-3. Supplementary drinks and snacks are available at the hotel bar.

Lunch

The restaurant is located in the hotel. Here you can choose from a range of vegetarian and non-vegetarian meals. Opening hours: 12:45 p.m. – 2:00 p.m.

WiFi Internet

Free internet access.

Luggage

There will be a cloak room and luggage area at reception. As we are unable to store luggage overnight, please fetch your luggage before reception closes.

Important contacts

Conference Office:

MiB d. o. o.

Reška ulica 11, 1000 Ljubljana

E-mail: info@echa2014.info

Phone: +386 (0) 41 594 588 (Maruška Željeznov Seničar)

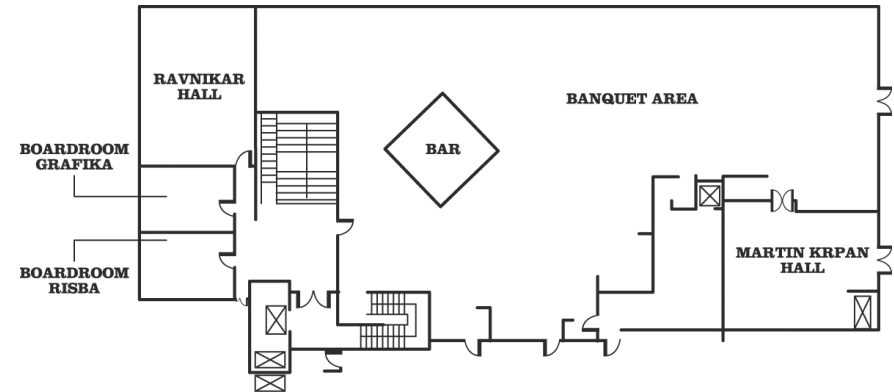
Emergency Call:

112 (Medical Emergency Number)

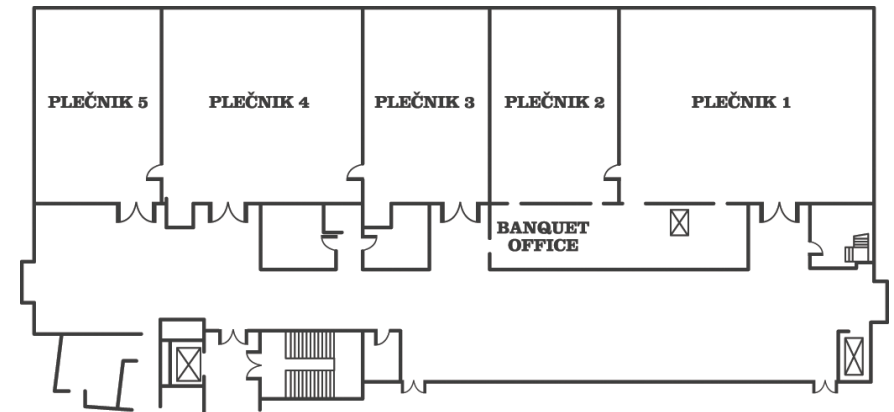
113 (Police Emergency Number)

Hotel Plan

Ground Floor



Floor - 1



Social Events

Welcome Reception – Slovene Night, Wednesday, September 17

6:30 p.m. - Foyer

The Welcome Reception will be held at the conference venue in the foyer. Canapés and welcome drinks will be served.

Book and Wine Evening, Thursday, September 18

The Book and Wine Evening will be held at the Atrium Restaurant at the venue hotel.

Duration: 8:30 p.m. – 10:30 p.m.

Slovene wine and canapés will be served and some recent publications presented in the field of giftedness.

All remaining tickets for the Book and Wine Evening can be purchased at the Welcome Reception (*EUR 22*).

ECHA Gala Dinner, Friday, September 19

Duration: 8:00 p.m. – 12:00 p.m.

The ECHA Gala Dinner will be held at VIA BONA restaurant. A four-course dinner with assorted wines and other drinks will be served.

All remaining tickets for the ECHA Gala Dinner can be purchased at the Welcome Reception (*EUR 60*).

Trips and Sightseeing

Bled – the Pearl of Slovenian Nature, Tuesday, September 16

Meeting point: the venue hotel, the Four Points by Sheraton Ljubljana Mons

Duration: 2:00 p.m. – 4:00 p.m.

All remaining tickets for the trip to Bled can be purchased at the Welcome Reception (*EUR 60*).

Ljubljana Walking Tour, Tuesday, September 16

Meeting point: Ljubljana Tourist Information Centre (TIC), Adamič - Lundrovo nabrežje 2, Ljubljana

Duration: 2:00 p.m. – 4:00 p.m.

All remaining tickets for the Ljubljana Walking Tour can be purchased at the Welcome Reception (*EUR 10*).

Old City Centre Tour and Boat Ride, Wednesday, September 17

Meeting point: Ljubljana Tourist Information Centre (TIC), Adamič - Lundrovo nabrežje 2, Ljubljana

Duration: 11:30 p.m. – 2:00 p.m.

All remaining tickets for the Old City Centre Tour and Boat Ride can be purchased at the Welcome Reception (*EUR 15*).

Ljubljana by Night, Thursday, 18 September

Meeting point: Ljubljana Tourist Information Centre (TIC), Adamič - Lundrovo nabrežje 2, Ljubljana

Duration: 8.30 p.m. – 10:30 p.m.

All remaining tickets for Ljubljana by Night can be purchased at the Welcome Reception (*EUR 10*).

Ljubljana Walking Tour, Saturday, September 20

Meeting point: Ljubljana Tourist Information Centre (TIC), Adamič - Lundrovo nabrežje 2, Ljubljana

Duration: 4:00 p.m. – 6:00 p.m.

All remaining tickets for the Ljubljana Walking Tour can be purchased at the Welcome Reception (*EUR 10*).

Visit to Education Organization, Wednesday, September 17

Meeting point: the venue hotel, the Four Points by Sheraton Ljubljana Mons, Pot za Brdom 4, 1000 Ljubljana

Duration: 10:00 a.m. – 2:00 p.m.

All remaining tickets for the visit to the education organisation can be purchased at the Welcome Reception (*EUR 5*).

Trip to Postojna Cave and the Slovenian Coast, Sunday, September 21

Meeting point: at the venue hotel, the Four Points by Sheraton Ljubljana Mons

Duration: 9:30 a.m. – 9:00 p.m.

All remaining tickets for the Trip to Postojna Cave and the Slovenian Coast can be purchased at the Welcome Reception (*EUR 90*).

ECHA 2014 Statistics

Delegates per country:

Country	Number
Australia	6
Austria	7
Belgium	5
Brazil	3
Chile	2
China	2
Croatia	7
Czech Republic	5
Denmark	1
Estonia	2
Finland	2
France	1
Germany	16
Greece	2
Hungary	6
Ireland	4
Israel	3
Italy	4
Kazakhstan	4
Latvia	1

Σ = 266 delegates & 39 countries

Country	Number
Lebanon	2
Luxembourg	1
Mexico	1
Netherlands	58
New Zealand	1
Norway	3
Peru	1
Russia	3
Serbia	4
Singapore	2
Slovenia	53
Spain	3
Sweden	2
Switzerland	1
Taiwan	2
Thailand	2
Turkey	18
UK	10
USA	16

Communications to be presented:

Type of Communications	Number
Demonstration	7
Invited Lecture	9
Keynote Lecture	5
Paper	114
Poster	30
Symposium	4 (15 presentations)
Workshop	9

Σ = 178 (189) communications

ECHA 2014: Provisional Programme*: Overview			
What, When, Where?	Wednesday, 17 September	Thursday, 18 September	Friday, 19 September
	Reflection on Giftedness in the Digital Age	Possibilities & Challenges of Digital Age for the Gifted	Trends in Research and Theory of Giftedness
8:15 a.m. – 8:45 a.m.		Parallel Sessions 1	Parallel Sessions 4
9:00 a.m. – 10:00 a.m.		Keynote Lecture 2	Keynote Lecture 4
10:00 a.m. – 10:30 a.m.		Coffee break	Coffee break
10:30 a.m. – 12:40 a.m.	Registration	Parallel Sessions 2	Parallel Sessions 5
12:45 a.m. – 1:45 p.m.	Varia - Activities (optional)	Lunch	Lunch
1:45 p.m. – 2:15 p.m.		Poster Session	Poster Session
2:20 p.m. – 3:05 p.m.	3:00 p.m. – 3:30 p.m. Press Conference	Invited Lectures 1 - 3	Invited Lectures 4 - 6
3:05 p.m. – 3:20 p.m.		Break	Coffee break
3:20 p.m. – ...		Parallel Sessions 3	Parallel Sessions 6
4:00 p.m. – 5:00 p.m.	Welcome Ceremony	5:30 p.m. – 6:00 p.m. Coffee break	3:20 p.m. – 5:30 p.m.
5:00 p.m. – 6:00 p.m.		Keynote Lecture 1	Parallel Sessions 7
6:00 p.m. – 6:30 p.m.		Keynote Lecture 3	5:30 p.m. – 7:00 p.m.
6:30 p.m. – 7:00 p.m.	Welcome Reception	ECHA General Assembly	7:45 p.m. – ... Gala dinner
6:30 p.m. – ...			
			Horizons: Gifted Beyond the Digital Age
			Parallel Sessions 8
			Keynote Lecture 5
			Coffee break
			10:30 a.m. – 11:15 a.m. Invited Lectures 7 - 9
			11:30 a.m. – 1:40 p.m. Parallel Sessions 9
			1:40 p.m. – 2:00 p.m. Snack
			2:00 p.m. – 2:45 p.m. Closing Ceremony
			Varia – Activities (optional)

Note: *The conference programme is provisional and may be subject to amendment.

ECHA 2014: Provisional Programme*: **Wednesday, 17 September**
Reflection on Giftedness in the Digital Age

		Registration
10:00 a.m. – 3:45 p.m.	Foyer	Welcome refreshments Information platform & Publishers' presentations
3:00 p.m. – 3:30 p.m.	Ravnikar Hall	Press Conference
4:00 p.m. – 5:00 p.m.	Plečnik 1-2-3	Welcome Ceremony
5:00 p.m. – 6:30 p.m.	Plečnik 1-2-3	Keynote 1 by Joan Freeman and Peter Csermely Moderator: Margaret Sutherland
6:30 p.m. – ...	Foyer	Welcome Reception

Note: *The conference programme is provisional and may be subject to amendment.

ECHA 2014: Provisional Programme*: **Thursday, 18 September**
Possibilities & Challenges of Digital Age for the Gifted

8:15 a.m. – 8:45 a.m.	DEM 1: Plečnik 5	DEM 2: Ravnikar Hall	DEM 3: Martin Krpan Hall
9:00 a.m. – 10:00 a.m.	Keynote Lecture 2 by Albert Ziegler: Plečnik 1-2-3		
10:00 a.m. – 10:30 a.m.	<i>Coffee break: Foyer</i>		
10:30 a.m. – 12:40 a.m.	PAP 1: Plečnik 2-3	PAP 2: Plečnik 4	PAP 3: Plečnik 5
		PAP 4: Ravnikar Hall	PAP 5: Boardroom Risba
			PAP 6: Boardroom Grafika
			WOR 1 (10:30 - 11:30) WOR 2 (11:40 - 12:40) Martin Krpan Hall
12:45 a.m. – 1:45 p.m.	<i>Lunch: Banquet Area (Ground Floor)</i>		
1:45 p.m. – 2:15 p.m.	Poster Session: Foyer		
2:20 p.m. – 3:05 p.m.	Invited Lecture 1 by Sheyla Blumen: Plečnik 1		Invited Lecture 2 by Martin Kubala: Plečnik 2-3
3:05 p.m. – 3:20 p.m.	<i>Break</i>		
3:20 p.m. – 5:30 p.m.	PAP 7: Boardroom Grafika	PAP 8: Plečnik 2-3	PAP 9: Plečnik 4
			PAP 10: Plečnik 5
			PAP 11: Boardroom Risba
			PAP 12: Ravnikar Hall
5:30 p.m. – 6:00 p.m.	<i>Coffee break: Foyer</i>		
6:00 p.m. – 7:00 p.m.	Keynote Lecture 3 by Mihaly Csikszentmihalyi (Webinar): Plečnik 1-2-3		
7:15 p.m. – 8:15 p.m.	ECHA General Assembly: Plečnik 4		
			SYM 1: Plečnik 1
			SYM 2: Plečnik 1

Note: *The conference programme is provisional and may be subject to amendment.

Keynote Lecture 60" (approx: 45-50" lecture & 10-15" discussion); Invited Lecture 45" (approx: 35-40" lecture & 5-10" discussion); SYM: Symposium 130" (approx: 100" presentations & 30" discussion); PAP: Paper session 130" (approx: 15" individual presentation & 5-10" discussion); WOR: Workshop 60"; POS: Poster Session – Active Time – 30"; DEM: Demonstration 30".

ECHA 2014: Provisional Programme*: Friday, 19 September
Trends in Research and Theory of Giftedness

8:15 a.m. – 8:45 a.m.	DEM 4: Ravnikar Hall		DEM 5: Martin Krpan Hall	
9:00 a.m. – 10:00 a.m.	Keynote Lecture 4 by Norbert Jaušovec: Plečnik 1-2-3			
10:00 a.m. – 10:30 a.m.	<i>Coffee break: Foyer</i>			
10:30 a.m. – 12:40 a.m.	PAP 13: Boardroom Grafika	PAP 14: Plečnik 2-3	PAP 15: Plečnik 4	PAP 16: Ravnikar Hall
12:45 a.m. – 1:45 p.m.	<i>Lunch: Banquet Area (Ground Floor)</i>			
1:45 p.m. – 2:15 p.m.	Poster Session: Foyer			
2:20 p.m. – 3:05 p.m.	Invited Lecture 4 by Slavica B. Maksić: Plečnik 1		Invited Lecture 5 by Peter Merrotsy: Plečnik 2-3	
3:05 p.m. – 3:20 p.m.	<i>Coffee break: Foyer</i>			
3:20 p.m. – 5:30 p.m.	PAP 19: Plečnik 2-3	PAP 20: Boardroom Grafika	PAP 21: Plečnik 4	PAP 22: Ravnikar Hall
5:30 p.m. – 7:00 p.m.	PAP 25: Plečnik 1	PAP 26: Plečnik 2-3	Student Session: Martin Krpan Hall	WOR 9 Plečnik 5

Note: *The conference programme is provisional and may be subject to amendment.

Keynote Lecture 60" (approx: 45-50" lecture & 10-15" discussion); Invited Lecture 45" (approx: 35-40" lecture & 5-10" discussion); SYM: Symposium 130" (approx: 100" presentations & 30" discussion); PAP: Paper session 130" (approx: 15" individual presentation & 5-10" discussion); WOR: Workshop 60"; POS: Poster Session – Active Time – 30"; DEM: Demonstration 30".

ECHA 2014: Provisional Programme*: Saturday, 20 September
Horizons: Gifted Beyond the Digital Age

8:15 a.m. – 8:45 a.m.	DEM 6: Ravnikar Hall		DEM 7: Martin Krpan Hall	
9:00 a.m. – 10:00 a.m.	Keynote Lecture 5 by Marta Fulop: Plečnik 1-2-3			
10:00 a.m. – 10:30 a.m.	<i>Coffee break: Foyer</i>			
10:30 a.m. – 11:15 a.m.	Invited Lecture 7 by Lianne Hoogeveen: Plečnik 1		Invited Lecture 8 by Csilla Fuszek: Plečnik 2-3	
11:15 a.m. – 11:30 a.m.	<i>Break</i>			
11:30 a.m. – 1:30 p.m.	PAP 27: Plečnik 5	PAP 28: Ravnikar Hall	PAP 29: Plečnik 2-3	PAP 30: Plečnik 4
1:30 p.m. – 2:00 p.m.	<i>Snack time: Foyer</i>			
2:00 p.m. – 2:45 p.m.	Closing Ceremony: Plečnik 1-2-3			

Note: *The conference programme is provisional and may be subject to amendment.

Keynote Lecture 60" (approx: 45-50" lecture & 10-15" discussion); Invited Lecture 45" (approx: 35-40" lecture & 5-10" discussion); PAP: Paper session 130" (approx: 15" individual presentation & 5-10" discussion); WOR: Workshop 60"; DEM: Demonstration 30".

Keynote Lectures

KEYNOTE LECTURE 1

Time: Wednesday, 17 September: 5:00 p.m. – 6:30 p.m.
Location: Plečník 1-2-3

Discussion on the Past, Present and Future of ECHA

Joan Freeman and Peter Csermely
Moderator: *Margaret Sutherland**

Part I. ECHA: The Early Years

Joan Freeman, Founding President of ECHA
London, United Kingdom
joan@joanfreeman.com

The European Council for High Ability was designed as a dynamic network to exchange information and bring people together. It was aimed at spreading the fruits of research and experience to all. From its registration in Holland in May 1987, expansion was fast and furious.

It was difficult then to communicate with countries in the Soviet Union. Across East and West Europe, where once there had been minimal interaction on high ability, there were now workshops, symposia, little conferences and big conferences – Zurich 1989, Budapest, 1991. Progress was made in setting up student exchanges and an ECHA Consultancy Service.

ECHA was promoted at international meetings, and on the way to becoming an NGO at the Council of Europe. It acted as a pressure group, helping to form administrative policies for the lifelong needs of the highly able. Membership rose rapidly from around the world, so it was divided into working groups.

There was a steady flow of publications, ECHA News, The European Journal of High Ability (now High Ability Studies) and a prize-winning book, *Actualising Talent: A Lifelong Challenge* (Eds. Freeman, Span and Wagner. London: Cassell). The Academic Committee designed and launched the ECHA Advanced Diploma, proudly awarded to our first graduate in London.

By its sixth birthday, ECHA was financially stable and respected around the world for its high standards. This presentation shows how it happened.

Prof. Joan Freeman is a chartered Psychologist with a private practice in London specialising in the potential of young children. Homepage: <http://www.joanfreeman.com/>

* Dr Margaret Sutherland, ECHA General Committee member (2012 – present)
University of Glasgow, Glasgow, Scotland
margaret.sutherland@glasgow.ac.uk

Part II. The Future Development of ECHA

Peter Csermely, Actual President of ECHA
Semmelweis University, Budapest, Hungary
csermelynet@gmail.com

ECHA has three great strengths. The first is its continuously enriched traditions over more than quarter of a century. The second is ECHA's superb quality in many areas related to research and practice with talented people. This high quality is exemplified by its journal, *High Ability Studies*, the most prestigious in the field. The third is ECHA's foundation which draws on the wide diversity of its members' outlooks reflecting the cultural richness of Europe. These three great strengths form our ECHA spirit.

ECHA also had three major weaknesses, as I found when I started my presidency in 2012. The first was the gap between research and practice. For political and geographical reasons, within Europe many local talent support communities were isolated and too often had to waste energy rediscovering the basics themselves. It was clear that provision for the encouragement of talents in Europe needed a much more proactive distribution of scientific evidence and exchange of the best talent support practices. This was related to ECHA's second weakness: although ECHA had been founded as an intensive contact structure among European actors involved in talent support, it had slipped in its direct communication. The third weakness was the domination of the biannual conferences with little positive action between. ECHA cannot only be a "conference-society". Our responsibility is much wider than that and requires on-going high-level of communication through meetings and practical activities.

ECHA's major goals for the coming years are distinct. Most importantly, it has taken the lead in the development of a European Talent Support Network. This includes everyone involved in talent support - politicians, administrators, teachers and learners. The Talent Support Centres currently being set up across Europe are already serving as regional hubs of this growing network, building an interactive structure reaching out beyond the boundaries of each individual country. To be its most effective, ECHA must also grow its membership, and for that, it must be accessible and attract individuals through enriched programmes including its renewed education programme. I am sure that our positive spirit will lead us to an even stronger and happier ECHA in the coming years.

Prof. Peter Csermely is Professor at Semmelweis University, Faculty of Medicine, studying networks and talent support. Homepage: www.petercsermely.linkgroup.hu

KEYNOTE LECTURE 2

Time: Thursday, 18 September: 9:00 a.m. – 10:00 a.m.
Location: Plečnik 1-2-3

Chair: Heidrun Stoeger

An Overdue Step into the Future: Gifted Education Goes Digital

Albert Ziegler
University of Erlangen-Nuremberg, Erlangen, Germany
albert.ziegler@fau.de

Already commencing in the 19th century gifted education has grown into a dignified enterprise. Almost at its outset the main methods had been developed and remained pretty much the same over time: acceleration, enrichment, pull-out programs and various forms of ability grouping. In the first part of the presentation a review is given on the effectiveness of these methods. As it turns out results are not as favorable as hoped for. In the second part of the presentation the methods are analyzed in light of latest findings of the learning sciences and some shortcomings are highlighted. Two promising complementing new methods are proposed that can – at least in part – be combined with the four traditional methods: self-regulated learning and individualized instruction (e.g. mentoring). However, all these methods can only be fully effective when several conditions such as effective feedback and resource orientation are met. But their practical implementation is often difficult or impossible for gifted educators. Fortunately, modern information technology offer fantastic new opportunities and chances. In the last part of the presentation a seven-step action plan along with some best-practice examples is introduced for all those who want to enter the digital age in gifted education.

Prof. Albert Ziegler is Chair Professor of Educational Psychology at University of Erlangen-Nuremberg, Germany. Homepage: <http://www.pscho.ewf.uni-erlangen.de/mitarbeiter/ziegler/>

KEYNOTE LECTURE 3 (Webinar)

Time: Thursday, 18 September: 6:00 p.m. – 7:00 p.m.
Location: Plečnik 1-2-3

Chair: Peter Csermely

Creativity in the Digital Age

Mihaly Csikszentmihalyi
Claremont Graduate University, Claremont, California, USA
mihaly.csikszentmihalyi@cgu.edu

Professor Csikszentmihalyi will present the Systems Model of Creativity, explain its dynamics, and comment on the how electronic technologies can both facilitate creative activities, and how they might be an obstacle to them.

Suggested references:

- Nakamura, J., & Csikszentmihalyi, M. (2003). Creativity in later life. In R. K. Sawyer & V. John-Steiner (Eds.), *Creativity and Development* (pp. 186–216). New York, NY: Oxford University Press.
- Kubey, R., & Csikszentmihalyi, M. (2002). Television addiction. *Scientific American*, 286, 74–81.
- Csikszentmihalyi, M., & Wolfe, R. (2000). New conceptions and research approaches to creativity: Implications of a systems perspective for creativity in education. In K. A. Heller, F. J. Monks, R. J. Sternberg, & R. Subotnik (Eds.), *International Handbook of Giftedness and Talent* (pp. 81–93). Nailsea, UK: Elsevier Science.
- Csikszentmihalyi, M. (1999). Implications of the systems perspective for the study of creativity. In R. J. Sternberg (Ed.), *Handbook of Human Creativity* (pp. 313–338). New York, NY: Cambridge University Press.
- Csikszentmihalyi, M. (2014). The Systems model of creativity and its applications. In D. K. Simonton (Ed.), *The Wiley Handbook of Genius* (pp. 533–545). Chichester, UK: Wiley-Blackwell.

Prof. Mihaly Csikszentmihalyi is Distinguished Professor of Psychology and Management at Claremont Graduate University, Claremont, USA. Homepage: <http://www.cgu.edu/pages/4751.asp>

KEYNOTE LECTURE 4

Time: Friday, 19 September: 9:00 a.m. – 10:00 a.m.
Location: Plečnik 1-2-3

Chair: Mojca Juriševič

The Gifted Brain

Norbert Jaušovec
University of Maribor, Maribor, Slovenia
norbert.jausovec@um.si

There is probably no doubt that our brain is the source of intelligent behavior as vividly illustrated by Mountcastle's quote: "Each of us lives within the universe – the prison – of his own brain." [Mountcastle, V. B. (1975), *The View from Within: Pathways to the Study of Perception*. Johns Hopkins Medical Journal, 136, p. 131]. The electronic age has provided techniques and instruments that allow neuroscientist a deeper insight into this "brain prison". The aim of the presentation is to answer the question: Has neuropsychology anything to say about giftedness? The talk is organized as follows: The first section deals with some key-characteristics of brain function and brain mapping techniques based on electrophysiological (EEG, MEG, TMS, TES), and hemodynamic principles (fMRI, PET, SPECT, NIRS). Next, we describe what these methods have revealed about the brain with a special focus on findings that have direct relevance to the field intelligence, creativity, and giftedness. Findings related to attention and memory are discussed, as well as individual differences related to ability, and personality are reviewed. Finally, we discuss neuropsychological studies of intelligence and creativity, the implication of these findings on our understanding of giftedness.

Prof. Norbert Jaušovec is Full Professor of Educational Psychology and Neuropsychology at University of Maribor, Slovenia. Find more at: http://www.researchgate.net/profile/Norbert_Jausovec

KEYNOTE LECTURE 5

Time: Saturday, 20 September: 9:00 a.m. – 10:00 a.m.
Location: Plečnik 1-2-3

Chair: Christian Fischer

Do Contests and Competition Enrich or Ruin the Life of the Gifted?

Márta Fülöp
Hungarian Academy of Sciences, Budapest, Hungary
fmarta@mtapi.hu

While contests and competitive activities are significantly present in most of the gifted people's life, their outstanding achievements are recognized many times in contests, the research results are contradictory in terms of the role that competitiveness, competing and participating in contests play in their personal and professional life. According to many competitions can serve to provide learning opportunities and interact with peers of similar abilities, ways to demonstrate creative skills, foster friendly rivalry, gain prestigious scholarships etc. At the same time there is a notion that competing causes stress, anxiety, exhaustion, places too much responsibility on the gifted person etc.

The present talk will discuss the individual psychological components of successful and adaptive coping with competitive experiences, with winning and losing in case of the gifted. It will be based on the results of a large scale study that compared regular and successful participants i.e. winners of academic contests with peers who did not participate in contests or who were not particularly successful. Attitudes towards competition, coping patterns towards winning and losing, mental toughness, resilience, positive life orientation, aspirations and perfectionism were all investigated in case of contestants and those who rather avoid competitions. An in-depth interview study aimed at revealing how gifted contestants perceive the role of contests in shaping their character, professional choices and professional lifecourse.

The talk makes an attempt to give an evidence based answer to the question posed in the title and will present those psychological conditions that mediate between competitions and their effect on gifted people's life.

Because of the digital age competition is more and globalized and apart from international contests young people who have similar interest and talent are able to get into contact with each other via the web. They can compare themselves to peers from almost any country in the world. This on one hand may be overwhelming, on the other hand may be a way to learn about strengths and weaknesses on a way much larger scale than before. As a result of this winning and losing may be placed into a different perspective in the future.

Prof. Márta Fülöp is Scientific Vice-director, Professor, Senior Research Fellow, and Head of the Comparative Cultural Psychology Department at Institute for Cognitive Neuroscience and Psychology, Hungarian Academy of Sciences, Hungary. Find more at: <http://www.mtapi.hu/index.php?mi=443&lang=en>

Invited Lectures

INVITED LECTURE 1

Time: Thursday, 18 September: 2:20 p.m. – 3:05 p.m.
Location: Plečnik 1

Chair: Lianne Hoogeveen

Native Gifted Children in the Digital Age

Sheyla Blumen

Pontifical Catholic University of Peru, Lima, Peru

sblumen@pucep.edu.pe

Native gifted children are often invisible in ethnic-linguistic diverse groups around the world. Included among them are indigenous populations descendants from African slaves, Indian natives, and Spanish conquer in the Americas. They may have high intellectual potential. However, the lack of access to adequate schooling prevents them to meet their cognitive and academic needs, becoming under-represented when comparing with the other gifted children around the world. On the one hand, there are inter-group differences and negative values towards certain social groups which lead to different forms of discrimination and exclusion. On the other hand, educational practices focused on accountability and achievement in general education lack to meet the needs of the highly able gifted learners. Therefore, the marginalization towards the native gifted children remains.

However, the digital age seems to democratize access to appropriate educational virtual settings, enabling these native gifted learners, often overlooked, to have equitable access to learning environments to meet their needs and reach their highest potential. It is our aim to share exemplary programs for the native gifted children, in order to dispel stereotypes about them as well as to clarify parenting traits related to the success of the native gifted children.

Prof. Sheyla Blumen is Full Professor of Psychology at the Pontifical Catholic University of Peru, Lima, Peru.

INVITED LECTURE 2

Time: Thursday, 18 September: 2:20 p.m. – 3:05 p.m.
Location: Plečnik 2-3

Chair: Eva Vondrakova

The Ancient Game of Chess as an Educational Tool in the Modern World

Martin Kubala

Palacký University, Olomouc, Czech Republic

martin.kubala@upol.cz

Recent technologies enable extremely easy access to information, strikingly, it makes our decision processes rather more difficult. The amount of available data has changed the essence of our everyday problems from "I do not know it" to "I cannot find it", "How should I select the best one" or "Can I trust it?" Moreover, the modern life-style requests to be rapid and flexible in making decisions.

The chess is a part of our culture for many centuries, however, its position in the society varied during the time. Nowadays, it seems to be an interesting tool in youth education and numerous countries start to implement it into curricula. The game is essentially a continuously changing set of problems of various difficulties. The player's decision in each position requires proper identification of essential factors, evaluation of multiple possibilities and selection of the best one.

Benefiting from its playful form, chess can nonviolently cultivate in children the skills of concentration, patience, critical, analytical, logical and creative thinking, making decisions and taking responsibility for them. Interestingly, it was shown that children educated in chess improve also their language and reading abilities. As the successful player must consider also the opponent's plans, the kids learn also empathy and improve their social skills.

Assoc. Prof. Martin Kubala is Professor at Department of Biophysics, Faculty of Science, Palacký University, Olomouc, Czech Republic.

INVITED LECTURE 3

Time: Thursday, 18 September: 2:20 p.m. – 3:05 p.m.
Location: Plečnik 4

Chair: Diane Montgomery

Making Use of Museum and Galleries in a Digital Landscape Paper

Carrie Winstanley
Roehampton University, London, United Kingdom
c.winstanley@roehampton.ac.uk

The richness of museum and gallery artworks, artefacts and ideas are ideal stimuli for gifted and talented children in an immense range of subjects and genres. The detail available about the objects on display also allows for depth of study enjoyed by many gifted students. Modes of display and labelling in themselves provide additional opportunities for challenge and for exploring curatorial controversies and complexities. Just as schools and universities are having to rethink pedagogies and practice to make best use of technological advances, so are museums and galleries being forced to acknowledge and embrace the digital era. Obscure archives are being made openly accessible and helping audiences interpret materials is a stimulating task with which to engage highly able learners. Many museums have excellent websites and are making their displays increasingly interactive through the use of handheld devices and connectivity. These developments allow access to incredible collections for visitors who are physically remote, providing however, they have reliable and up-to-date tools. Children who benefit from the kinds of stimuli in museums and galleries need support in making use of what is available; museum educators creating the interfaces, as well as those working in the buildings, with actual objects, also need to understand how to harness their collections for all types of learners. We need to find ways of cross-fertilising our work in gifted education with museum educators in order to harness this exciting era in both fields.

Dr Carrie Winstanley is Principal lecturer at Roehampton University, London, United Kingdom.

INVITED LECTURE 4

Time: Friday, 19 September: 2:20 p.m. – 3:05 p.m.
Location: Plečnik 1

Chair: Norbert Jaušovec

Developmental Model of Creativity: from Curiosity to Initiative

Slavica B. Maksić
The Institute for Educational Research, Belgrade, Serbia
smaksic@ipisr.org.rs

The paper presents a Developmental model of creativity that is based on the research data from the study of implicit theories on creativity and its development. The samples of educational researchers, preschool teachers, primary school teachers, secondary school teachers, and university teachers were asked for their opinions about manifestations of creativity from an early age to adulthood. Qualitative analysis of answers resulted in the following aspects of creativity manifestations through the lifespan: curiosity and imagination, finding and developing interests, experimenting and searching for personal expression, mastering the content and independence in thinking and acting, creative contributions and initiative. It was noticed that all manifestations of creativity were presented at all age periods, but their frequencies were related to the particular period. Implicit theories of creativity manifestations through the lifespan were analyzed in relevant social groups that were included in the sample. It was concluded that the Developmental model of creativity could be useful in the process of recognizing creative potential and designing appropriate educational support for creative expression. Perspectives for the application of the Model are considered in the light of the characteristics of digital era as well as of today's youth (Generation Me).

Dr Slavica B. Maksić is Principal Research Fellow at The Institute for Educational Research, Belgrade, Serbia.

INVITED LECTURE 5

Time: Friday, 19 September: 2:20 p.m. – 3:05 p.m.
Location: Plečnik 2-3

Chair: Margaret Sutherland

Non-Digital Gifted Students in a Digital Age

*Peter Merrotsy
University of Western Australia, Crawley, Australia
peter.merrotsy@uwa.edu.au*

Digital gifted students? “Digital natives”? In an increasingly digital age, a particular group of gifted students are not “digital”.

Gifted students from backgrounds of so-called disadvantage are particularly likely to have less access, if any, to technology. A background of disadvantage can mean many things: it may refer to low socio-economic status, cultural minority status, refugee or immigrant status, rural and isolated communities, or to the juvenile justice system. It may also refer to living with an impairment or learning difficulty. And, quite often, it is not known that these gifted students have high ability. Such students tend to be well hidden in schools, and are called “invisible gifted students”.

In my presentation, I will discuss the nature of disadvantage, present a way of identifying high potential in invisible gifted students, and suggest a framework for addressing the technological gap. I will use examples from my research to illustrate each of these concepts.

Prof. Peter Merrotsy is Professor at Graduate School of Education, Crawley, University of Western Australia.

INVITED LECTURE 6

Time: Friday, 19 September: 2:20 p.m. – 3:05 p.m.
Location: Plečnik 4

Chair: Rena Subotnik

Giftedness and Gifted Education in the Digital Age: Continuities and Discontinuities

*Frank C. Worrell
University of California, Berkeley, USA
frankc@berkeley.edu*

In 2011, Subotnik, Olsewski-Kubilius, and Worrell published a monograph in which they formulated a vision of gifted education grounded in psychological science. In addition to putting forward a comprehensive definition of giftedness intended to apply across the multiplicity of domains, these authors also described the major contributors to giftedness, distinguished between performance and production domains, articulated the developmental nature of giftedness within domains, and developed a mega-model summarizing the development of giftedness from potential to eminence. What are the implications of this reconceptualization in this digital age? Should Ipads and smart phones and the internet change how we think about giftedness and gifted education? These are some of the questions that will be addressed in this address. In this presentation, I will review Subotnik et al.’s model and the ways in which the digital world intersects with the model. The presentation will identify aspects aspects of giftedness and gifted education that will be unaffected by time and digital media but will also discuss the changes in giftedness and gifted education that a digital world will bring.

Prof. Frank C. Worrell is Professor at Graduate School of Education at the University of California, Berkeley, USA.

INVITED LECTURE 7

Time: Saturday, 20 September: 10:30 a.m. – 11:15 a.m.
Location: Plečnik 1

Chair: Victor Müller-Oppliger

Being a Teacher in the Digital Age

*Lianne Hoogeveen
Radboud University Nijmegen, Nijmegen, The Netherlands
l.hoogeveen@its.ru.nl*

Being a teacher has always been a challenge. I just received an e-mail of one of the teachers who were trained by the CBO, citing Albert Einstein: "I can't make anybody learn. All I can do is create an environment in which people are challenged to learn". Imagine how demanding and exiting it is nowadays to create that challenging environment, having to "compete" with (or make use of?) all the social media our students have access to. We demand a lot of our teachers, knowing that they should teach who they are rather than merely teach what they know (Palmer, 1998). The Center for the Study of Giftedness (CBO) offers the ECHA teacher training for more than 20 years. In those years we saw wonderful people, passionate to create a challenging environment for their students. It is them I will talk about in this presentation, their experiences, passion and enthusiasm to help students, including the gifted ones, to grow up to be happy and autonomous adults. An overview of the research they did in all those years will reveal the questions they are confronted with and their ways of dealing with them.

Dr Lianne Hoogeveen is Head of the Center for the Study of Giftedness (CBO) at Radboud University Nijmegen, Nijmegen, Netherlands.

INVITED LECTURE 8

Time: Saturday, 20 September: 10:30 a.m. – 11:15 a.m.
Location: Plečnik 2-3

Chair: Anna Maria Roncoroni

The Hungarian Talent Support Network Model: Operational Experience

*Csilla Fuszek
European Talent Centre Budapest, Budapest, Hungary
csilla.fuszek@talentcentrebudapest.eu*

This presentation maps experience accumulated since the formation of the first talent support umbrella organisation, the National Talent Council, in 2006, as reflected by seven studies of effectiveness connected to network-relevant fields, conducted in past years. It looks for answers to questions like "Did the more than one thousand Talent Points grow into a real network during these years and, if so, what type of network is that? What events and organisations have emerged organically, spontaneously, in the context of network-based operation and what required targeted promotion by the Council?" It presents the factors underlying the success of the most effective network hubs, and factors hindering or promoting network-based operation revealed by the talent network. It touches on educational policy changes in talent support achieved once a critical mass could be attained, and the impacts of a remarkable multi-annual media campaign on the assessment of talent and talent support nationally.

Csilla Fuszek is Director of European Talent Centre Budapest, Budapest, Hungary.

INVITED LECTURE 9

Time: Saturday, 20 September: 10:30 a.m. – 11:15 a.m.

Location: Plečnik 4

Chair: Taisir Subhi Yamin

Extra-Curricular Enriched Program for Gifted Students Individual Projects in Informatics and Robotics

Jasna Cvetković – Lay

Center for gifted child development "Bistrić", Zagreb, Croatia

jasna.lay@zg.t-com.hr

This presentation consists of three parts. The first part gives a short overview of a general context of social values which enable or disable gifted individuals to progress and focus towards a socially positive direction, as well as those that support the development of important personality traits. There are two sides of the digital age – a progressive one and a problematic one. Probably there is no country, including Croatia, which has been spared of the cybercrime or dangerous games of "unguided" computer geniuses ("hacking"). Also, we give two examples of the absurdity in the formal education system: gifted second or third graders are not allowed to participate in official IT competitions because they are regarded as being too young, and the points achieved in IT competitions are not added to the points necessary for entering higher levels of education. In the same time, we have the incredible results that Croatian gifted students have been achieving for years on all national IT competitions and international IT Olympics.

In the second part, a few most important advantages of the interaction between a gifted child and a computer will be provided from the point of view of development psychology. The indicators of professionally applied research carried out on the population of young informaticians are presented, implying that formal education system is not supportive enough for their special educational needs, which has induced us to initiate an extra-curricular enriched programme for gifted students.

The third part shows the goals of extra-curricular enriched programme in our centre, together with an overview of workshop activities with gifted students in informatics and robotics. Tutors particularly encourage the creativity in gifted child's individual programming projects. This will be presented through a power-point presentation of individual projects on constructing and programming objects in 3D space of virtual reality of a world net. Individual children projects on the programming of Lego educational sets - Lego WeDo and Lego Mindstorms - will be presented in the second enclosed presentation. With high-quality tutors, gifted first and second graders (age 6 - 8) acquire complex concepts and create programmes through programming with Lego Mindstorms EV3 system at a considerably higher level than the expected one.

Jasna Cvetković – Lay is Vice-President of Center for gifted child development "Bistrić", Zagreb, Croatia, and Specialist in Gifted Education (ECHA Diploma in 2000).

Session guidelines

Please check the detailed programme for the location and time of different sessions.

The presenters, chair persons and discussants are kindly asked to be available in the room allocated for their session 10 minutes or earlier before the session will start, to check that the equipment is working correctly and the presentations are correctly loaded, or to upload their presentations. It is recommended that the presenters keep close track on time and (optionally) provide a number of copies of their presentations (i.e. handouts) to distribute to the interested participants.

SYM: *Symposium* will be presented as four to five conceptually related research or best practice papers on a single theme, highlighting achievements and trends in current research or practice. Sessions are directed by a chairperson, involving presenters from at least three different countries and one discussant. Each presentation lasts 20-25 minutes. At the end of the symposium there should be a general discussion by a discussant (5-10 minutes) and the opportunity for participants to discuss with authors (20-35 minutes).

PAP: *Papers (individual oral presentations)* will be presented in chaired thematic paper sessions and divided by strand (i.e. best practice or scientific strand). Each presentation lasts 15-20 minutes followed by 5-10 minutes of scheduled time for discussion and questions. Session concludes with a 5-15 minutes discussion with the audience.

POS: *Posters (individual visual presentations in ISO A0 format)* will be presented in the Foyer in front of the Plečnik 1-2-3 from Thursday, 18 September to Friday, 19 September. Informal sessions will be organised for conference participants to interact with authors, from 1:45 p.m. to 2:15 p.m. each day. The presenters are kindly asked to ensure that they stand next to their poster(s) during the both sessions for discussion and questions.

WOR: *Workshops (learning by doing sessions)* will be presented in interest groups and are scheduled for 60 minutes following the workshop structure (i.e. introduction, main activity, reflective discussion).

DEM: *Demonstrations (ICT and performing and visual arts presentations)* include thematic sessions on teaching or research tools or methods and music, dance, theatre, painting, photography, video, and other art forms presentations. Each demonstration lasts 20 minutes and it is followed by a time for discussion and questions (10 minutes).

Overview – Thursday, 18 September 2014

Possibilities & Challenges of Digital Age for the Gifted

DEMONSTRATION SESSION 1

Best practice strand

Time: Thursday, 18 September: 8:15 a.m. – 8:45 a.m.

Location: Plečnik 5

DEM 1: An Individual Programme for a Gifted Teenage Girl: Development Support Considering Personal Barriers by Using Social (Digital) Networking

Tamara Malešević

The National Education Institute of Slovenia, Slovenia; tamara.malesevic@zrss.si

Time: Thursday, 18 September: 8:15 a.m. – 8:45 a.m.

Location: Ravnikar Hall

DEM 2: Saving Private Goldbach

Tim Horvat, Marija Dominko, Gabor Jasna Kos, Tamara Bosnić, Peter Kržan, Rafael Frančiček Irgolič, Ezra Čosić Alibegović, Vilijem Borštar and Mariša Cvitanič
Gimnazija Bežigrad, Ljubljana, Slovenia; tim.horvat@dijaki.gimb.org

Time: Thursday, 18 September: 8:15 a.m. – 8:45 a.m.

Location: Martin Krpan Hall

DEM 3: The Hidden Talent of Human Voice

Nataša Nahtigal¹ and Katarina Habe²

¹Natasa Nahtigal Vocal Studio, Slovenia, ²Faculty of Education, University of Maribor, Slovenia; natasa.nahtigal@gmail.com

PAPER SESSION 1: STEM

Best practice strand

Time: Thursday, 18 September: 10:30 a.m. – 12:40 a.m.

Location: Plečnik 2-3

PAP 1-1: T-expeditions as New Complex Activities for Gifted in Talnet

Stanislav Zelenda

NIDV, Czech Republic; zelendast@gmail.com

PAP 1-2: Research Projects for School Students - Practical MINT Talent Support in School Labs

Dieter Hausamann and Tobias Schüttler

DLR_School_Lab Oberpfaffenhofen, German Aerospace Center, Germany; dieter.hausamann@dlr.de

PAP 1-3: Inquiry Based Science Education and Opportunities for Teaching the Gifted

Marieke Peeters¹, Jo Verlinden², Lana Goossens³, and Lianne Hoogeveen⁴

¹Radboud University Nijmegen, Science Hub, The Netherlands; ²BCO Onderwijsadvies, The Netherlands; ³Science education HUB Radboud University, The Netherlands; ⁴Radboud University Nijmegen, The Netherlands; m.peeters@science.ru.nl; joverlinden@bco-onderwijsadvies.nl

PAP 1-4: PROFILES: A New Strategy for Motivating (Gifted) Students in the Science Classroom

Iztok Devetak, Miha Slapničar, and Mojca Jurišević

Faculty of Education, University of Ljubljana, Slovenia; iztok.devetak@pef.uni-lj.si

PAP 1-5: An Online Learning Model for Teaching Astronomy to Gifted Students

Stuart Kehoe¹, Colm O'Reilly², Elizabeth Albert³, and Jason St. Pierre⁴

¹Centre for Talented Youth Ireland, Ireland; ²CTY Ireland, Ireland; ³Centre for Talented Youth, Johns Hopkins University, USA; ⁴Centre for Talented Youth, Johns Hopkins University, USA; stuart.kehoe@dcu.ie

PAPER SESSION 2: Models

Best practice strand

Time: Thursday, 18 September: 10:30 a.m. – 12:40 a.m.

Location: Plečnik 4

PAP 2-1: The Sun of School in Educating Talented Students: The Piirto Pyramid and Talent in Domains

Jane Piirto

Ashland University, USA; jpiirto@ashland.edu

PAP 2-2: ANABILIM UYEP Model: A Special Program Model for Self-Contained Classrooms for the Gifted in Turkey

Ugur Sak¹, Goksen Akyol², Kamer Saglam², Tuba Aksoy², Sema Dora², Sinem Ozdek², and Yasemin Karakan²

¹Anadolu University, Turkey; ²Anabilim Schools, Turkey; goksenakyol@anabilim.k12.tr; kamersaglam@anabilimk.k12.tr; tubaaksoy@anabilim.k12.tr; ugursak@gmail.com

PAP 2-3: A Characteristic Artistic Plan?

Mia Frumau Van Pinxten

Developmental psychologist/psychotherapist/PhD student, The Netherlands;
frumaupsych@home.nl

PAPER SESSION 3: Innovations & Programmes 1

Best practice strand

Time: Thursday, 18 September: 10:30 a.m. – 12:40 a.m.

Location: Plečnik 5

PAP 3-1: Digital Age Pedagogies and Gifted Students: The Flipped Classroom Approach

Rebecca Kirrane, Stuart Kehoe, and Colm O'Reilly

Centre for Talented Youth, Ireland, Ireland; rebecca.kirrane3@mail.dcu.ie

PAP 3-2: Eureka: The Cross Cultural Program for Talent Development in the Digital Age

Rachel Zorman

The Henrietta Szold Institute, Israel; rachelz@szold.org.il

PAP 3-3: The Gifted Education in the Digital Information Platform

Naif Kara

Izmit Bilim Sanat Merkezi, Kuruçesme, Turkey; naifkara80@gmail.com

PAP 3-4: Rethinking Epistemic Virtue. A Practical Example from the Leiden Pre-University Excellence Program

Jan Sleutels and Annebeth Simonsz

Leiden University, The Netherlands; sleutels@me.com

PAPER SESSION 4: Personality & Emotional

Scientific strand

Time: Thursday, 18 September: 10:30 a.m. – 12:40 a.m.

Location: Ravnikar Hall

PAP 4-1: Dealing with Giftedness in Everyday Life

Cathelijne Leenders¹ and Kathelijne Van De Ven²

¹CBO Nijmegen, The Netherlands; ²Stedelijk Gymnasium Nijmegen, The Netherlands;
c.leenders@its.ru.nl

PAP 4-2: Examining Impacts of Psychological Trainings with Gifted Adolescents

Zsuzsanna Kovi, Eموke Bagdy, and Zsuzsanna Mirnics

KRE University Budapest, Hungary; mirnics.zsuzsa@gmail.com

PAP 4-3: Emotion Issues in Giftedness: Overexcitabilities and Self-esteem

Maria Pereira Da Costa and Marion Botella

Sorbonne Paris Cité, University Paris Descartes, France; maria.pereira@parisdescartes.fr

PAP 4-4: Perfectionism in Chilean Gifted Students: An Exploratory Study

Maria P. Gomez-Arizaga¹ and Andrea Gonzalez²

¹Universidad San Sebastian, Chile; ²Pontificia Universidad Catolica de Valparaiso, Chile;
a.gonzalezu@hotmail.com

PAPER SESSION 5: Lifespan

Scientific strand

Time: Thursday, 18 September: 10:30 a.m. – 12:40 a.m.

Location: Boardroom Risba

PAP 5-1: Alternative Training – Gifted Students and Lecturers both Manage a Dynamic Course in the Development of Thinking

Lina Boulos

Sakhnin College for Teache Education, Israel; blina@macam.ac.il

PAP 5-2: Honors in Northern Europe: Overview and Analysis

Marca Wolfensberger

Hanzehogeschool Groningen, Utrecht University, The Netherlands;
m.v.c.wolfensberger@pl.hanze.nl

PAP 5-3: Sixty Years On: Reflections from Members of a 1952-53 Class for Gifted Students

Roger Moltzen

University of Waikato, New Zealand; rim@waikato.ac.nz

PAP 5-4: To Help a Gifted Child to Turn Into Successful Adult: Achievements Vs. Hidden Potential

Oleksandr Burov¹ and Mykhailo Pertsev²

¹Center for Talent Development, Ukraine; ²Institute of Gifted Child, Ukraine;
a_burov@yahoo.com

PAPER SESSION 6: Learning*Scientific strand*

Time: Thursday, 18 September: 10:30 a.m. – 12:40 a.m.
Location: Boardroom Grafika

PAP 6-1: Inquiry Learning for Gifted Children

Tessa H. S. Eysink
University of Twente, The Netherlands; t.h.s.eynsink@utwente.nl

PAP 6-2: Didactic Strategies and Competencies of Gifted Students

Grozdana Gojkov, Aleksandar Stojanović, and Aleksandra Gojkov Rajić
Teacher Training Faculty, Belgrade; Preschool Teacher Training College "M. Palov", Vršac, Serbia; vsvaskatedrapp@hemo.net

PAP 6-3: Learning Arrangements to Promote Technologies of the Self, Self-Regulation and Sense of Responsibility

Victor Mueller-Opplinger
University of Education and Teacher Training of Northwestern Switzerland, Switzerland; victor.mueller@fhnw.ch

PAP 6-4: Emotional Resources of High-Achieving Students and Their Relation to Students' Use of Learning Strategies

Stefanie Obergriesser and Heidrun Stoeger
University of Regensburg, Germany; stefanie.obergriesser@ur.de

WORKSHOP SESSION 1

Possibilities & Challenges of Digital Age for the Gifted

Time: Thursday, 18 September: 10:30 a.m. – 11:30 a.m.
Location: Martin Krpan Hall

WOR 1: What the Beatles, Andy Warhol, and Robert Frost Have in Common: Cultural Relevance in the Adolescent Classroom

Kimberley Chandler and Jennifer Robins
The College of William and Mary, USA; klchan@wm.edu

Time: Thursday, 18 September: 11:40 a.m. – 12:40 a.m.
Location: Martin Krpan Hall

WOR 2: A Development of Quality Indicators for Gifted and Talented Education in Slovenia

Tanja Bezić
The National Educational Institute of Republic of Slovenia, Slovenia; tanja.bezic@zrss.si

SYMPOSIUM 1

Possibilities & Challenges of Digital Age for the Gifted

Time: Thursday, 18 September: 10:30 a.m. – 12:40 a.m.
Location: Plečnik 1

SYM 1: Twice Exceptional – Gifted Children with Learning Difficulties

Organiser: Christian Fischer, University of Münster, Germany
Discussant: Lianne Hooegeveen, Radboud University, Center for the Study of Giftedness, Nijmegen, The Netherlands

SYM 1-1: A Comprehensive Model of School Collaboration for the Identification of Twice-Exceptional Students

Anies Al-Hroub
American University of Beirut, Lebanon; aa111@aub.edu.lb

SYM 1-2: Mathematically Gifted, but Untalented in Linguistic Domains? The Perspective of Mathematical Giftedness

Friedhelm Käpnick
Westfälische Wilhelms-Universität Münster; kaepnick@t-online.de

SYM 1-3: Mathematically Gifted, but Reading and Spelling Difficulties? The Perspective of Learning Difficulties

Christian Fischer
University of Münster, Germany; ch.fischer@uni-muenster.de

POSTER SESSION

Time: Thursday, 18 September: 1:45 p.m. – 2:15 p.m.
Location: Foyer

PART 1: Possibilities & Challenges of Digital Age for the Gifted

Scientific strand

POS 1: Creativity in Intellectually Gifted Children and Gifted Children in Art: A Comparative Study

Natalia Shumakova

Psychological Institute RAE, MSUPE, Russia; n_shumakova@mail.ru

POS 2: Relationships between Perception of Pedagogical Practices for Creativity, Motivation, and Cognitive Styles

Eunice Alencar and Denise Fleith

University of Brasilia, Brasilia; eunices.alencar@gmail.com; denisefleith@gmail.com

POS 3: Creativity in Graduate Courses According to Professors and Students

Eunice Alencar¹ and Zélia Oliveira²

¹University of Brasilia; ²Catholic University of Brasilia; eunices.alencar@gmail.com

POS 4: The Relationship between Mathematical and Scientific Productivity

Nazmiye Nazli Ozdemir

Anadolu University, Turkey; nazmiyeozdemir@gmail.com

POS 5: Thoughts on Giftedness in the Digital Age and the Developmental Perspectives of the Individual, Gifted With the Emotional Dowry of the Family

Štefanija Jaksetič Dujc

(Dijaški dom Vič, Slovenia); Štefanija Marriage and family therapy, Slovenia); stefanija.jaksetic@gmail.com

POS 6: The Relationships between Intellectual Self-Concept and Psychosocial Adjustment in Gifted School Children

Elena Shcheblanova

Psychological Institute of Russian Academy of Education, Russia; elenacheblanova@mail.ru

POS 7: Academic Self-Concept in Gifted Adolescents with a Different Ratio of Verbal and Non-Verbal Abilities

Elena Shcheblanova¹ and Svetlana Petrova²

¹Psychological Institute of Russian Academy of Education, Russia; ²Moscow State University of Psychology and Education, Russia; elenacheblanova@mail.ru

POS 8: Attitudes toward the Gifted, Emotional Intelligence and Implicit Theories of Intelligence – Comparison of Croatian and Slovenian Students

Polona Gradišek¹, Sanja Bradič², and Barbara Rončević-Zubković³

¹Faculty of Education, University of Ljubljana, Slovenia; ²Gimnazija Eugena Kumičiča Opatija, Secondary school, Croatia; ³Department of Psychology, Faculty of Humanities and Social Sciences, Rijeka, Croatia; polona.gradisek@pef.uni-lj.si; sanya.taregami@gmail.com; roncevic@ffri.hr

Best practice strand

POS 9: The Role of Social Pedagogues in the Process of Dealing with Gifted Pupils

Alenka Polak and Barbara Vrbič

Faculty of Education, University of Ljubljana, Slovenia; alenka.polak@quest.arnes.si

POS 10: A Literature Review for the Use of Dynamic Assessment with Gifted Students

Selin Bozbey

Anadolu University, Turkey; bozbeyselin@gmail.com

POS 11: Parenting Gifted Education: an Italian Experience

Sara Peruselli¹, Simona Traverso¹, Daniela Miazza¹, and Anna Maria Roncoroni²

¹AISTAP- Italy; ²Italian Association for Gifted and Talented Students; gifted@roncoroni.eu

POS 12: Supporting Parents of Gifted Children: A SENG Model Application (The “Education to Talent” Project in Veneto Region - Italy)

David Polezzi¹, Massimo Ronchese¹, Martina Pedron², Martina Brazzolotto²,

Daniela Lucangeli², and Pier Antonio Battistella¹

¹U.O.C. NPIA ULSS 16 Padova; GATE-Italy Association (Gifted and Talented Education – Italy); ²Department of Developmental Psychology and Socialisation – University of Padova and C.N.I.S. National Association; GATE-Italy Association; martinabrazzolotto@gmail.com

POS 13: The Attitudes to Education for Teachers of Gifted Students in the Czech Republic

Jana Škrabánková and Renata Kovářová

University of Ostrava, Czech Republic; jana.skrabankova@osu.cz; renata.kovarova@osu.cz

POS 14: Potentially Gifted Preschool Children Care: Kindergarten Rijeka model

Ljiljana Brašnić¹ and Jasna Borbelj²

¹Dječji vrtič/Kindergarten “Rijeka”, Croatia; ²Specialized program for gifted children “Bistrići”, Rijeka, Croatia; jborbelj@gmail.com

PART 2: Trends in Research and Theory of Giftedness

Scientific strand

POS 15: Validation of Italian Version of Gifted Rating Scales - School Form. Preliminary Data.

Angela Beretta¹, Steven Pfeiffer², and Maria Assunta Zanetti¹

¹University of Pavia, Italy; ²Florida State University, USA; angela.beretta01@ateneopv.it

POS 16: Psychometric Validity of the Creative Scientific Ability Test

Bahadır Ayas

Research Assistant, Turkey; bahadirayas@gmail.com

POS 17: Using Epistemic Synchronization Index (ESI) to Distinguish Gifted and Regular Students’ Knowledge Elaboration in CSCL

Marca Wolfensberger

Hanze University of Applied Sciences, The Netherlands; m.v.c.wolfensberger@pl.hanze.nl

POS 18: Portuguese Validation of the Teaching Practices for Creativity in Higher Education Inventory

Maria De Fátima Morais¹, Leandro Almeida¹, Ivete Azevedo², Eunice Alencar³, Denise Fleith³

¹University of Minho, Portugal; ²Torrance Center, Portugal; ³University of Brasilia, Brasilia; denisfleith@gmail.com

POS 19: Investigation about Mentoring Studies Effects on Gifted Students

Fatih Tokmak

Anadolu University, Turkey; fatihtokmak55@gmail.com

POS 20: Twice Exceptional Children Before Entering School: Questionnaire for Detecting Children at Risk for SLI and SLD

Martina Ozbič, Jerneja Novšak Brce, and Damjana Kogovšek

Faculty of Education, University of Ljubljana, Slovenia; jerneja.novsak@pef.uni-lj.si

POS 21: The Construction of the Discourse of Giftedness in Media Texts in Estonia

Halliki Põlda

Estonia; halliki.polda@gmail.com

Practice strand

POS 22: Preparation of Natural History Collection as an Enrichment Activity to Promote Gifted Elementary School Students: A Case Study

Gregor Torkar

Faculty of Education, University of Ljubljana, Slovenia; gregor.torkar@pef.uni-lj.si

POS 23: Chain Experiment

Nina Verdel¹ and Jurij Bajc²

¹Student at University of Ljubljana, Faculty of Mathematics and Physics; ²Faculty of Education, University of Ljubljana, Slovenia; nina.verdel@gmail.com

POS 24: Inquiry-Based Excellent Learning: Scaffolds for the Gifted

Marieke Peeters¹, Jo Verlinden², Lana Goossens³, and Lianne Hoogeveen⁴

¹Radboud University Nijmegen, Science Hub, The Netherlands; ²BCO Onderwijsadvies, The Netherlands; ³Science education HUB Radboud University, The Netherlands; ⁴Radboud University Nijmegen, The Netherlands; l.goossens@science.ru.nl

POS 25: Aistap Summer Camp: an Experience of a Practice-based Approach to Music Technology

Jacopo Lorenzetti, Victor Zappi, and Anna Maria Roncoroni

Italian Association for Gifted and Talented Students (AISTAP) – Italy; jlorenzetti86@gmail.com

POS 26: “Education to Talent” and “Gifted Teaching”: Projects for Gifted Children in Veneto Region – Italy

Martina Pedron¹, Martina Brazzolotto¹, David Polezzi², Massimo Ronchese², Daniela Lucan-geli¹, and Pier Antonio Battistella²

¹Department of Developmental Psychology and Socialization – University of Padova and C.N.I.S. National Association; GATE-Italy Association (Gifted and Talented Education – Italy); ²U.O.C. NPIA ULSS 16 Padova; GATE-Italy Association (Gifted and Talented Education – Italy); martinabrazzolotto@gmail.com

POS 27: The Leiden Approach

Lieneke Van Tricht¹, Lilian Snijders², and Phil Rhebergen³

¹Bureau Talent, the Netherlands; ²Ambulante Educatieve Dienst, The Netherlands; ³SCOL, The Netherlands; L.Snijders@aed-leiden.nl

POS 28: Identifying and Promoting Talented Students at the Department of Art Education

[Črtomir Frelih](#)

Faculty of Education, University of Ljubljana, Slovenia; Crtomir.Frelih@pef.uni-lj.si

POS 29: Evaluation Based on Evidences of the Identification Process of the Program of Gifted/ Outstanding Aptitudes Implemented in a Mexican State

[María Cadenas](#)¹, [Dolores Valadez](#)², [Rogelio Zambrano](#)², and [África Borges](#)¹

¹University of La Laguna, Spain; ²University of Guadalajara, Mexico; mcadbor@ull.es

POS 30: Specific School Measures Designed for Gifted French Middle School Students: Presentation and Challenges

[Karine Cueur-Buard](#), [Amélie Courtinat-Camps](#), and [Minna Puustinen](#)

GRHAPES, France; karine.buard@inshea.fr

PAPER SESSION 7: Learning Environment 2

Best practice strand

Time: Thursday, 18 September: 3:20 p.m. – 5:30 p.m.

Location: Boardroom Grafika

PAP 7-1: BE COOL!: A Digital Learning Environment to Challenge and Socially Include Gifted Learners

[Tessa H.S. Eysink](#), [Alieke M. Van Dijk](#), and [Ton De Jong](#)

University of Twente, The Netherlands; t.h.s.eynsink@utwente.nl

PAP 7-2: Virtual Provisions for Talented Secondary School Students (online presentation)

[Barbara Bannister](#)

New South Wales Department of Education & Communities, Australia;

barbara.bannister@det.nsw.edu.au

PAP 7-3: How the Internet can Help and Support Parents and Gifted Children

[Petra Leinigen](#)

Nationwide telephone counsellor for parents of gifted children for the DGhK in Germany, Germany; petra.leinigen@dghk-nds-hb.de

PAPER SESSION 8: Teachers

Best practice strand

Time: Thursday, 18 September: 3:20 p.m. – 5:30 p.m.

Location: Plečnik 2-3

PAP 8-1: Effective Teachers of the Gifted: Characteristics, Competencies, and Preparation in the Digital Age

[Ann Robinson](#)¹ and [Pamela Clinkenbeard](#)²

¹Jodie Mahony Center, University of Arkansas at Little Rock, USA; ²University of Wisconsin-Whitewater, USA; aerobinson@ualr.edu, clinkenp@uww.edu

PAP 8-2: Introduction of the Concept of a Talented Teacher

[Katarina Habe](#)

Faculty of Education, University of Maribor, Slovenia; katarina.habe@um.si

Pap 8-3: The Role of the School Principal in Gifted Education

[Colm O'Reilly](#)¹, [Margaret Sutherland](#)², [Niamh Stack](#)², and [Kimberley Chandler](#)³

¹Dublin City University, Ireland; ²University of Glasgow, UK; ³College of William and Mary, USA; colm.oreilly@dcu.ie, margaret.sutherland@glasgow.ac.uk, niamh.stack@glasgow.ac.uk, klchan@wm.edu

PAP 8-4: Online Professional Learning in Gifted Education

[Lesley Henderson](#)

Flinders University South Australia, Australia; lesley.henderson@flinders.edu.au

PAPER SESSION 9: Preschool

Best practice strand

Time: Thursday, 18 September: 3:20 p.m. – 5:30 p.m.

Location: Plečnik 4

PAP 9-1: A Gifted Child in Pre-School

[Katarina Ukmar](#) and [Natalija Trebušak](#)

Pre-school Kolezija, Slovenia; ukmarkatarina@gmail.com

PAP 9-2: Identifying Talented and Self-Regulated Learners in Preschool and Reception

[Diane Montgomery](#)

Middlesex University, USA; dmont507@aol.com

PAP 9-3: Exploring the Material by Talentenlijn and Learning How to Recognize Gifted Toddlers

Willeke Rol

Bright Kids, The Netherlands; willeke@brightkids.nl

PAPER SESSION 10: Personality & Social

Scientific strand

Time: Thursday, 18 September: 3:20 p.m. – 5:30 p.m.
Location: Plečnik 5

PAP 10-1: Self-Esteem, Optimism and Academic Achievement of Gifted Adolescent Females in Singapore

Doreen Yoke Leng Tan¹ and Maureen Neihart²

¹School of Science and Technology; ²National Institute of Education Singapore; maureen.neihart@nie.edu.sg

PAP 10-2: Self-Concept of Intellectually Supernormal Children Aged from 10 to 13 Years Old in China: How Does Enriched Education Setting Affect It?

Xiaoyan Li¹ and Jiannong Shi²

¹University of Chinese Academy of Sciences, Xingli Zhang, Institute of Psychology, Chinese Academy of Sciences, China; ²Department of Learning and Philosophy, Aalborg University, China; shijn@psych.ac.cn

PAP 10-3: Is Being Gifted Always an Advantage? The Relationship between Social Acceptance, Self-concept and the Use of Facebook among Gifted and Non-gifted Pupils

Marina Horvat¹, Urška Aram¹, Nina Jurinec¹ and Katja Košir²

¹Faculty of Arts, University of Maribor, postgraduate student, Slovenia; ²Faculty of Education, University of Maribor, Slovenia; katja.kosir@uni-mb.si

PAP 10-4: The Relation between the Social Status and the Ego-Development of Academically Accelerated Children

Olga Wagenaar¹, Eddie Denessen², and Lianne Hoogeveen³

¹ECHA, The Netherlands; ²RU Nijmegen, The Netherlands; ³Radboud University, Center for the Study of Giftedness, Nijmegen, The Netherlands; olga@ozobegaafd.nl

PAPER SESSION 11: Mathematics

Scientific strand

Time: Thursday, 18 September: 3:20 p.m. – 5:30 p.m.
Location: Boardroom Risba

PAP 11-1: Mathematically Highly Able Students' Time Use in a Computer-Based Reasoning Test

Risto Hotulainen, Sirkku Kupiainen, and Mari-Paoliina Vainikainen

University of Helsinki, Finland; risto.hotulainen@helsinki.fi

PAP 11-2: A Componential Analysis of Gender Differences in General Mathematical Ability: A Case From The EPTS (ÜYEP) of Turkey

Ulku Ayvaz¹ and Ugur Sak²

¹Abant İzzet Baysal University, Turkey; ²Anadolu University, Turkey; ulku.yesilyurt@gmail.com

PAP 11-3: Acceleration and Well-Being at Age 50 in the Top 1% in Mathematical Ability

Stijn Smeets¹, David Lubinski², and Camilla Benbow²

¹Center for the study Giftedness, Radboud University Nijmegen, The Netherlands; ²Vanderbilt University, USA; s.smeets@its.ru.nl

PAPER SESSION 12: Creativity

Scientific strand

Time: Thursday, 18 September: 3:20 p.m. – 5:30 p.m.
Location: Ravnikar Hall

PAP 12-1: Domain Specificity and Continuum in Education for Creativity in Gifted Children and Adolescents

Željko Rački

Faculty of Teacher Education in Osijek, Croatia; zracki@ufos.hr

PAP 12-2: Thinking Creatively through the CREAT: Creative Reversal Act in Thinking and Teaching

Ugur Sak

Anadolu University, Turkey; ugursak@gmail.com

PAP 12-3: The Paradoxical Inhibition of Creativity with Highly Gifted Underachievers: a Longitudinal Study Based on a Mixed-Methods Design

Lony Schiltz

Hôpital Kirchberg Luxembourg, Luxembourg; lony.schiltz@education.lu

WORKSHOP SESSION 2

Possibilities & Challenges of Digital Age for the Gifted

Time: Thursday, 18 September: 3:20 p.m. – 4:20 p.m.

Location: Martin Krpan Hall

WOR 3: The Impact Technology has on the Areas and Levels of Development of Gifted Children

Koenderink Tijn

Novilo Talent Development, The Netherlands; tk@novilo.nl

Time: Thursday, 18 September: 4:30 p.m. – 5:30 p.m.

Location: Martin Krpan Hall

WOR 4: A Tailored Pedagogy to Prevent Underachievement in Dutch Secondary Education

Karin Koens¹ and Phil Rhebergen²

¹ECHA Netherlands, The Netherlands; ²SCOL, The Netherlands;

k.koens@bonaventuracollege.nl; p.rhebergen@scoleiden.nl

SYMPOSIUM 2

Trends in Research and Theory of Giftedness

Time: Thursday, 18 September: 3:20 p.m. – 5:30 p.m.

Location: Plečnik 1

SYM 2: ECHA – Training – Present Situation and Future Perspectives of Further Education

Organiser: Christian Fischer, University of Münster, Germany

Discussant: Marca Wolfensberger, Utrecht University, The Netherlands

SYM 2-1: Teacher Training in the Netherlands

Lianne Hoogeveen

Radboud University, Center for the Study of Giftedness, Nijmegen, The Netherlands;

l.hoogeveen@its.ru.nl

SYM 2-2: ECHA-Teacher Training: Further Developments in Germany

Christian Fischer

University of Münster, Germany; ch.fischer@uni-muenster.de

SYM 2-3: European Advanced Diploma in Gifted Education: Present Situation and Future Perspectives

Petra Wolfsberger

ECHA, Austria; petra.wolfsberger@lrs-noe.gv.at

SYM 2-4: ECHA training: The Who and the Why

Anna Maria Roncoroni¹ and Marca Wolfensberger²

¹Italian Association for Gifted and Talented Students; ²Utrecht University, The Netherlands; gifted@roncoroni.eu

Overview – Friday, 19 September 2014

Trends in Research and Theory of Giftedness

DEMONSTRATION SESSION 2

Best practice strand

Time: Friday, 19 September: 8:15 a.m. – 8:45 a.m.
Location: Ravnikar Hall

DEM 4: Challenging mix of Geometry and Algebra, Through the Use of Dynamic Software

Elisabet Mellroth
Karlstad Municipality, Sweden; elisabet.mellroth@gmail.com

Time: Friday, 19 September: 8:15 a.m. – 8:45 a.m.
Location: Martin Krpan Hall

DEM 5: Using Coaching in Educational and Counselling Work with Gifted Students

Ajda Erjavec Bartolj
Gimnazija Bežigrad, Slovenia; ajdaerjavec@gmail.com

PAPER SESSION 13: Learning Environment 1

Best practice strand

Time: Friday, 19 September: 10:30 a.m. – 12:40 a.m.
Location: Boardroom Grafika

PAP 13-1: Challenge Response Behaviors of Gifted and Talented Children

Burcu Seher Calikoglu
Biruni University, Turkey; bscalikoglu2758@gmail.com

PAP 13-2: School (Re)Organization in Digital Age according to Gifted Students

Polonca Pangrčič
Elementary school teacher, OŠ Cerkevjak - Vitomarci, Slovenia;
polonca.pangrcic@quest.arnes.si

PAP 13-3: Growing Up and Education the Gifted in Context to Politics and Other Circumstances

Eva Vondrakova
Association for Talent and Giftedness, Czech Republic; vondrakova@gmail.com

PAPER SESSION 14: Exceptionalities

Best practice strand

Time: Friday, 19 September: 10:30 a.m. – 12:40 a.m.
Location: Plečnik 2-3

PAP 14-1: Twice Exceptional Children Detected in Year 2013

Biserka Lep
The National Education Institute of The Republic of Slovenia, Slovenia; biserka.lep@zrss.si

PAP 14-2: Developing the Digital Competencies of Twice Exceptional Students

Nela Bejat Krajnc and Bor Černec
Primary school Pod goro Slovenske Konjice, Slovenia; nela.bejat-krajnc@guest.arnes.si

PAP 14-3: Dual Exceptionality Improving Provision for Gifted Children with Asperger in Regular Classrooms

Diane Montgomery
Middlesex University, USA; dmont507@aol.com

PAP 14-4: The Pros and Cons of Gifted Secondary School Students' Perfectionism - A Counselling Perspective

Gordana Rostohar
Gimnazija Brežice, Slovenia; gordana.rostohar@guest.arnes.si

PAP 14-5: Effectiveness of Mindfulness Cognitive Behavioural Therapy with Talented Youth

Paula Hillmann
University of Wisconsin-Madison, USA; hillmann@education.wisc.edu

PAPER SESSION 15: Innovations & Programmes 2

Best practice strand

Time: Friday, 19 September: 10:30 a.m. – 12:40 a.m.
Location: Plečnik 4

PAP 15-1: Project Work as Enrichment for Gifted Pupils

Urška Repinc¹ and Primož Južnič²

¹Primary School dr. Janez Mencinger Bohinjska Bistrica, Slovenia, ²Faculty of Arts Department of Library and Information Science and Book Studies, University of Ljubljana, Slovenia; urska.repinc@guest.arnes.si

PAP 15-2: Perceptions of Gifted Students about Fluent Speaking Course in Education Program for Talented Students (EPTS)

Emine Ozturk

Anadolu University, Turkey; emineozturk10@gmail.com

PAP 15-3: Teaching Gifted English Language Learners in Saudi Arabia

Badriah Alkhannani, Margaret Sutherland, and Niamh Stack

University of Glasgow, UK; b.alkhannani.1@research.gla.ac.uk

PAP 15-4: The Stimulation of Executive Skills during a Study Trip to Beijing: How can Mentors Stimulate Gifted Youngsters to Engage in Challenging Situations that Help Develop their Executive Abilities?

Anita Wuestman

ECHA Specialists in Gifted Education, The Netherlands; awuestman@hoog-begaafdheid.nl

PAP 15-5: Developing Stimulation of Gifted Students through Interdisciplinarity

Beatriz G. Tomšič Čerkez

Faculty of Education, University of Ljubljana, Slovenia; beatriz.tomsic@pef.uni-lj.si

PAPER SESSION 16: Social Relations

Scientific strand

Time: Friday, 19 September: 10:30 a.m. – 12:40 a.m.
Location: Ravnikar Hall

PAP 16-1: Inclusion of Gifted Students – Possible or Not?

Jutta Moehring

Technical University of Munich, Germany; jutta.moehring@tum.de

PAP 16-2: Inclusive Education for Gifted Children and Competences for Teachers

Janine Haenen

Leiden University of Applied Sciences, The Netherlands; haenen.j@hsleiden.nl

PAP 16-3: Assessment of Social Interaction within Enrichment Programs through Observational Methodology

María Cadenas¹, Lianne Hoogeveen², and Africa Borges¹

¹University of La Laguna, Spain; ²Radboud University, Center for the Study of Giftedness, Nijmegen, The Netherlands; mcadbor@ull.es

PAPER SESSION 17: Programmes & Interventions

Scientific strand

Time: Friday, 19 September: 10:30 a.m. – 12:40 a.m.
Location: Plečnik 5

PAP 17-1: The Effects of a Science-Focused STEM Intervention on Gifted Elementary Students' Science Knowledge and Skills

Ann Robinson¹, Debbie Dailey², Gail Hughes³, and Alicia Cotabish²

¹Jodie Mahony Center University of Arkansas at Little Rock, USA; ²University of Central Arkansas, USA; ³University of Arkansas at Little Rock, USA; aerobinson@ualr.edu

PAP 17-2: The Impact of M3 Curriculum & the Role of Teacher as a Facilitator on the Math Creative Problem Solving Ability of Mathematically Promising English Language Learners

Marcella Mandracchia and Seokhee Cho

St. John's University, USA; Marcella.Mandracchia07@stjohns.edu; chos1@stjohns.edu

PAP 17-3: Promoting the Development of Gifted Pupils and Digital Competence

Fani Nolimal

National Education Institute, Slovenia; fani.nolimal@zrss.si

PAP 17-4: Exploring Aspects of Participation in an International Online Network for “Gifted” Students – a Research in Progress

Marina Charalampidi

University of Warwick, Institute of Education, UK; m.charalampidi@warwick.ac.uk

PAP 17-5: Development of Triarchic Intelligence Abilities: the Effects of Acadin

Joyce Gubbels¹, Eliane Segers¹, Lianne Hoogeveen², Desirée Houkema³, and Ludo Verhoeven¹
¹Behavioural Science Institute, The Netherlands, ²Radboud University, Center for the Study of Giftedness, Nijmegen, The Netherlands, ³Stichting Leerplanontwikkeling Nederland, The Netherlands; j.gubbels@pwo.ru.nl

Time: Friday, 19 September: 11:40 a.m. – 12:40 a.m.
Location: Martin Krpan Hall

PAPER SESSION 18: Acceleration

Scientific strand

Time: Friday, 19 September: 10:30 a.m. – 12:40 a.m.
Location: Boardroom Risba

PAP 18-1: Subject-Based Acceleration in High Schools: Perceptions of Gifted and Average-Ability Students and Their Teachers

Ana Altaras Dimitrijevic¹ and Danilo Drobnjak²
¹University of Belgrade, Department of Psychology, Serbia, ²The Fifth Belgrade Grammar School, Serbia; aaltaras@f.bg.ac.rs

PAP 18-2: Acceleration, Enrichment, or Internal Differentiation – Consequences of Measures to Promote Gifted Students Anticipated by German Secondary School Teachers

Martina Endepohls-Ulpe
Institute of Psychology, University of Koblenz-Landau, Germany; endepohl@uni-koblenz.de

PAP 18-3: 15 Years of Early Study in Austria: Experiences, Evaluation, and Prospects

Astrid Fritz
Austrian Research and Support Center for the Gifted and Talented (ÖZBF), Salzburg, Austria; astrid.fritz@oezbf.at

WORKSHOP SESSION 3

Trends in Research and Theory of Giftedness

Time: Friday, 19 September: 10:30 a.m. – 11:30 a.m.
Location: Martin Krpan Hall

WOR 5: Challenging Gifted Students: Differentiation Made Simple

Julia Roberts¹ and Tracy Inman²
¹Western Kentucky University, USA; ²The Center for Gifted Studies at Western Kentucky University, USA; julia.roberts@wku.edu; tracy.inman@wku.edu

WOR 6: Developing Psychological Preparedness in Gifted Children

Maureen Neihart
National Institute of Education Singapore, Singapore; maureen.neihart@nie.edu.sg

SYMPOSIUM 3

Possibilities & Challenges of Digital Age for the Gifted

Time: Friday, 19 September: 10:30 a.m. – 12:40 a.m.
Location: Plečnik 1

SYM 3: Talent Development in a Digital World

Organiser: Javier Tourón, University of Navarra, Pamplona, Spain
Discussant: Mojca Juriševič, Faculty of Education, University of Ljubljana, Slovenia

SYM 3-1: The Flipping Classroom Learning and Talent Development

Javier Tourón¹ and Raul Santiago²
¹University of Navarra, Pamplona, Spain; ²University of La Rioja, Logroño, Spain;
jtouaron@unav.es; raul.santiago@unirioja.es

SYM 3-2: The Perspectives of a European Talent Support Network in the Digital Era

Peter Csermely
Semmelweis University, School of Medicine, Hungary; csermelynet@gmail.com

SYM 3-3: Does Online Learning “Work” for High Ability Students? Best Practices and Strategies for Expanding Academic Options

Patricia Wallace
Johns Hopkins University, Center for Talented Youth, Baltimore, USA; p.wallace@jhu.edu

SYM 3-4: Technology as a Personalization Tool for Students Learning

Terry Nealon
Fishtree, Dublin, Ireland; terrynealon@gmail.com

POSTER SESSION

Time: Friday, 19 September: 1:45 p.m. – 2:15 p.m.
Location: Foyer

See: Thursday, 18 September (Page 38)

PAPER SESSION 19: Innovations & Programmes 3

Best practice strand

Time: Friday, 19 September: 3:20 p.m. – 5:30 p.m.
Location: Plečnik 2-3

PAP 19-1: Three Challenges, One Solution – PENTA UC Goes “Digital” For Talented Students with Low Socio-Economic Status Who Live in Rural Regions of Chile

Diana Boyanova, Patricia Morales, Paulette Laclote, Marcelo Mobarec, Macarena Escalante, Lesly Maldonado, and Pablo González
Catholic University of Chile - PENTA UC Program, Chile; dboyanova@uc.cl

PAP 19-2: Giftedness in Israel - From Policy to Implementation in the Digital Age

Pnina Zeltser
National supervisor; zpnina@hotmail.com

PAP 19-3: Recent Development of Research on High Ability Students in China during the Last Decade

Jiannong Shi, Xiaoyan Li, and Xingli Zhang
Institute of Psychology, Chinese Academy of Sciences; University of Chinese Academy of Sciences, China; shijn@psych.ac.cn

PAP 19-4: Supporting the Implementation of Individual Education Plans for Gifted Students in Serbian Elementary Schools: Insights from a Two-Year Project

Sanja Tatic Janevski¹ and Ana Altaras Dimitrijevic²
¹Institute for the Improvement of Education, Serbia; ²University of Belgrade, Faculty of Philosophy, Department of Psychology, Serbia; aaltaras@f.bg.ac.rs

PAPER SESSION 20: Mathematics

Best practice strand

Time: Friday, 19 September: 3:20 p.m. – 5:30 p.m.
Location: Boardroom Grafika

PAP 20-1: Using International Testing Resources to Support Advanced Mathematics

Kathleen Stone
INSTEAD International, USA; kstonegift@aol.com

PAP 20-2: On the Mathematically Gifted in the 21st Century - Slovenian Viewpoint

Boštjan Kuzman
Faculty of Education, University of Ljubljana, Slovenia; Boštjan.Kuzman@pef.uni-lj.si

PAP 20-3: The Social Validity of Advanced Mathematics in the Education Programs for Talented Students (EPTS)

Bilge Bal Sezerel
Anadolu University, Turkey; bilgbal@gmail.com

PAPER SESSION 21: Acceleration

Best practice strand

Time: Friday, 19 September: 3:20 p.m. – 5:30 p.m.
Location: Plečnik 4

PAP 21-1: Acceleration without Thresholds

Jo Verlinden¹, Lianne Hoogeveen², Bert Oostindie³, Nienke Bouwman³, and Marloes Ottink³
¹BCO Onderwijsadvies, The Netherlands; ²Radboud University, Center for the Study of Giftedness, Nijmegen, The Netherlands; ³IJsselgroep Zwolle, The Netherlands;
joverlinden@bco-onderwijsadvies.nl; l.hoogeveen@its.ru.nl

PAP 21-2: Long-term Effects of Acceleration – and How to Use Networks for it Today

Annette Heinbokel
DGhK, Germany; annette.heinbokel@swbmail.de

PAP 21-3: Predictors of Teachers’ Attitudes towards Acceleration of Gifted Students

Paloma Palacios Gonzalez
University of New South Wales, Australia; palpalgon@hotmail.com

PAP 21-4: Mentoring Gifted Students in the Digital Age: A Unique School / University Partnership in Academic Research Projects

Susan Knopfmacher
Presbyterian Ladies College, Melbourne, Australia; sknopfmacher@plc.vic.edu.au

PAPER SESSION 22: Teachers

Scientific strand

Time: Friday, 19 September: 3:20 p.m. – 5:30 p.m.
Location: Ravnikar Hall

PAP 22-1: Professional Development in the Digital Age: Building and Testing an Online Model for Gifted Education Teachers

Matthew Edinger
The University of Derby, UK; m.edinger@derby.ac.uk

PAP 22-2: Attitudes Towards Giftedness and Gifted Education in the Slovenian Educational Context

Mojca Juriševič, Janez Vogrinc, and Darija Skubic
Faculty of Education, University of Ljubljana, Slovenia; mojca.jurisevic@pef.uni-lj.si;
janez.vogrinc@pef.uni-lj.si

PAP 22-3: Language Teachers' Cognition in Gifted Education

Karmen Pižorn and Mojca Juriševič
Faculty of Education, University of Ljubljana, Slovenia; karmen.pizorn@pef.uni-lj.si

PAP 22-4: Students' Attitudes Toward Education Of Gifted And Their Competences As Future Teachers: Is There an Implication for Study Program Modification?

Sanja Tatalović Vorkapić and Jasna Arrigoni
Department of Teacher Education, University of Rijeka, Croatia; arrigoni@ufri.hr

PAP 22-5: Primary School Teacher's Perceptions on the Gifted Students' Characteristics in Class

Aikaterini Gari¹, Afroditi Karfi², Anastasia Theodorou², and Maria Tsonopoulou²
¹Associate Professor of Social Psychology; ²Psychologist; agari@psych.uoa.gr

PAPER SESSION 23: Neuro-Cognitive

Scientific strand

Time: Friday, 19 September: 3:20 p.m. – 5:30 p.m.
Location: Plečnik 5

PAP 23-1: Explaining the Gifted Mind

Pichak Siripoonsap and Ngarmmars Kasemset
Thailand - The Gifted and Talented Foundation, Thailand; pichak@nationalgiftedthai.org;
ngarmmars@nationalgiftedthai.org

PAP 23-2: Managing High Abilities from Neuroeducation. What Differentiates some People from Others when Their Brain Works

Juan Jose Rienda, Elisa Villena, and Lucía Sutil
Universidad Rey Juan Carlos, Spain; juanjose.rienda@urjc.es

PAP 23-3: Differences in Brain Activity during the Visuospatial Working Memory Task: An FMRI Study in Mathematically and Scientifically Talented Students with and Without High IQ

Ching-Chih Kuo¹, Jun-ren Lee², Shou-ying Tsai², and Chia-en Hsieh²
¹National Taiwan Normal University, Taiwan; ²Department of Special Education, National Taiwan Normal University, Taiwan; kaykuo@ntnu.edu.tw

PAP 23-4: Visual Search Development among 9-13 Years Old Supernormal Children

Xingli Zhang¹, Xiaoyan Li², and Jiannong Shi³
¹Institute of Psychology, Chinese Academy of Sciences, China; ²University of Chinese Academy of Sciences, China; ³Department of Learning and Philosophy, Aalborg University, China; shijn@psych.ac.cn

PAPER SESSION 24: Models & Concepts

Scientific strand

Time: Friday, 19 September: 3:20 p.m. – 5:30 p.m.
Location: Boardroom Risba

PAP 24-1: Traditional Models of Giftedness and High Ability - are They Still Up To Date and Viable?

Sieglinde Weyringer
University of Salzburg, Austria; sieglinde.weyringer@sbg.ac.at

PAP 24-2: Does the Development of Prodigies' Psychosocial Skills Differ from that of their Conservatory Peers?

Rena Subotnik¹ and Linda Jarvin²
¹American Psychological Association, USA; ²Paris College of Art, France; rsubotnik@apa.org

PAP 24-3: Identifying Highly Gifted Children by Analyzing Human Figure Drawings

Sven Mathijssen¹, Max Feltzer², and Lianne Hoogeveen¹
¹Center for the Study of Giftedness, Radboud University Nijmegen, the Netherlands; ²Tilburg University, The Netherlands; s.mathijssen@its.ru.nl

WORKSHOP SESSION 4

Trends in Research and Theory of Giftedness

Time: Friday, 19 September: 3:20 p.m. – 4:20 p.m.
Location: Martin Krpan Hall

WOR 7: Products in the Digital Age: An Authentic Challenge for Gifted Students

Tracy Inman¹ and Julia Roberts²

¹The Center for Gifted Studies at Western Kentucky University, USA; ²Western Kentucky University, USA; tracy.inman@wku.edu; julia.roberts@wku.edu

Time: Friday, 19 September: 4:30 p.m. – 5:30 p.m.
Location: Martin Krpan Hall

SYMPOSIUM 4

Trends in Research and Theory of Giftedness

Time: Friday, 19 September: 3:20 p.m. – 5:30 p.m.
Location: Plečnik 1

SYM 4: Access Granted: Multinational Approaches to Finding and Developing Talent

Organiser & Discussant: Simeon Brodsky, Johns Hopkins University Center for Talented Youth (CTY), USA

SYM 4-1: Opening Opportunities for Underrepresented Students: a View from the US

Linda Brody

Johns Hopkins University Center for Talented Youth, USA; lbrody@jhu.edu

SYM 4-2: Building a Path to Potential: CTY Ireland

Colm O'Reilly

CTY, Ireland; colm.oreilly@dcu.ie

SYM 4-3: Providing Hope in Greece: a Foundation-supported Effort to Find and Develop Talent

Antonios Apostolou

CTY Greece at Anatolia College, Greece; danaos@anatolia.edu.gr

SYM 4-4: A National Response to Talent Development: Nazarbayev Intellectual Schools, Kazakhstan

Leila Nurakayeva¹ and Miras Baimyrza²

¹Deputy Director of Center for Pedagogical Measurements, AEO Nazarbayev Intellectual Schools, Republic of Kazakhstan; ²Project manager of Center for Pedagogical Measurements, AEO Nazarbayev Intellectual Schools, Republic of Kazakhstan; leila_nurakaeva@mail.ru; baimyrza_m@nis.edu.kz

PAPER SESSION 25: Supporting Programmes

Best practice strand

Time: Friday, 19 September: 5:30 p.m. – 7:00 p.m.
Location: Plečnik 1

PAP 25-1: Day a Week School

Jaap Verouden

Het ABC, The Netherlands; jverouden@hetabc.nl

PAP 25-2: Lessons Learned from 12 yrs Supporting Gifted Drop-Outs Climb Back in - Attitudes for Approaching the Wounded to Retrieve Their Love for Living in the Digital Age

Chantal Woltring and Albert Kaput

Centre for Creative Learning, The Netherlands; chantal.woltring@creatiefleren.nl; albert.kaput@creatiefleren.nl

PAP 25-3: Achievings with Underachievers

Mariska Poelman¹ and Anneke Craanen²

¹Center for the study of Giftedness, Radboud University, The Netherlands; ²Radboud University, The Netherlands; m.poelman@its.ru.nl

PAPER SESSION 26: Motivation

Scientific strand

Time: Friday, 19 September: 5:30 p.m. – 7:00 p.m.
Location: Plečnik 2-3

PAP 26-1: Mindset – to Fulfill our Potential: the Hungarian Adaptation of Mindset-Questionnaire and its Relevance in Talent Development

Szilvia Peter-Szarka

University of Debrecen, Hungary; pszsilvia@gmail.com

PAP 26-2: Self-Determination Theory: A Link Between Challenging Education and Optimal Learning Environments to Motivate Gifted Students

Greet C. De Boer¹, Marie-Christine J. L. Opendakker², and Alexander E. M. G. Minnaert¹

¹University of Groningen, the Netherlands; ²GION, University of Groningen, The Netherlands; g.c.de.boer@rug.nl

PAP 26-3: Motivation of Gifted Students – in the Digital Age and Beyond

Ajda Erjavec Bartolj and Marija Dominko Gabor

Gimnazija Bežigrad, Slovenia; ajdaerjavec@gmail.com; marija.dominko@gimb.org

WORKSHOP SESSION 5

Horizons: Gifted Beyond the Digital Age

Time: Friday, 19 September: 5:30 p.m. – 7:00 p.m.
Location: Plečnik 4

WOR 8: The Effect of Modelling in Teacher Trainings

Eleenoor Van Gerven

Slim! Educatief, The Netherlands; info@slimeducatief.nl

Time: Friday, 19 September: 5:30 p.m. – 7:00 p.m.
Location: Plečnik 5

WOR 9: “Getting to Know You” Game and Other Simple Activities to Enhance Social Skills in Bright Children

Pichak Siripoonsap and Ngarmmars Kasemset

Thailand - the Gifted and Talented Foundation, Thailand; pichak@nationalgiftedthai.org; ngarmmars@nationalgiftedthai.org

Overview – Saturday, 20 September 2014

Horizons: Gifted Beyond the Digital Age

DEMONSTRATION SESSION 3

Best practice strand

Time: Saturday, 20 September: 8:15 a.m. – 8:45 a.m.
Location: Ravnikar Hall

DEM 6: Career Orientation for Gifted Students

Karmen Pečarič Podobnik and Timotej Savelli

Secondary school Vegova Ljubljana, Slovenia; karmen.pecaric@guest.arnes.si

Time: Saturday, 20 September: 8:15 a.m. – 8:45 a.m.
Location: Martin Krpan Hall

DEM 7: Logic Games and Problem Solving Activities with Augmented Reality (AR)

Jacopo Lorenzetti¹, Anna Maria Roncoroni², and Sara Peruselli¹

¹AISTAP, Italy; ²Italian Association for Gifted and Talented Students, Italy; gifted@roncoroni.eu

PAPER SESSION 27: Competitions

Best practice strand

Time: Saturday, 20 September: 11:30 a.m. – 1:30 p.m.
Location: Plečnik 5

PAP 27-1: Physics Competitions - a Balance between Challenging the Gifted and Popularization

Barbara Rovšek

Faculty of Education, University of Ljubljana, Slovenia; barbara.rovsek@pef.uni-lj.si

PAP 27-2: Let's Make Learning Computer Science Fun

Irena Nančovska Šerbec¹, Špela Cerar¹, Irena Demšar², and Janez Demšar³

¹Faculty of Education, University of Ljubljana, Slovenia; ²The A. Šuštar Primary School, Slovenia; ³Faculty of Computer and Information Science, University of Ljubljana, Slovenia; Irena.Nancovska@pef.uni-lj.si

PAP 27-3: Internet-based Competitions: Benefits and Disadvantages

Viire Sepp

The Gifted and Talented Development Centre, University of Tartu, Estonia; viire@ut.ee

PAPER SESSION 28: Capital

Scientific strand

Time: Saturday, 20 September: 11:30 a.m. – 1:30 p.m.

Location: Ravnikar Hall

PAP 28-1: The Role of Learning and Educational Capital for Girls' Choice of STEM Programs

Johanna Kuhlmann¹, Teresa Greindl¹, Daniel Patrick Balestrini¹, and Heidrun Stoeger²

¹University of Regensburg, Germany; ²Chair Professor for School Research, School Development, and Evaluation, University of Regensburg, Germany; johanna.kuhlmann@ur.de; teresa.greindl@ur.de

PAP 28-2: The Applicable Value of the Talent and Social Capital

Nataša Zrim Martinjak

Faculty of Education, University of Ljubljana, Slovenia; natasa.martinjak@guest.arnes.si

PAP 28-3: Regionally Specific Manifestations of Cultural Educational Capital in News Writing

Daniel Patrick Balestrini¹ and Heidrun Stoeger²

¹University of Regensburg, Germany; ²Chair Professor for School Research, School Development, and Evaluation, University of Regensburg, Germany; daniel-patrick.balestrini@ur.de

PAPER SESSION 29: Socio-Cultural

Scientific strand

Time: Saturday, 20 September: 11:30 a.m. – 1:40 p.m.

Location: Plečnik 2-3

PAP 29-1: Contextualised Pedagogy for High Ability

Margaret Sutherland¹, Niamh Stack¹, Thomas Aneurin Smith², and Frida Tungaraza³

¹University of Glasgow, Scotland, UK; ²University of Sheffield, England, UK; ³University of Dar es Salaam, Tanzania, East Africa, Tanzania; niamh.stack@glasgow.ac.uk

PAP 29-2: How Does High Early Cognitive Ability Fare in Finnish Primary Education?

Sirkku Kupiainen¹, Risto Hotulainen¹, Mari-Paoliina Vainikainen¹, Samuel Greiff², and Jarkko Hautamäki¹

¹University of Helsinki, Finland; ²University of Luxembourg, Luxembourg; sirkku.kupiainen@helsinki.fi

PAP 29-3: "I Want a White Horse Instead of This Certificate" – Exploring Meaning and Reality of Giftedness in the Conflict Area of East Jerusalem

Fatima Elyan

David Yellin College, Jerusalem; fatima_elyan@yahoo.com

PAP 29-4: Language Arts Curriculum Design for Verbally Gifted and Talented Learners at Middle School and High School Levels

Christine Chifen Tseng

National Taichung University of Science and Technology, Taiwan; chifen@nutc.edu.tw

PAP 29-5: Exploring the Conception of Giftedness in Lebanon

Sarah El-Khoury and Anies Al-Hroub

American University of Beirut, Beirut; sarah.khoury87@gmail.com; aa111@aub.edu.lb

PAPER SESSION 30: Gifted vs. Non-Gifted

Scientific strand

Time: Saturday, 20 September: 11:30 a.m. – 1:30 p.m.

Location: Plečnik 4

PAP 30-1: Mental Health, Wellbeing and Signs of Intellectual Giftedness in a Flemish Population Study

Ciska Pieters¹, Mathieu Roelants², Karine Verschuere³, Tessa Kieboom⁴, and Karel Hoppenbrouwers⁵

¹KU Leuven, Belgium; ²Environmental Health, Youth Health Care, KU Leuven, Belgium; ³School Psychology and Child and Adolescent Development, KU Leuven, Belgium; ⁴Center for the Study of Giftedness, Antwerp, Belgium; ⁵Environmental Health, Youth Health Care, KU Leuven, Belgium; ciska.pieters@med.kuleuven.be

PAP 30-2: Perception in the Present and the Future Vision of Gifted and Other Students

Ljiljana Krneta

Faculty of Political sciences, University of Banja Luka, Bosnia and Herzegovina; krnetaljljana@yahoo.com

PAP 30-3: A Longitudinal Examination of the Outcomes for Gifted Students in the Wollongong Youth Study

Wilma Vialle and Steven Howard

University of Wollongong, Australia; wvialle@uow.edu.au

PAPER SESSION 31: Parents and Teachers

Time: Saturday, 20 September: 11:30 a.m. – 1:30 p.m.

Location: Boardroom Grafika

PAP 31-1: Cross-Cultural Mother-Daughter Studies of European (Germany, Cyprus) High School Girls and Asian (Thailand, Taiwan) 5th-Grade Girls

James Campbell and Jami Scherr

St. John's University, USA; campbelj@stjohns.edu

PAP 31-2: Can Parental Expectations be Adequately Measured by a Single-Item Construct?

James Campbell and Michelle Kyriakides

St. John's University, USA; campbelj@stjohns.edu

PAP 31-3: Measuring Gifted Children's Behavioral Profiles: From Relevant Approach into Interventions

Janneke Berendsen-Hulshof and Lianne Hoogeveen

Radboud University, Center for the Study of Giftedness, Nijmegen, The Netherlands;

j.berendsen@schaersvoorde.nl

Abstracts – Thursday, 18 September 2014

Possibilities & Challenges of Digital Age for the Gifted

DEMONSTRATION SESSION 1

Best practice strand

Time: Thursday, 18 September: 8:15 a.m. – 8:45 a.m.

Location: Plečnik 5

DEM 1: An Individual Programme for a Gifted Teenage Girl: Development Support Considering Personal Barriers by Using Social (Digital) Networking

Tamara Malešević

The National Education Institute of Slovenia, Slovenia; tamara.malesevic@zrss.si

The article presents an individual activities programme for a 15-year old girl identified five years ago as a gifted student in accordance with the Slovenian Concept of Recognising and Working with Gifted Students in Slovene Primary Schools (1999). The programme is based on the girl's profile of diagnosed potential abilities and academic results as well as other achievements. The individual programme pays particular attention to her developmental and personal characteristics. According to Sally Reis specific personal barriers typical of gifted teenage girls include: fear of success, absence of or poor planning, hiding and doubting abilities, the Impostor syndrome, perfectionism, criticism and comparisons, loneliness and problems rising from physical attractiveness. The programme also focuses on learning and educational activities based on the use of digital social networks. The Individual programme for gifted teenage girl contains activities which encourage the development of: (1) Cognitive/metacognitive level by developing effective reading and study skills, creative thinking skills, critical thinking skills, time-management skills. (2) Motivational/emotional level by developing self-regulation skills. (3) Social/moral level by developing cooperative learning skills, digital and media literacy skills and decision making (moral vs. utilitarian) skills. The activities are grouped under these three points, each of them featuring a presentation of goals, references, and methods of monitoring. In their implementation, some rely on the individual contact between the girl and her counsellor, either live or online. Some other activities are limited to interest groups found in digital social networks. The programme is based on a holistic principle of taking care of the gifted, while building on personal development as a decisive factor for long-term fulfilment of children's and youth's potential, as demonstrated by research (Freeman, 2010).

Time: Thursday, 18 September: 8:15 a.m. – 8:45 a.m.
Location: Ravnikar Hall

DEM 2: Saving Private Goldbach

Tim Horvat, Marija Dominko, Gabor Jasna Kos, Tamara Bosnić, Peter Kržan, Rafael Frančiček Irgolič, Ezra Čosić Alibegović, Vilijem Borštar and Mariša Cvitanič
Gimnazija Bežigrad, Ljubljana, Slovenia; tim.horvat@dijaki.gimb.org

A group of six students from Gimnazija Bežigrad, Ljubljana, Slovenia will present the performance "Saving Private Goldbach". Tim Horvat, the 16-year-old author of the performance, presents the ethical dilemma about a computer being able to prove mathematical theorems and thus being able to replace the humans. In the performance the famous Fermat's last theorem and Goldbach's conjecture are exposed. In Act 1 Robert Stark informs Fred Euler about his achievement. He successfully launched "the most advanced computer in the human history which will push borders of maths to the unbelievable dimensions". Two hours after setting up five Peano axioms the computer named Hal already proved the Fermat's last theorem. There is a possibility that the constructor's secret to wish to prove the Goldbach's conjecture will become reality. In Act 2 there is a meeting of some of the world's most famous mathematicians. Euler tells the colleagues about Stark's invention. The Indian mathematician Gupta is very enthusiastic because the so called quantum computer could find out "whether there are any odd perfect numbers and search for new perfect numbers". The other mathematicians are anxious; they cannot cope with the idea of a super computer. After finding out that the computer has started to prove the Goldbach's conjecture, they are completely shocked. They decide that "Goldbach must be protected". In that moment Stark, who was not invited, appears at the meeting. He does not want to accept the argument of the mathematicians that Hal must be turned off and Euler shoots him. In Act 3 we see the final confrontation between Euler and Hal. Euler wants to convince Hal to stop proving the Goldbach's conjecture. Hal disapproves and Euler turns it off. With the big explosion the computer finishes its "life".

Time: Thursday, 18 September: 8:15 a.m. – 8:45 a.m.
Location: Martin Krpan Hall

DEM 3: The Hidden Talent of Human Voice

Nataša Nahtigal¹ and Katarina Habe²

¹Natasa Nahtigal Vocal Studio, Slovenia, ²Faculty of Education, University of Maribor, Slovenia; natasa.nahtigal@gmail.com

The purpose of the demonstration is to introduce hidden dimensions of human voice and show useful ways of developing our vocal talent. The latter is not only valuable to singers and speakers, but for anyone who wants to express themselves authentically and assertively and wants to maintain the quality of her/his voice. Voice is the most primal reflection of our personality. Knowledge about the psychological and physiological functioning of our voice benefits our physical health and mental and emotional balance, while reinforcing self-confidence and improving the ability to communicate. All sounds, that we produce and use, steer and shape our identity. Voice is a unique musical instrument,

which carries multi-faceted dimensions of an individual's physical and mental characteristics. If we want to use our vocal instrument in an effective and healthy way, we must first learn about its structure and working terms. By structure we mean a unique shape of the mouth, jaw, tongue, oral and nasal cavities. In order to develop our vocal talent, we must learn to achieve balance in three key systems: breathing, vocal cords function and the pronunciation. Proper breathing is responsible for the right position of our voice box right cords function gives us right pitch and vocal quality and correct pronunciation, under which we think of the right shaping of our oral cavity, enables the optimum strength and resonance of our voice.

The demonstration is designed for everybody who wants to know more about their voice, to explore the sound of their own voice, and consequently find their authentic voice and vocal talent. With the help of speech-vocal exercises, we will display various options of effective use of our vocal apparatus with an emphasis on balancing our own vocal expression. Presented skills will be useful in everyday communication and in specific areas of our professional domain.

PAPER SESSION 1: STEM

Best practice strand

Time: Thursday, 18 September: 10:30 a.m. – 12:40 a.m.
Location: Plečnik 2-3

Chair: Stanislav Zelenda

PAP 1-1: T-expeditions as New Complex Activities for Gifted in Talnet

Stanislav Zelenda

NIDV, Czech Republic; zelendast@gmail.com

A family of online/blended long or short-term activities for gifted pupils (age 13-19) interested in STEM offered in Talnet (Czech project for GE) organically expanded from the simplest online supported field trips (T-excursions), 4-8 months lasting online courses, and team physics research activities supported online by adding new T-expeditions. T-expeditions are designed for teams (pupils as researchers and guarantors) to prepare and carry out a week multidisciplinary research expedition in the field. The expedition should bring results and outputs worthy of continuing research and interesting not only to the team but also to the local or regional bodies (e.g. a community, a museum, a school, a company). The T-expedition is prepared for a year online by pupils with some methodological help of an instructor. Researchers and guarantors suggest, discuss and specify problems, set up research tasks, design methods, invite subject experts and other researchers. The activities of pupils and their readiness to take their appropriate role in the research expedition team are stimulated by imposing a structure of assignments. It consists of problem related to factual and procedural knowledge, specific (research, inquiry) and general methodological knowledge and special assignments for guarantors. Namely the latter stimulate creativity and multi-perspective thinking of pupils. The results from recent years "T-Expedition Yew-tree" into the region of reserved

natural areas with world known paleobotany fossils (e.g. a *Lepidopholios Acerosus* of 3 m height) near a small town Radnice illustrate possibilities of these type of activities in cooperation on local – nation level of gifted education (pupils and mentors) and might inspire an international cooperation in GE.

PAP 1-2: Research Projects for School Students - Practical MINT Talent Support in School Labs

Dieter Hausamann and Tobias Schüttler

*DLR_School_Lab Oberpfaffenhofen, German Aerospace Center, Germany;
dieter.hausamann@dlr.de*

For the future of Europe it is of vital interest to maintain its technical and scientific excellence by attracting young talents to the MINT disciplines. One of the most efficient ways is to bring gifted youth in close and intense contact with state of the art research and development. For DLR as Germany's national research centre for aeronautics and space it is of great importance to attract young people to aerospace technology and research. Therefore, it has created the concept of the DLR_School_Labs and, by now, operates more than ten of such science labs. The DLR_School_Lab Oberpfaffenhofen is one of these labs devoted to both objectives of broad education and focused MINT talent support. The lab's expertise is based on visits of approx. 22,000 secondary school students and advanced courses for more than 2,000 teachers. The lab's most efficient talent support activity addresses selected groups of highly gifted secondary school students and offers them enrichment projects in which the participating school students execute long-term and complex research activities. The DLR_School_Lab has initiated several such projects in close cooperation with the Hector Seminar: The most recent projects "Remotely Controlled Roboting", "Acoustical Satellite Navigation Simulator", and "Ignition Unit Development" required research efforts at university level; each of these projects produced a new technical development. As will also be described in this contribution, the complex scientific content of the projects initiated new working strategies for the students as well as for the supervisors, especially with respect to self-organization and self-management within the school student team.

PAP 1-3: Inquiry Based Science Education and Opportunities for Teaching the Gifted

Marieke Peeters¹, Jo Verlinden², Lana Goossens³, and Lianne Hoogeveen⁴

*¹Radboud University Nijmegen, Science Hub, The Netherlands; ²BCO Onderwijsadvies, The Netherlands; ³Science education HUB Radboud University, The Netherlands; ⁴Radboud University Nijmegen, The Netherlands; m.peeters@science.ru.nl;
joverlinden@bco-onderwijsadvies.nl*

We prepare our children for a continuing changing world and future occupations that are still unknown. Informational technology, media and technology literacy will become the currency of the future. However, there are huge shortages in science technicians. Therefore, science education in primary education is even more important than ever before. Science education can form a framework in order to develop the so called, 21st century skills, such as creativity, critical thinking, problem solving, cooperation and information and communication technology literacy. A pedagogical approach proven to

be effective and upcoming in many countries is inquiry-based science education (IBSE). Teachers teach children to develop scientific process skills and understanding of science concepts through children's own activity and reasoning. By doing their own investigations, based on their own research questions and hypotheses, they learn HOW to think instead of WHAT to think. In the Netherlands, the inquiry or research cycle consists of seven steps: introduction, exploration, designing an experiment, conducting an experiment, concluding, presenting, and elaborating/ broadening. IBSE is especially suited for gifted children as it matches the way these children think and learn, i.e., top-down, taking huge thinking steps, using creativity for example in the solutions for a problem and in the design of an experiment. One of the difficulties teachers' experiences when teaching gifted children in a regular classroom is how they can differentiate in their teaching and thereby justify the capabilities and learning styles of the gifted children. In our presentation, we elaborate on our research towards and experiences with inquiry-based science education, the steps of the inquiry process, and the opportunities of this approach for the gifted. We illustrate some examples of how teachers can differentiate for the gifted children during the inquiry cycle based on a newly developed approach, and how schools could implement this approach.

PAP 1-4: PROFILES: A New Strategy for Motivating (Gifted) Students in the Science Classroom

Iztok Devetak, Miha Slapničar, and Mojca Jurišević

Faculty of Education, University of Ljubljana, Slovenia; iztok.devetak@pef.uni-lj.si

The main purpose of the Professional Reflection-Oriented Focus on Inquiry-based Learning and Education through Science approach (PROFILES) in science learning is to stimulate students' interest in science learning by applying socio-scientific issues and Inquiry Based Science Education (IBSE) into inclusive teaching to develop scientifically literate citizens in the modern society. Namely, the research shows that the IBSE is effective with students of different ages and regardless the height of their learning abilities and gender differences. The focus of the research presented in this paper was therefore to explore the potential strengths of the PROFILES approach for gifted students in primary science classroom. Mixed method research design was used. Two forms of the questionnaire "The impact of PROFILES on learning science in school" were constructed and administered, one for teachers who practised PROFILES approach, and the other for students who went through PROFILES learning modules. Additionally, four interviews were conducted with teachers who implemented PROFILES approach in order to understand deeply the strengths of the PROFILES approach on gifted students learning science. Finally, PROFILES modules developed by teachers were analysed regarding activities that can be used in stimulating gifted students' abilities in science. The results show that the PROFILES approach is beneficial for every student in the science classroom, but especially motivating for gifted students. The data obtained by the PROFILES modules analysis will also be presented and synthesised into the overall conclusions that may have an important message for the inclusive science education and will be discussed with other implications from the research in the paper presentation.

PAP 1-5: An Online Learning Model for Teaching Astronomy to Gifted Students

*Stuart Kehoe*¹, *Colm O'Reilly*², *Elizabeth Albert*³, and *Jason St. Pierre*⁴

¹Centre for Talented Youth Ireland, Ireland; ²CTY Ireland, Ireland; ³Centre for Talented Youth, Johns Hopkins University, USA; ⁴Centre for Talented Youth, Johns Hopkins University, USA; stuart.kehoe@dcu.ie

This paper is the product of an online collaboration between high school students from Ireland and America in the area of robotics based astronomy. Currently there is a large interest in the Mars rover missions and the use of robots to further maximize the scientific return from space-based astronomy missions. Astronomy is an excellent subject for high ability students due to the abstract nature of the subject and the higher order thinking skills involved in the discipline. This paper demonstrates how to develop an original astronomy project using simple online resources and easily available materials. It discusses the benefits of international collaboration in an increasingly global educational environment. Online collaborative tools, notably asynchronous forums, have been shown to increase frequency of higher order discussions of particular topics. As part of a joint program the Centre for Talented Youth Ireland (CTYI) at Dublin City University and the Center for Talented Youth (CTY) at Johns Hopkins University have engaged in an international collaborative student project in Astronomy around the theme of Robotic Explorations of Space. Presented here is a model for international collaboration through the Moodle environment based on student experience and learning outcomes of the programme. Interested teachers and researchers will be provided with a forum to set up their own research projects in Astronomy or other scientific areas.

PAPER SESSION 2: Models

Best practice strand

Time: Thursday, 18 September: 10:30 a.m. – 12:40 a.m.
Location: Plečnik 4

Chair: *Jane Piirto*

PAP 2-1: The Sun of School in Educating Talented Students: The Piirto Pyramid and Talent in Domains

Jane Piirto

Ashland University, USA; jpiirto@ashland.edu

The Piirto Pyramid of Talent Development is a theoretical framework which includes the genetic aspect, personality aspect, cognitive aspect, talent in domains, and five environmental “suns” - the Sun of School, the Sun of Community and Culture, the Sun of Home, the Sun of Chance, and the Sun of Gender. The catalyst for talent development is “the thorn,” the underlying desire to do the work. This session will describe a new book edited by the presenter. Twenty-two experienced teachers from three nations, who are experts in the arts, academics, and the education of the gifted and talented have written

personal essays on how they emphasize creativity and the focus on the thorn while teaching advanced students advanced subject matters. Teachers of physics, calculus, science, literature, visual arts, foreign language, dance, theatre, visual arts, poetry, creative writing, discussed their strategies of teaching and assessment. Also included in the book are essays by a school principal and a guidance counsellor. Together the authors have over 500 years of teaching experience of students from kindergarten through graduate school. Sixteen themes that are common throughout the essays will be the focus of this session. These themes include a counteroffensive to the current climate of multiple-choice assessment, single-target standards, and pressure to have students score high or be fired. Rather, these teachers emphasize that both teachers and students need to be encouraged to be their intrinsic creative and authentic selves. Another theme is that students should be encouraged to improvise, theorize, elaborate, discuss, explore, create, conjecture, ask why, and not to just focus on “the right answer.”

PAP 2-2: ANABILIM UYEP Model: A Special Program Model for Self-Contained Classrooms for the Gifted in Turkey

*Ugur Sak*¹, *Goksen Akyol*², *Kamer Saglam*², *Tuba Aksoy*², *Sema Dora*², *Sinem Ozdek*², and *Yasemin Karakan*²

¹Anadolu University, Turkey; ²Anabilim Schools, Turkey; goksenakyol@anabilim.k12.tr; kamersaglam@anabilimk.k12.tr; tubaaksoy@anabilim.k12.tr; ugursak@gmail.com

The purpose of this talk is to describe the ANABILIM UYEP model developed for the education of gifted students in self-contained classrooms at the ANABILIM Schools in Istanbul and to report its effects on gifted students' development after attending these programs from the 1st grade to the 3rd grade. The ANABILIM UYEP model has been developed with a collaboration with experts based on the program model of the EPTS (Education Programs for Talented Students) founded at Anadolu University. The model has four components: identification, curriculum, assessment and teacher training. The identification includes the use of domain-specific and domain general criteria with varying threshold levels depending on students' performance on each criterion. Students are selected based on their performance either on general ability, academic ability or on more specific domains, such as the arts. The curriculum of the Program is four-corner, consisting of analytical, creative and practical abilities and the national standards. Differentiated programs are developed using 155 subskills (3rd level skills) of 45 broad skills (2nd level skills) of analytical, creative and practical abilities with and integration of the national standards in each grade level. In the self-contained classrooms, gifted students take five differentiated courses (analytical reading, science and me, the world of science, the world of mathematics, life studies, and thematic reading and creative writing) besides the mandatory courses described by the Ministry of Education from the 1st to the 4th grade. The assessment of the program for the last three years showed that gifted students had significant gains in their reading and mathematical abilities. This presentation will include a detail description of each component of the program as an exemplary model in the field of gifted education and research results obtained in the last years.

PAP 2-3: A Characteristic Artistic Plan?

Mia Frumau Van Pinxten

Developmental psychologist/psychotherapist/PhD student, The Netherlands;

frumaupsych@home.nl

KOKO is a way to get more visibility on yourself and create your development potential to utilize more opportunities. KOKO stands for Strength, Development, Opportunities and Obstacles, you might say a kind of SWOT for smart children and adolescents.

There is a huge psychological diversity among children with high potential (Robinson, 1981). Cognitive very smart people come in all shapes, colours and sizes (Passow, 1981). In my private practice I work for 25 years passionately together with intelligent, creative, sensitive, critical and wonderful young people. Together we focus on the strengths and weaknesses (development), opportunities and obstacles in their individual lives. I have developed a simple method to map this. Children, parents, teachers identify the individual strengths and weaknesses, opportunities and obstacles forces on a specially designed sheet. Child and (current) environmental factors play a dynamic and interactive role in the development of a child to adult. Child factors are the genetically growth potential in predisposition and the individual development history so far. These factors have an important place on the sheet. By partnering with parents, teachers and the young people themselves, we can arrive at a clear picture of the moment. Psychologists can complement this, when necessary, with a professional supplement by adding test results. At that point we have a characteristic artistic plan of an individual child or adolescent to self-actualisation. KOKO is developed for a specific group, the cognitively high intelligent with high potentials. For these children their precocious development leads to a different development than those of age peers, which can lead to feeling different. Specific barriers that these children encounter are discussed. KOKO is displayed in the form of a spiral. This represents resilience. The spiral may be pressed down (by the characteristics of the child, environmental factors, or the dynamic interaction between them) and this may lead to a halt in the developmental growth, regression and to the formation of rust spots at the points at which the spiral for too long a time is pressed.

PAPER SESSION 3: Innovations & Programmes 1

Best practice strand

Time: Thursday, 18 September: 10:30 a.m. – 12:40 a.m.

Location: Plečnik 5

Chair: Rebecca Kirrane

PAP 3-1: Digital Age Pedagogies and Gifted Students: The Flipped Classroom Approach

Rebecca Kirrane, Stuart Kehoe, and Colm O'Reilly

Centre for Talented Youth, Ireland, Ireland; rebecca.kirrane3@mail.dcu.ie

The Digital Age offers many possibilities for pedagogical innovation. With the increase in recent years of free, online courseware sites such as the Khan Academy, more and more educators have adopted a blended learning approach combining online resources with in-class activities. The flipped classroom approach is one such blended learning method which has gained much attention in educational weblogs and magazines as well as mainstream media (particularly in the US), being hailed by many as the next revolution in education. But is it more than a buzzword? In the flipped classroom, traditionally passive elements such as listening to didactic lectures or content presentations takes place outside the classroom so that class contact time can be utilised to engage students in deeper, more hands-on learning activities. This study sought to explore the flipped classroom approach as a method for teaching digital design in a gifted education context. It was populated by former or present students of the Centre for Talented Youth, Ireland (CTYI) at Dublin City University. Classes ran alongside the existing 8-12's enrichment programme and took place over six in-class sessions and five online sessions. Learners' reactions to the experience were largely positive, although motivation was an important issue for the gifted learners. The online element of the flipped class allowed learners to tailor their learning to their own interests and ability, while the focus of the in-class element on constructivist, learner-centred activities afforded opportunities to work on interactive group projects, developing both hard and soft skills.

PAP 3-2: Eureka: The Cross Cultural Program for Talent Development in the Digital Age

Rachel Zorman

The Henrietta Szold Institute, Israel; rachelz@szold.org.il

The Eureka program, developed by the Henrietta Szold Institute in Israel, addresses one of the most important challenges of the digital age: Thousands of children do not realize their potential due to socio-economic or cultural circumstances. The program addresses several issues: What comprises extraordinary talent in the digital age?; How to identify and nurture extraordinary talent among children from diverse populations? Program Objective: To provide opportunities for elementary school students from diverse backgrounds to develop extraordinary creative problem solving skills in science and visual arts. Principles Guiding Program Design: (1) Providing opportunities for all elementary

school students to explore science and visual arts in a series of problem solving experiences in the exposure phase in first and second grade. (2) Training teachers to integrate interdisciplinary problem solving skills in science and art, enabling application of knowledge and skills. (3) Training teachers to observe and assess talents via measures of ability, creativity and motivation. (4) Comparing student talent development in relation to their peer group and to their own baseline, as a basis for identifying and nurturing talent in the immersion phase in third to sixth grade. Program Outcomes: (1) A seven year follow-up has shown that assessment of science and visual art potential may predict future creative problem solving in these areas. (2) Program participants excelled in creative problem solving science and art, as demonstrated by above average achievement on international tests of science, and on national tests in reading comprehension and in concepts of visual art. (3) Feedback from parents and students indicated that the program opens new interest areas for participants. (4) Most program participants continued to engage in subjects related to the program at home. (5) A long term study of program participants is under way, with positive indications of impact.

PAP 3-3: The Gifted Education in the Digital Information Platform

Naif Kara

Izmit Bilim Sanat Merkezi, Kuruçesme, Turkey; naifkara80@gmail.com

Turkey aims to have the gifted students gain more conscious education and training program by increasing the competences of professional education of the teachers at the school in European and global trend because it has the deficiencies in this education field. In this regard, it requires taking the advantage of the experiences of developed countries in the field because the education for giftedness in our country is relatively less than the others. The technology has been improving rapidly and it influences the life style of people. This improvement is seen through the digital technology in our century the most. The students need this technology as a matter of course. The importance of the situation is understood one more time in this respect. This study aims to constitute a new web site by two languages

'Turkish and English' and games developing intelligence in the digital platform. It will support the education of gifted students at school. It is intended to implement the development strategy of gifted education in a sustainable and wider sphere of process. We could integrate the adaptable curriculum into our class, the development plan of the school, then into our experiences through 'Before-During-After Learning' by 'Project Based Learning', 'the teleconference and internet forums' with the teachers at gifted centres of the other cities called 'Bilim ve Sanat Merkezi' in Turkey.

PAP 3-4: Rethinking Epistemic Virtue. A Practical Example from the Leiden Pre-University Excellence Program

Jan Sleutels and Annebeth Simonsz

Leiden University, The Netherlands; sleutels@me.com

Academic skills and attitude are commonly understood in terms of epistemic virtues pertaining to individual students, as qualities of individual cognitive performance to be cultivated by students (e.g., accuracy, logical rigour, knowledge ability, independence, lucidity, critical sense). Over the past decade, however, traditional virtues seem to be

losing their appeal for younger generations. To members of the Net Generation the value of qualities such as knowledge ability or independence is no longer self-evident. We argue that changing technological landscapes call for new epistemic virtues. In the context of individual agents trying to maximize return on private cognitive capital, teaching strategies for stocking up the individual made sense. The Net Generation's context is different, however: shared cognitive capital is created in a process of communication and collaboration between changing groups of agents pursuing many different interests. This calls for a recalibration of epistemic virtue, which no longer pertains primarily to individual agents, but rather to groups of collaborating agents. We applied this theoretical perspective ("cognitive integration") when redesigning part of the curriculum of Leiden Pre-University College, a two-year excellence program for qualifying students in Dutch secondary education. The program's final module, aimed at fostering academic attitude and enhancing reflective skills, was redesigned to step up its effectiveness. The old format focused on cultivating individual excellence and assessing individual performance. It was replaced by a system of learning activities for cultivating communication and collaboration, with students working in groups, in pairs, and individually, using a system of formative and largely autonomous assessment. Moreover, students were explicitly challenged to reflect on the nature of science in a digitalizing world ("Science 2.0"), thus enhancing their self-awareness as members of the Net Generation. We will share our experiences with the new set-up, which had its first two runs in 2013 and 2014.

PAPER SESSION 4: Personality & Emotional

Scientific strand

Time: Thursday, 18 September: 10:30 a.m. – 12:40 a.m.

Location: Ravnikar Hall

Chair: Cathelijne Leenders

PAP 4-1: Dealing with Giftedness in Everyday Life

Cathelijne Leenders¹ and Kathelijne Van De Ven²

¹CBO Nijmegen, The Netherlands; ²Stedelijk Gymnasium Nijmegen, The Netherlands;

c.leenders@its.ru.nl

The impact of giftedness outside the school environment is a topic that is not often discussed. Highly gifted people encounter problems related to their giftedness not only at school, however, but also in everyday life. In this study, the following three questions are discussed: 1) How do gifted people experience their giftedness in everyday life? 2) What kind of problems do they encounter and how do they deal with those problems? 3) What kind of support is useful to handle these problems in a better way?

Based on a review of the literature and a number of interviews, the problems and the advantages that the highly gifted experience are clustered into four themes: 1) awareness of giftedness: the process from problem identification to problem recognition doesn't always go smoothly; 2) self-image: although this turns out to be mostly positive, insecurity, fear of failure, perfectionism and boredom may have a paralysing effect; 3) social

relations: gifted people often have to adjust to the level of others; 4) dichotomy between intellectual and practical; gifted people indicate that they need practical and clear skills that help them to participate in life and to engage themselves in things that – in their eyes – matter. This study shows that giftedness, besides a potential learning problem, can also cause problems in everyday life. Therefore, attention to the impact of giftedness on the life of a gifted person is advisable. Based on the insights from this study, a course was set up that focusses on the development of “self-responsible self-determination”. The course is meant to be a first step towards acquiring knowledge about giftedness, self-knowledge and self-understanding for gifted students. In addition, the course offers them the opportunity to share experiences in a congenial group. The first experiences with a pilot course at a secondary school are positive.

PAP 4-2: Examining Impacts of Psychological Trainings with Gifted Adolescents

Zsuzsanna Kovi, Emoke Bagdy, and [Zsuzsanna Mirnics](#)
KRE University Budapest, Hungary; mirnics.zsuzsa@gmail.com

As a program supported by Association of Hungarian Support Organizations for Giftedness, we provided a psychological assistance for 50 young gifted adolescents (aged from 14 to 18) for 14 months long. The assistance included 50 hours individual conversation with a clinical psychologist, 30 hours group workshops and a 5-day long summer-camp. We have identified eight areas of psychological problems: Environmental, Social, Emotional, Motivational, Cognitive, Self-esteem, Coping, Organizational problems. We have examined these problem areas with a series of questionnaires (both given to the psychologist and to the gifted young individuals). The clinical psychologists also provided a thorough case-description and filled out a questionnaire about each individual. Young individuals filled out Parent and Peer Attachment, Olson FACES-IV, State-Trait Anxiety Inventory, Child Depression, IPIP personality, Creativity, Flow, Motivation and Interests, Self-esteem test. The young gifted individuals liked to learn relaxation techniques, coping strategies and they reported how the non-criticizing, positive, encouraging atmosphere helped them to achieve personality development.

PAP 4-3: Emotion Issues in Giftedness: Overexcitabilities and Self-esteem

[Maria Pereira Da Costa](#) and [Marion Botella](#)
Sorbonne Paris Cité, University Paris Descartes, France; maria.pereira@parisdescartes.fr

In France, based on their practice, many psychologists involved in giftedness issues claim that giftedness emphasizes emotions and that gifted children and adolescents have lower self-esteem that could contribute to academic difficulties of some adolescents (Marsh, 1987). The present study examined the relationship between overexcitabilities, self-esteem, and giftedness. The overexcitability (OE) is defined as an intense energy in five domains (Dabrowski & Piechowski, 1977). The intellectual (need to understand), imaginal (vivid images and fantasy), and emotional (emotions felt intensively) OEs seem to be mainly involved in gifted individuals (Mendaglio & Tillier, 2006). Coopersmith (1964) defines self-esteem as the knowledge of the perceptions and opinions that an individual has on him- or her-self. Gifted individuals are usually considered as having a lower self-esteem than non-gifted (Pearson & Beer, 1990). After a brief statement of the

issue, we will present the main results of a study conducted on a sample of French teenagers. Gifted adolescents were matched with non-gifted teenagers schooled according to their age and gender. To assess OE, we used the OEQ2 which is a 50-items questionnaire (Falk et al., 1999). The French translation of OEQ2 has been developed by Botella et al. (submitted paper). In our study, gifted adolescents have higher scores on intellectual and imaginal OEs whereas they score lower on psychomotor OE; there is no difference between the two groups on sensual and emotional OEs. Gender differences have also been examined. Self-esteem was measured with the SEI (Coopersmith, 1984). Global results indicate that gifted adolescents have lower scores on social and familial scales than non-gifted.

PAP 4-4: Perfectionism in Chilean Gifted Students: An Exploratory Study

[Maria P. Gomez-Arizaga](#)¹ and [Andrea Gonzalez](#)²
¹Universidad San Sebastian, Chile; ²Pontificia Universidad Catolica de Valparaiso, Chile;
a.gonzalezu@hotmail.com

Perfectionism has been investigated by researchers in the field of education of the gifted because of the negative consequences perfectionism could have on gifted students' mental health and on their socio-emotional development. Researchers have found several results in the field, which have been sometimes inconclusive. Parental influences on perfectionism have not been addressed fully. The goal of this research was to explore the main characteristics of perfectionism in Chilean high school and college students and parental characteristics that influence on the type of perfectionism developed by the gifted student.

We used a mixed methods approach for this investigation that was conducted with 160 students participating in an enrichment program for the gifted in the city of Valparaiso, Chile. For measuring perfectionism, the MPS was used. The MPS was designed to measure both self-oriented and socially-prescribed perfectionism. For an in-depth approach to parental influences, we developed semi-structured phenomenological interviews with students and parents that were conducted (separately) after the administration of the MPS with parents of students identified as having maladaptive types of perfectionism and parents of individuals who had a healthy (adaptive) perfectionism. Results of the test application indicated that the majority of students had a healthy type of perfectionism. Also, students reported lower scores on the Organization subscale of the test (oriented to structure and order). Preliminary results of the interviews were that parents of students who had a tendency towards a maladaptive type of perfectionism emphasized excessively external indicators of academic success (e.g. grades), whereas parents of students with a healthy type of perfectionism were more learning oriented (learning-goal orientation). This investigation helped to shed light on the construct of perfectionism and its manifestation in the Chilean population. How to address this socio-emotional gifted students' characteristic remains a challenge for teachers and practitioners in the country.

PAPER SESSION 5: Lifespan

Scientific strand

Time: Thursday, 18 September: 10:30 a.m. – 12:40 a.m.

Location: Boardroom Risba

Chair: Lina Boulos

PAP 5-1: Alternative Training – Gifted Students and Lecturers both Manage a Dynamic Course in the Development of Thinking

Lina Boulos

Sakhnin College for Teacher Education, Israel; blina@macam.ac.il

The research relates to a joint management between gifted students and teachers in the course “Teaching for Thinking” in the “Excellent Students program” at Sakhnin College for Teacher Education. The students were full partners in the course management which included: planning, setting the objectives and schedule, and choosing the teaching and evaluation methods. These components changed from one meeting to another according to the students' way of learning and the reflective discussion which took place at the end of each session. This created a dynamic syllabus. Unlike other courses in the college, where the syllabi are fixed, the syllabus of this course had gone through some changes during the course. The research objective was to check the joint management of students and lecturers in the course which dealt with teaching for thinking and the influence of a process accompanied by reflection on the motivation of the participants and on the students' reflective thinking. The research population included two lecturers who deal with the field of thinking and the gifted students in the “Excellent Students program”. The theoretical basis of the content was based on theories of curriculum, reflection and motivation. Findings from quantitative and qualitative analyses of motivation questionnaires and reflection pages, at the beginning and end of the course, will be presented in the conference. The findings show a clear increase in the inner motivation of the students at the end of the course in comparison to the beginning. The dynamic nature of the course caused the increase of the students' motivation. The reflection analysis shows that the motive of the students in the course is their experience in sharing full partnership in determining the course content, teaching methods and assessment methods. The research suggests adopting a joint management approach as an alternative method in teachers training.

PAP 5-2: Honors in Northern Europe: Overview and Analysis

Marca Wolfensberger

*Hanzehogeschool Groningen, Utrecht University, The Netherlands;
m.v.c.wolfensberger@pl.hanze.nl*

Talent development has gained a higher place on the agenda of policymakers and educators in many countries over the last decade. However, focus is mostly on the identification and fostering of gifted and talented pupils in compulsory education, but not so much on students in higher education. Gifted children eventually become gifted

students. Offering honors programs is a best-known way to make provisions for these students. Surprisingly, a structured inventory of honors programs in Europe had never before been made. The project “Honors in northern Europe” is a first step. Why have honors programs for gifted and talented students been developed in some European countries and at certain higher education institutions (HEIs), but not in others? The differentiated development of programs so far is explained and future scenarios are explored. Eight factors influencing the development of honors programs are evaluated, including local educational philosophy and traditions, the selectiveness of the education system, competition between HEIs and cultural and political views towards excellence. This exploratory research is based on a first structured overview of honors programs in higher education in eleven northern European countries, which was prepared in 2014. Focus was on the development of programs in the Benelux area, the Nordic countries and the German-speaking countries. Policies were analyzed, key persons were identified and interviewed, and all HEIs were contacted. Using these methods, national overviews were created of the culture towards excellence, talent development policies and the current proliferation of honors programs. Honors programs have been identified in the Netherlands, Belgium, Germany, Austria, Denmark and Finland. In these and other countries a slow shift is visible, with more space available for excellence and talent development in national discourses. Inspired by American examples, the Netherlands are the first European country where honors programs have developed. From the late 1990s, an extensive infrastructure has been put in place, with all universities and most universities of applied sciences now offering one or more honors programs. Government subsidies through the national Sirius Programme have supported this development. This has led to a rich landscape of honors programs, with different aims, objectives and results. In the last decade, other countries have followed. Belgium, and especially its Flanders region, is catching up and honors programs are developing here. In the German-speaking countries a system is in place to support individual talented students from private foundations, both financially and in the form of programs and networks. In Germany, nine honors programs were found up and running throughout the country. In addition, the Excellence Network of Bavaria facilitates both financial support and a number of selective study programs. In Austria, programs are successful mostly at two specialized universities. In Denmark, talent development has firmly established itself as a policy goal over the last decade and honors programs have been established at six HEIs. The differentiated development of programs so far is explained and future scenarios are explored. Further plans for more research on this topic will be elaborated.

PAP 5-3: Sixty Years On: Reflections from Members of a 1952-53 Class for Gifted Students

Roger Moltzen

University of Waikato, New Zealand; rim@waikato.ac.nz

Late last year 18 former students of a gifted primary school class in the early 1950s came together to mark their membership of that class. At the time they were placed in the class their average age was 11 years and they spent the last two years of primary schooling in this class. This was the first occasion they had met as a group since graduating to high school. The former class member organising the reunion approached this researcher on behalf of the group offering the opportunity to participate in a research project.

This was accepted and the group completed a questionnaire, furnished biographical profiles and participated in a group interviews. The findings, which will be the focus of this presentation, provide unique insights into the life experiences of a group of gifted adults and build of the author's ongoing research in this area.

PAP 5-4: To Help a Gifted Child to Turn Into Successful Adult: Achievements Vs. Hidden Potential

Oleksandr Burov¹ and Mykhailo Pertsev²

*¹Center for Talent Development, Ukraine; ²Institute of Gifted Child, Ukraine;
a_burov@yahoo.com*

Introduction: It is known that not all gifted children realize their potential in life. Main reasons of this fact could be explained by two mistakes in work with gifted: (1) giftedness identification is based on achievements, but not on a real potential of a child, (2) abilities that correspond giftedness of a particular child can change over time and, as a result, can affect motivation and actual field of preferable area of work. **Purpose:** To analyze lesson learned from implementation of the computer system developed to assess and to predict field(s) of the most preferable application of children giftedness. **Methods:** The computer system was developed to assess and to predict field(s) of the most preferable application of children giftedness. Psychological tests were included into the system that evaluated an individual structure of intelligence, information "metabolism", vegetative nerve system balancing as well as strength, lability and functional mobility of nervous system. **Results and discussion:** They are discussed results of the system usage to monitor more than 4200 schoolchildren of grades 8 to 11, as well as particular cases (1) to reveal hidden ability to scientific work, (2) two cases when children who were graduating from school did not follow recommendations, entered to "wrong" specialty at university and had to left them, (3) three cases when graduated children recognized as children with high achievements in particular area, have changed preliminary defined future fields according to recommendations after test, recognized that it was right decision (monitored over ten years from school to work after university graduating).

PAPER SESSION 6: Learning

Scientific strand

Time: Thursday, 18 September: 10:30 a.m. – 12:40 a.m.

Location: Boardroom Grafika

Chair: Tessa H. S. Eysink

PAP 6-1: Inquiry Learning for Gifted Children

Tessa H. S. Eysink

University of Twente, The Netherlands; t.h.s.eysink@utwente.nl

With the arrival of more computers in primary education, also more opportunities for new instructional methods are born. An example is inquiry learning which can easily

be implemented in simulation-based learning environments. In inquiry learning, children investigate domains by asking questions, performing experiments, and drawing conclusions. Inquiry tasks have a high level of abstraction and complexity calling upon scientific reasoning. Therefore, they match the learning characteristics and instructional needs of gifted children. Research, however, has shown that inquiry learning in general is difficult and should be supported. It is unknown, though, whether gifted children experience problems too and if so, how much support is necessary for good results and how this influences their flow and mood. This led to a study in which the effects of support on the acquisition of knowledge of gifted learners and their flow and mood during inquiry learning were investigated. Sixty-four gifted primary school children were randomly assigned to one of three conditions differing in the amount of support given in an inquiry task in the electricity domain. Learners in the unstructured inquiry condition received three open inquiry assignments and experimented without receiving extra support. In the structured inquiry condition, learners were guided through the inquiry cycle by a structured worksheet while experimenting. In the exposed inquiry condition, a video was presented on which a teacher demonstrated relevant experiments while guiding learners through the inquiry cycle. Results showed that learners in the structured inquiry condition outperformed those in the other two conditions on the post-test. In addition, these learners experienced significantly more flow and were more motivated. The overall conclusion is that gifted children also benefit from support. In fact, they need this support to reach a positive mood, experience flow and perform well. Implications for the design of simulation-based learning environments will be discussed.

PAP 6-2: Didactic Strategies and Competencies of Gifted Students

Grozdana Gojkov, Aleksandar Stojanović, and Aleksandra Gojkov Rajić

Teacher Training Faculty, Belgrade; Preschool Teacher Training College "M. Palov", Vršac, Serbia; vsvaskatedrapp@hemo.net

The paper presents findings of an explorative research undertaken on an intentional sample consisting of 112 master students of pedagogy in Serbia, assumed to be potentially gifted and to have manifested academic giftedness, since their average mark during their studies was above 9.00. The intention was to examine the influence of didactic strategies and methods on competencies of gifted students and thus verify the hypothesis on the significance of certain didactic strategies and methods for contribution of higher education teaching to encouragement of intellectual autonomy of learning in the case of gifted university students. The method of systematic non-experimental observation was used as well as an assessment scale used by students to estimate the level of presence of the enlisted strategies, methods or procedures during studies and to what an extent learning and teaching strategies used in lectures, exercises, seminars, consultations addressed their needs and contributed to competencies development. When making a choice between didactic strategies, methods and procedures special attention was paid for the offered 52 methods to include 30 of those which refer to problem learning, creative approaches to learning, critical autonomy..., and for the list of 35 competencies to consist of 30 of those referring to independent thinking and are elements of critical thinking and indicators of, before all, approach to learning of gifted students. Basic finding refers to the following: according to gifted students, the least used didactic strategies are heuristic strategies, problem presentation and problem learning,

interactive learning according to method of dispute... encouraging search for new procedures, gaining insights into distant relations, leading to change of principles, creation of new ideas and relations, reshaping, discovery...; as a consequence the competencies they most expected were least developed, like, e.g.: natural-scientific thinking; systematic, methodological thinking; networked, complex and systematic thinking; self-reflexive and metacognitive thinking; critical thinking.

PAP 6-3: Learning Arrangements to Promote Technologies of the Self, Self-Regulation and Sense of Responsibility

Victor Mueller-Oppliger

*University of Education and Teacher Training of Northwestern Switzerland, Switzerland;
victor.mueller@fhnw.ch*

Gifted students need to recognize their over-average potentials, 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 have to deal with their specific situation, "to march to the beat of a different drummer", within their social and learning surroundings. Referred to constructivistic and social learning approaches students can be promoted to build up those competencies in "learning architectures" which will evoke self-directed and self-reflective learning. Within these learning arrangements students construct their different individual readings (Bourdieu), comprehensions and horizons of meaning corresponding to their learning- biographies and capabilities. Related to the subject contents, they build up personal learning strategies but also "technologies of the self" (care of the self, practices of the self), including learning attitudes and beliefs, motivational-volitional awareness, co-cognitive traits and executive competencies. Core activities in these learning-environments are learning dialogues: within the learning community to relate personal understanding to others; but also within a professionalized learn-coaching provided by teachers that fosters self-reflection, self-realization and shared responsibility as a social capital. The presentation introduces a concept of self-directed and self-carrying learning that enables gifted students to learn within their individual zone of proximal development. The learning architectures have been developed in collaboration with classroom teachers and educationalists. The activities of students and teachers were videotaped using full-view and head-mounted cameras. This allowed an in-depth exploration of micro-learning processes of the students in interaction with their learning support and interventions from their teachers. The research is focused on learning processes but also on changes in the comprehension of personalized learning and on the convictions and teaching behaviours of the teachers.

PAP 6-4: Emotional Resources of High-Achieving Students and Their Relation to Students' Use of Learning Strategies

Stefanie Obergriesser and Heidrun Stoeger

University of Regensburg, Germany; stefanie.obergriesser@ur.de

Students' use of learning strategies and self-regulated learning can be viewed as a form of resource management. By self-regulating, learners work towards realistic assessments of the endogenous and exogenous resources available to them for their learning activities.

They set learning goals in line with the quality and quantity of these resources to the end of achieving these goals through intensive learning processes characterized by constant monitoring and adaptation. Thus essential prerequisites for the optimal use of self-regulatory processes include valuing learning, dealing constructively with setbacks, persistence in the pursuance of goals, and volitional control. Emotions play an important role in all of these aspects. Viewing emotion as an endogenous resource, we examine the contribution it makes to students' use of learning strategies and self-regulated learning in a group of 117 high-achieving primary school students. In a first step, students were clustered according to their emotional resources. This resulted in two different clusters, one emotionally favorable cluster (n = 82), with students who reported experiencing a lot of joy and little boredom, anger or fear when working with texts; the other cluster was named emotionally unfavorable (n = 35), as students reported low levels of joy and high levels of boredom and anger when working with texts. Students in both clusters indicated experiencing only little anxiety, a fact that can be traced back to all of them being high-achieving students. The clusters were then compared according to students' learning preferences. Our results suggest that students who dispose of good emotional resources, e.g. who belonged to the emotionally favorable cluster, marginally prefer self-regulated learning and externally regulated learning behavior (e.g., parentally regulated or teacher-guided learning processes). Students who were assigned to the emotionally unfavorable cluster significantly preferred an impulsive style of learning. In a second step, we examine whether students' emotional resources influence their use of and success in a seven-week training program for self-regulated learning.

WORKSHOP SESSION 1

Possibilities & Challenges of Digital Age for the Gifted

Time: Thursday, 18 September: 10:30 a.m. – 11:30 a.m.

Location: Martin Krpan Hall

WOR 1: What the Beatles, Andy Warhol, and Robert Frost Have in Common: Cultural Relevance in the Adolescent Classroom

Kimberley Chandler and Jennifer Robins

The College of William and Mary, USA; klchan@wm.edu

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).

Time: Thursday, 18 September: 11:40 a.m. – 12:40 a.m.
Location: Martin Krpan Hall

WOR 2: A Development of Quality Indicators for Gifted and Talented Education in Slovenia

Tanja Bezić

The National Educational Institute of Republic of Slovenia, Slovenia; tanja.bezic@zrss.si

In Slovenia the Council of the Republic of Slovenia for General Education approved The Concept of Recognizing and Education the G/T students for the primary and secondary schools (1999, 2007). From 2002 onward the Expert Commission for Educational provisions for gifted and talented students is appointed at The National Educational Institute of Republic of Slovenia (NEI) and consists of representatives of academics, counsellors of NEI and proficient practitioners. One of the main goals of the Expert Commission is to provide a deliberately and systematic professional support for implementation of the Concept in schools. Among other tasks the Expert Commission developed original rating scales for teachers' identification of students' talents. To encourage schools' self-evaluation and raising more autonomous improvement of G/T education, the Expert Commission developed the Quality Indicators (QI) for G/T Education. Although we used the Quality Standards of NAGC/USA (2000) as a basic resource, our first QI from 2010 has been developed in collaboration with 10 secondary schools' project teams. In 2011 71% of schools' coordinators for G/T education rated them as very beneficial for the improvement of a quality of G/T education. Based on this acknowledgment we decided in 2013 to adapt them for primary schools. We invited schools from Maribor and Murska Sobota region and 62 of them joined us on voluntary base (about 2/3 of invited schools). In a workshop we are going to demonstrate some important steps in a process of co-creating quality indicators and we will present the results of a survey about how headmasters and teachers see the influence QI on schools' developmental planning, schools' action plans and on every day classroom work with the gifted and talented. In the near future the plan is to convert a "paper version" of QI to an online self-evaluation tool.

SYMPOSIUM 1

Possibilities & Challenges of Digital Age for the Gifted

Time: Thursday, 18 September: 10:30 a.m. – 12:40 a.m.
Location: Plečnik 1

SYM 1: Twice Exceptional – Gifted Children with Learning Difficulties

Organiser: Christian Fischer, University of Münster, Germany

Discussant: Lianne Hoogeveen, Radboud University, Center for the Study of Giftedness, Nijmegen, The Netherlands

Dealing with the topic of giftedness is a big challenge for the educational system, especially when occurring in combination with impairments in various forms. Those twice exceptional children often show a combination of different gifts and special (a) disadvantaged backgrounds (e.g. social economical disadvantages, cultural ethnic disadvantages), (b) disabilities (e.g. mental disabilities, physical disabilities), (c) behavioral difficulties (e.g. attention deficit (hyperactivity) disorders, autism spectrum disorders) or (d) learning difficulties (e.g. dyscalculia, dyslexia). The symposium will focus on the last mentioned group of twice exceptional persons in the form of mathematically gifted children with learning difficulties. The four presenters will cover different aspects as identification and promotion of twice exceptional children in their strengths in particular in the mathematical area, as well as their weaknesses especially in the linguistic area. Thus requires an interdisciplinary talent support network using the facilities of the digital age.

SYM 1-1: A Comprehensive Model of School Collaboration for the Identification of Twice-Exceptional Students

Anies Al-Hroub

American University of Beirut, Lebanon; aa111@aub.edu.lb

In this symposium, we will introduce a multidimensional comprehensive model for the identification of the untapped potential of mathematically gifted children with learning difficulties. We will discuss the apparent contradiction between mathematical giftedness and learning difficulties 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.

SYM 1-2: Mathematically Gifted, but Untalented in Linguistic Domains? The Perspective of Mathematical Giftedness

Friedhelm Käpnick

Westfälische Wilhelms-Universität Münster; kaepnick@t-online.de

In this presentation a case study will be reported that bases upon a complex and interdisciplinary approach: It focuses on a mathematically gifted child whose linguistic skills are developed on an exceptionally low level. Especially, the manner of this specific combination's development as early as at pre-school age will be emphasized. Moreover, it will be discussed how this specific combination influences determinants of the child's individual mathematical giftedness. As a consequence, there emerged some particularities regarding the child's processes of both learning and behaviour in the context of mathematical tasks. A couple of these particularities will be presented and illustrated by concrete arguments taken from the case study. Finally, some general conclusions on an appropriate identification and support of mathematically gifted children whose linguistic skills are developed on a low level will be deduced.

SYM 1-3: Mathematically Gifted, but Reading and Spelling Difficulties? The Perspective of Learning Difficulties

Christian Fischer

University of Münster, Germany; ch.fischer@uni-muenster.de

In this presentation the same case study of a mathematically gifted child with learning difficulties is examined from a linguistic perspective. To benefit from mathematical strengths to cope with the linguistic weaknesses different approaches are used as parts of an interdisciplinary talent support network: In addition to promoting the mathematical talent in extracurricular projects, a learning strategy-oriented program for gifted dyslexic children will be realized outside school to improve the reading and spelling skills on the background of the child's special asynchronies. This is combined to with an interest-based enrichment project of self-regulated learning in school which is accompanied by special qualified teachers and students teachers in gifted education and talent support. This case study is based on empirical results of the intervention effects based on the associated special needs in the different developmental areas.

POSTER SESSION

Time: Thursday, 18 September: 1:45 p.m. – 2:15 p.m.

Location: Foyer

PART 1: Possibilities & Challenges of Digital Age for the Gifted

Scientific strand

POS 1: Creativity in Intellectually Gifted Children and Gifted Children in Art: A Comparative Study

Natalia Shumakova

Psychological Institute RAE, MSUPE, Russia; n_shumakova@mail.ru

Creativity as an ability to produce novel, original work has been viewed in modern society as an important characteristic for professional success and personal development. Researches show that early identification of creative potential is an important condition for its further development. Actually we have limited the amount of information about the special features of creativity in the primary school gifted in different spheres. This study is focused on answering the question whether the creativity of intellectually gifted children of 7-8 years differs from creativity of their peers gifted in art, whether there are any peculiarities of creative thinking of intellectually gifted children and children gifted in art. A special instrument for creativity assessment (VFCT) in verbal and figural domain of activity was used to derive data from the children. The VFCT contains two divergent thinking tasks (verbal and figural), which measure fluency, flexibility, originality, elaboration and visual transformations. The children were showed the ambiguous figure and asked to make up as many different hypotheses of what it might be as they could (verbal task). After the verbal part the children were asked to draw as many pictures as they could using these very figures.

The total of 66 primary school students (51 intellectually gifted and 16 gifted in art, aged 7.5) participated in the research. The results showed that the creativity of the children gifted in art was manifested mainly in the figural task, while in their intellectually gifted peers - in the verbal task. The intellectually gifted children easily produce diverse ideas in the verbal plan, which leads to their high verbal fluency in comparison with their gifted in art peers. The gifted in art children focus on the ambiguous figure, reviving and spiritualizing it, which leads to high figural fluency, the originality and the elaboration. The results indicate the complex creativity assessment in primary school students. The particularities of creative thinking testing depend on the domain of giftedness of the child. This study was supported by Russian Foundation for Humanities (RFH), project No. 14-06-00564.

POS 2: Relationships between Perception of Pedagogical Practices for Creativity, Motivation, and Cognitive Styles

Eunice Alencar and Denise Fleith

University of Brasilia, Brasilia; eunices.alencar@gmail.com; denisefleith@gmail.com

Creativity is a central topic in the literature on giftedness, being a component of several models of giftedness. At the same time, the importance of the development of creativity as an objective of education has been increasingly recognized by scholars from different fields. This study investigates the relationships between perception of pedagogical practices for creativity, motivational orientations, and cognitive styles. Three hundred and sixty-five university students answered the Inventory of Teaching Practices for Creativity in Higher Education, the Assessment Scale of University Students' Motivation for Learning, and the Scale of Styles to Think and Create. Positive relationships were observed between the four factors of the Inventory of Pedagogical Practices for Creativity and intrinsic motivation, and negative relationships between the factors of the inventory and extrinsic motivation. Significant positive relationships were observed between the factors of the Inventory of Pedagogical Practices for Creativity and the cognitive styles, named Nonconformist Transformer and Relational Divergent. Stronger relationships were found between intrinsic motivation and the cognitive styles Nonconformist Transformer and Relational Divergent, and between extrinsic motivation and the style Cautious Reflexive, besides a negative correlation between extrinsic motivation and the style Nonconformist Transformer. Implications and recommendations for education of all students, included the gifted, are outlined.

POS 3: Creativity in Graduate Courses According to Professors and Students

Eunice Alencar¹ and Zélia Oliveira²

¹University of Brasilia; ²Catholic University of Brasilia; eunices.alencar@gmail.com

The importance of nurturing the creative talent across the various levels of education has been highlighted in the literature of giftedness. The benefits of creativity to the individuals and societies have also been increasingly recognized by scholars from different fields as well as the key role of higher education for the development of a knowledge society. In spite of this recognition, there is scarcity of empirical studies about creativity in graduate courses. This study addresses this issue. It examined graduate school professors and students' conceptions of creativity as well as the extent to which creativity has been fostered in graduate classes. Twenty Brazilian professors and 20 graduate students were interviewed and the data were submitted to content analysis. The results indicated that, according to professors and students, creativity is very important in the present world, in personal and professional life, and an essential element in graduate schools. They were aware that creativity helps to break boundaries, to deal with unexpected problems and with the challenges of society. Their creativity conceptions were related to innovation, paradigm change, overcoming of limits, problem solving, and characteristics of creative people. The students characterized creative professors as those who use diversified teaching practices, is dared, enthusiastic, flexible, besides having a good relationship with all students. Professors and students indicated several pedagogical practices that foster students' creativity and others that restrain it. Most professors declared there is a relationship between creative teaching and the development of students' creativity as

well as among creativity, learning and academic performance. They highlighted that the strategies conducive to creativity they practiced in the classroom were a result of their own inquiries and worries and not a consequence of their academic training. They also pointed out that creative professors and students are not always welcome in the university. In general, they agreed that any subject can be taught in a creative way. The results suggest that professors had limited knowledge of creative approaches to teaching and that much need to be done to ensure a culture in higher education, in special in graduate courses that support and encourage creativity among professors and students.

POS 4: The Relationship between Mathematical and Scientific Productivity

Nazmiye Nazli Ozdemir

Anadolu University, Turkey; nazmiyeozdemir@gmail.com

Throughout the history of gifted education, science and mathematics have been crucial issues because of their contribution to human development and technology. Although many research studies related to science and mathematics in the area of giftedness have been conducted up to now, it still maintains importance in this area. Because the reason for presence of the digital era is undoubtedly science and mathematics. In fact, now the most important one is productivity of science and mathematics in this era. Herein one question comes to mind; "is there a relationship between scientific productivity and mathematical productivity?" In this study, in order to examine the relationship between scientific and mathematical productivity, Creative Mathematical Ability Test (C-MAT) and Creative Scientific Ability Test (C-SAT) were administered to sixth grade gifted students who participated a program for scientifically and mathematically talented students. C-MAT is composed of five subtests in the area of numbers, geometry, measurement, algebra and statistics. On the other hand C-SAT is included five subtests in the area of biology, chemistry, ecology and interdisciplinary science. Both C-MAT and C-SAT contain 5 open-ended problems which measure fluency, flexibility and creativity quotient (CQ). In this study, the total scores of each test were compared. The participants of the study included 169 sixth grade students. The data were obtained from sixth grade talented students in the year of 2008-2014. The correlation between mathematical and scientific productivity scores was calculated. The results of the study will be shared in detail with the participants at the conference. Keywords: mathematical productivity, scientific productivity.

POS 5: Thoughts on Giftedness in the Digital Age and the Developmental Perspectives of the Individual, Gifted With the Emotional Dowry of the Family

Štefanija Jaksetič Dujc

(Dijaški dom Vič, Slovenia), Štefanija Marriage and family therapy, Slovenia;

stefanija.jaksetic@gmail.com

Despite the exceptional modern-day progress in digital connections, there is still a strong need for personal contact with individuals and families. Experts on the subject of counselling feel the need for more useful methods and techniques and if necessary therapeutic solving of personal, existential distresses of an individual and a family. The newest findings in science in the field of Psychology, Psychotherapy and Neuroscience

indicate the fact, that an individual is a system being, who by being born into a family system, enters the family relational and emotional dynamics which influences him/her in any further relationship. Independence and especially growing up therefore happens only through the individual awareness of the personal, intimate questions and connections with the family. Unconscious, inherited behavioural and emotional patterns, stemming from processes of relational and emotional connections with the members of the family of origin, unconsciously influence the individual's life. If the individual wants to face them, he/she should first become aware of them. One of the possible ways for the in-depth, intimate behavioural and emotional recognition and emotional awareness is also a therapeutic process. The poster will be based on the presentation of modern psychological and psychotherapeutical knowledge on feeling (emotions), behaviour and their intergenerational transfer. At the same time it will present the modern psychotherapeutical approach of Relational partner and family psychotherapy, the goal of which being recognition of relational and emotional endowment of an individual and the family together with emotional awareness.

POS 6: The Relationships between Intellectual Self-Concept and Psychosocial Adjustment in Gifted School Children

Elena Shcheblanova

Psychological Institute of Russian Academy of Education, Russia; elenacheblanova@mail.ru

There are currently two controversial positions: the first supports the notion that the intellectually giftedness by itself is a risk factor for psychosocial adjustment of adolescents; the second suggests that high intelligence increases the protective resource for individual resilience. The aim of this study was to investigate the relationships between domain-specific intellectual self-estimations and psychosocial adjustment in gifted students (73 boys and 91 girls aged 14.7 to 17.6; $M = 16.2$, $SD = 0.8$), scored in the IQ-test range from 110 to 135. We used the Cognitive Ability Tests with verbal, quantitative, and nonverbal scales; the Checklist for self-estimations of students' eight intelligences (based on Gardner's multiple intelligences theory), school marks, and peer nomination strategy to estimate sociometric status among classmates. Besides, The Scale of Psychosocial Adjustment by C. Rogers and R. Dymond (101 items in Russian version) was used. The data demonstrated complexity and nonlinearity of relationships between the variables of intellectual self-concept and various aspects of psychosocial adjustment. The internal indicators of psychosocial adjustment in the students were interconnected more with subjective self-estimations of domain-specific intelligences, than with the objective criteria (the test scores or/and school achievement). The most successful adjustment was noted at the students with high self-estimations of interpersonal and intrapersonal intelligences. On the contrary, sociometric peer status in much bigger degree was guided on external criterion – academic achievement of the students, than on their self-estimations. Besides, higher sociometric status corresponded also to higher level of psychosocial adjustment. The implications of the findings for future research and for the counselling of gifted children are discussed. The study was supported by the Russian Foundation for Humanities, project No. 14-06-00564.

POS 7: Academic Self-Concept in Gifted Adolescents with a Different Ratio of Verbal and Non-Verbal Abilities

Elena Shcheblanova¹ and Svetlana Petrova²

¹Psychological Institute of Russian Academy of Education, Russia; ²Moscow State University of Psychology and Education, Russia; elenacheblanova@mail.ru

This paper is devoted to the study of cognitive and personality characteristics of intellectually gifted students with a different ratio of verbal and non-verbal abilities at various secondary school grades. The sample included 280 students of V (aged 11-12), VI (aged 12-13); VII-VIII (aged 13-15) and IX-X (aged 15-17) grades of Moscow gymnasium. IQ of all students was above 115. Three approximately equal groups of the students were selected in each age: with relative lag of verbal abilities; with relative lag of non-verbal abilities, and with equality of verbal and non-verbal abilities. The Cognitive Ability Tests (CAT), Raven Advanced Progressive Matrixes (APM), the verbal and figural Tests of Creative Thinking (TCT), the questionnaires on anxiety and academic self-concept, and school marks were used. The results obtained demonstrated the certain school difficulties in the students with high general intelligence, but relatively lower non-verbal and especially verbal abilities. Distinctions among the students with the different proportions of verbal and non-verbal abilities observed not only on the CAT-variables, but also on the APM and TCT, academic achievement, as well as personality characteristics. It was shown, that the combination of advanced intelligence and school underachievement could result in the students with lower verbal abilities to inadequate academic self-concept and increased anxiety, and then to personality and disciplinary problems as well. So, self-estimations of abilities to some school subjects, especially to Russian and Foreign languages, in this group were significantly higher, despite the poorer school marks, than in their classmates. The obtained data allow to assume that a contradiction between high academic self-concept and lower achievement can be a source of the increased anxiety in the gifted students with relative lag of verbal intellectual abilities. This study was supported by Russian Foundation for Humanities, project No. 14-06-00564.

POS 8: Attitudes toward the Gifted, Emotional Intelligence and Implicit Theories of Intelligence – Comparison of Croatian and Slovenian Students

Polona Gradišek¹, Sanja Bradić², and Barbara Rončević-Zubković³

¹Faculty of Education, University of Ljubljana, Slovenia; ²Gimnazija Eugena Kumičića Opatija, Secondary school, Croatia; ³Department of Psychology, Faculty of Humanities and Social Sciences, Rijeka, Croatia; polona.gradisek@pef.uni-lj.si; sanya.taregami@gmail.com; roncevic@ffri.hr

Implicit theories of intelligence represent one's beliefs about intelligence which can have a significant impact on one's attitudes and behaviour toward gifted students and gifted education. This relationship seems important in education of future teachers, since educators can play an important role as role models in shaping their student's attitudes toward giftedness and gifted education. Emotional intelligence, as one of the key competencies of future teachers and educational experts, plays a significant role in the development of these attitudes as well. The aim of the present study is to explore the relationship between attitudes toward the gifted and gifted education, emotional intelligence and some aspects of the implicit theories of intelligence in the sample of Croatian

and Slovenian students. Attitudes of students toward the gifted are being assessed with the 20-item questionnaire Opinion about the Gifted and Their Education, consisting of four subscales: support, elitism, acceleration, and self-perceptions. Emotional intelligence of students is being measured with the Emotional Intelligence Questionnaire (UEK-27), consisting of three subscales: perceiving and understanding emotions, expressing and labelling emotions, and managing and regulating of emotions. To explore students' beliefs about intelligence, some items of the Implicit Theories Questionnaire (ITI-VIII) and a three-item questionnaire for implicit theories are being used. Preliminary analyses on the sample of 80 students, future teachers, have shown that students, who support the gifted education, do not perceive giftedness as a sign of elitism and that students, who perceive giftedness as elitism, are not in favour of acceleration. Surprisingly, Croatian students that perceive themselves or their family members as gifted perceive gifted education as elitist. Students' attitudes toward the gifted and gifted education are neither related to emotional intelligence of students nor to their implicit beliefs about intelligence. Differences between attitudes of Croatian and Slovenian students are discussed.

Best practice strand

POS 9: The Role of Social Pedagogues in the Process of Dealing with Gifted Pupils

Alenka Polak and Barbara Vrbič

Faculty of Education, University of Ljubljana, Slovenia; alenka.polak@quest.arnes.si

In each society gifted pupils should represent the great potential and human resource for future development; for that reason the great professional concern and systematic professional approaches should be implemented to satisfy their special needs. In the Slovenian school system, counselling service is provided in almost every school and one of the professional profiles who can deal with the gifted pupils beside the pedagogue, psychologist, social worker, special and rehabilitation pedagogue is also the social pedagogue. Teachers and the members of school counselling service - should be familiar with the numerous characteristics, behaviour and problems that gifted pupils can have, with the process of recognising and identifying them as well as with different approaches and activities to deal with them to promote their potentials. In the empirical study presented below, the main research goals were to investigate: (1) what problems of the gifted pupils have been perceived by the social pedagogues, (2) what activities to promote the development of giftedness of pupils are carried out in schools, (3) with what open professional issues are social pedagogues dealing on the area of gifted pupils, (4) how they perceive their own competences to deal with gifted pupils and (5) what knowledge or skills they need in the future to deal more competently with gifted pupils. The sample of the study consists of twenty-six social pedagogues who work daily in schools as counsellors. In the questionnaire they report that their work on the field of giftedness includes recognition and identification of gifted pupils; writing of individualized programmes and evaluation of the accomplishment goals regarding these programmes, coordination between pupils, teachers and parents, as well direct educational and counselling work with the gifted pupils. Social pedagogues involved in the study agree that more activities should be implemented; they also perceive themselves as well equipped

with competences to work with gifted pupils. The findings obtained will be an important contribution to discussions on the role of social pedagogues in schools as well as on the education of social pedagogues.

POS 10: A Literature Review for the Use of Dynamic Assessment with Gifted Students

Selin Bozbey

Anadolu University, Turkey; bozbeyselin@gmail.com

Gifted individuals have different cognitive and developmental characteristics from their peers even themselves. Because it is difficult to classify the distinct characteristics which are only belonging to giftedness. Therefore identification of gifted individual is a really difficult process. There is some kind of assessment approach for the identification of giftedness. One of them is dynamic assessment which has gained popularity in this area. The purpose of this study is to review the use of dynamic assessment with the identification of gifted students. The topics which are dynamic assessment method, the efficiency and importance of the use of dynamic assessment with gifted students stand out in the literature. Hence in this poster presentation, it will be examined according to these topics.

POS 11: Parenting Gifted Education: an Italian Experience

Sara Peruselli¹, Simona Traverso¹, Daniela Miazza¹, and Anna Maria Roncoroni²

¹AISTAP- Italy; ²Italian Association for Gifted and Talented Students; gifted@roncoroni.eu

As the literature demonstrate, parental psychosocial health and parenting programs can have an effect on emotional and behavioural adjustment and well-being of gifted children (e.g. Bennett et al., 2013). In particular, parents play a pivotal role in the developmental of gifted and talented, both in nurturing the academic performance and in facilitating their social-emotional development (e.g. Freeman, 2001; Gross, 2004; Rubin & Chung, 2006; etc.).

In the current Italian context, the knowledge of giftedness and talent is still very poor if not absent, in both education and school that family. For this reason we think that it is important and useful for a parent having the possibility to compare his experience with other parents of gifted or/and with an expert. Through our experience with groups of self-managed online sharing and groups of parents conducted by psychologists we found, by giving to parents a brief questionnaire, the usefulness of the exchange of information, concerns, problems, resources etc. by giving the possibility to create an important and supportive network real and/or virtual. At a second time also gifted children benefit from the interactions between parents, as shown by some cases briefly presented.

POS 12: Supporting Parents of Gifted Children: A SENG Model Application (The "Education to Talent" Project in Veneto Region - Italy)

David Polezzi¹, Massimo Ronchese¹, Martina Pedron², [Martina Brazzolotto](#)², Daniela Lucangeli², and Pier Antonio Battistella¹

¹U.O.C. NPIA ULSS 16 Padova; GATE-Italy Association (Gifted and Talented Education – Italy); ²Department of Developmental Psychology and Socialisation – University of Padova and C.N.I.S. National Association; GATE-Italy Association; martinabrazzolotto@gmail.com

Education to Talent is a project, financed by Regione Veneto - Italy, which aims to promote and support psychological wellness in gifted children. This is consistent with recommendation suggested by European Union (n. 1248 of Parliamentary Assembly of European Council, 1994). Several partners are involved: Neuropsychiatric for Children and Adolescents Service ULSS16 Padova, Department of Developmental Psychology and Socialization – University of Padova, C.N.I.S. (National Coordination Specialist Teachers Association), Centro Produttività Veneto, Omnicom Association. Education to Talent is the first project in the whole Italian country. A major goal of the project is to support parents of gifted children, throughout coaching groups which help parents in improving scholar, social as well as personal wellness. We apply SENG Model in order to let parents better understanding children behaviour as well as learning new and helpful strategies which can be easily employed in the family environment. Parents weekly attended supporting Coaching group for ten meetings that lasted approximately three hours each one. Efficacy perception and educational satisfaction of parents have been measured before and after Coaching Group using PSI - Parent Stress Index (Abidin, 1995) and PSOC - Parent Sense of Competence (Mash & Johnston, 1989). While no differences have been found in the parental sense of competence, PSI has revealed a significant difference in the "parent-child dysfunctional interaction" subscale ($p < .05$). The scoring in this subscale was lower after the coaching group, suggesting that parent-child interaction became more functional after intervention. These data provide evidences in favour of the efficacy of coaching group in parents of gifted children.

POS 13: The Attitudes to Education for Teachers of Gifted Students in the Czech Republic

[Jana Škrabánková](#) and [Renata Kovářová](#)

University of Ostrava, Czech Republic; jana.skrabankova@osu.cz; renata.kovarova@osu.cz

The presentation will offer an overview of the current state of training of future teachers for the presence of gifted children in Czech schools. The overview relates to the teaching faculties of state universities in the Czech Republic. The basic requirement of the stakeholders educators is to include the education of gifted children as an integral part of teacher education programs at faculties of education in the Czech Republic. So far, it's different.

POS 14: Potentially Gifted Preschool Children Care: Kindergarten Rijeka model

[Ljiljana Brašnić](#)¹ and [Jasna Borbelj](#)²

¹Dječji vrtič/Kindergarten "Rijeka", Croatia; ²Specialized program for gifted children "Bistrići", Rijeka, Croatia; jborbelj@gmail.com

With this poster presentation we will present an example of approach/work with potentially gifted, preschool children in kindergarten "Rijeka", i.e., we will describe our practice of recognizing and responding to their particular needs in regular and specialized kindergarten programs. Actually, the process of identification is concurrent with process of supporting and nurturing giftedness. Besides identifying and supporting giftedness, we occasionally provide in-service training for kindergarten teachers and parent counselling. Special provisions within regular kindergarten groups include challenging curricula and pedagogical support, different and rich materials and experiences, demanding didactics, individualized approach, opportunities to explore, create and/or contribute to classroom projects. Instructional and learning environment is designed to meet children's interests and channel their abilities into competencies (knowledge-skills-creativity). In 1998, kindergarten „Rijeka“ started a specialized program named "Bistrići" which supports the development of potentially gifted children. The goal of this program is the identification and fulfilment of the particular needs of a potentially gifted child in a small group of children (5-7 children). These children are of similar interests and with highly developed cognitive and verbal abilities. Through a variety of activities and contents we aim to achieve the following outcomes: 1) Stimulation of cognitive development, which includes enhancing thinking skills and fostering curiosity, encouraging scientific way of thinking (speculation on possible outcomes, verification, discussion and drawing conclusions) through demonstration of age-appropriate science activities. 2) Encouragement of creative thinking (strengthening imagination, using open-ended questions to promote speculations and generating numerous and different ideas and possibilities). 3) Development of social and emotional competence (the appreciation of following types of behaviour: taking the initiative, supporting proactive attitude toward the world, practicing effective verbal and nonverbal communication, encouraging persistence and resilience to failure, developing tolerance to frustration and loss, recognizing and regulating one's own emotions, as well as inducing cooperation, optimism and sense of humour.

PART 2: Trends in Research and Theory of Giftedness

Scientific strand

POS 15: Validation of Italian Version of Gifted Rating Scales - School Form. Preliminary Data

*Angela Beretta*¹, *Steven Pfeiffer*², and *Maria Assunta Zanetti*¹

¹University of Pavia, Italy; ²Florida State University, USA; angela.beretta01@ateneopv.it

The challenge of correctly identifying gifted students has long been understood to be one of the most critical issues to be resolved (Cramer, 1991; Pfeiffer, 2003). This is particularly true in Italy where gifted education has experienced insufficient support (Zanetti, Renati, & Beretta, 2013). This study will set out to test the reliability and validity of an Italian translation of the Gifted Rating Scales - School Form (GRS-S) with a sample of Italian elementary and middle school students. The study will examine the scales' reliability in comparison to reliability results from the U.S. standardization sample. The criterion validity was tested by correlating student's scores on the scales with student academic achievement, as measured by classroom grades. Student scores on the scales were correlated with the INVALSI, the Italian local normed-referenced academic achievement test. The convergent validity was examined by comparing student's scores with scores on the GAI of WISC IV. The complete sample will be of 380 students. The presented data are partial and only refer to the sample of 230 elementary school students (mean age 8.37, SD = 1.35), 114 males and 116 females. Reliability analysis yielded excellent reliability results, with a values ranging from .93 to .99. Several positive and significant correlations were also found between student scores on the GRS-S and the INVALSI. These preliminary results provide evidence for the convergent validity of the Italian-translated GRS-S. Correlations between the Italian version of the GRS-S scale scores and intellectual ability scores from the GAI of WISC IV revealed positive and significant relationships ($r = .61$). Preliminary findings suggest that the Italian GRS-S scores retain appropriate psychometric properties; results provide preliminary support for the Italian version of the GRS-S as a reliable and potentially useful screening measure for use in the identification of Italian gifted students. These findings are consistent with the results of other recently published GRS validity studies conducted in China, South Korea, Puerto Rico, and Turkey.

POS 16: Psychometric Validity of the Creative Scientific Ability Test

Bahadır Ayas

Research Assistant, Turkey; bahadirayas@gmail.com

In this presentation, two studies about construct validity of Creative Scientific Ability Test (C-SAT) will be presented. In the first study explanatory factor analyses (EFA) was conducted and in the second study factor structure found in the first study was tested with confirmatory factor analyses (CFA). C-SAT was developed by Ayas and Sak (2008) to assess the creative potential in science through grades 6 to 8. There are five subtests in different science domains which are biology, physics, chemistry, ecology and interdisciplinary. The task is hypothesis testing, evidence evaluation and hypothesis generation. In the scoring procedure fluency, flexibility and composite creativity scores were calculated.

288 6th grade students participated in the first study and a one general scientific creativity factor was found. 693 6th grade students participated in the second study and the one factor solution was confirmed from the findings of CFA. Research findings show that the C-SAT can be used as an objective measure of scientific creativity both in research and in identification of scientifically creative students.

POS 17: Using Epistemic Synchronization Index (ESI) to Distinguish Gifted and Regular Students' Knowledge Elaboration in CSCL

Marca Wolfensberger

Hanze University of Applied Sciences, The Netherlands; m.v.c.wolfensberger@pl.hanze.nl

Higher-order thinking is important for problem-solving in Computer-Supported Collaborative Learning (CSCL) (Weinberger & Fischer, 2006). So far, very little research is able to capture the dynamic progress of the evolvement of individual epistemic engagement in CSCL. Questions such as how to distinguish the knowledge elaboration process between gifted and regular students remains a black box. This research aims at exploring a new research method to track students' epistemic engagement during online collaborative problem-solving in higher education. Based on three cognitive modes from Kumpulainen and Mutanen (1999), a coding system to measure students' epistemic engagement was developed and termed as "Elaboration Values" referring off-task (value = -1), on-task (value = 0) and elaboration (value = +1) activities (Ding, 2009, 2010). The current study was conducted in a university in The Netherlands. Two female bachelor students participated in seven online collaboration sessions, solving statistics problems in an online text-only chatting room. Each online communication message was coded into Elaboration Values. We developed a series of equations to arrive at an Epistemic Synchronization Index (ESI). The value of ESI ranged from 0 to 1. The smaller ESI, the more symmetrical of students' epistemic engagement. Doing so helped researchers to (1) distinguish whether gifted students contribute more higher-order thinking into problem-solving, (2) how their epistemic involvement is different with that of regular students in CSCL, and (3) how the learning partner is influenced by the higher-order thinking of gifted students. The method of ESI may shed light on a deeper understanding of the knowledge elaboration process of gifted students.

POS 18: Portuguese Validation of the Teaching Practices for Creativity in Higher Education Inventory

*Maria De Fátima Morais*¹, *Leandro Almeida*¹, *Ivete Azevedo*², *Eunice Alencar*³, *Denise Fleith*³

¹University of Minho, Portugal; ²Torrance Center, Portugal; ³University of Brasilia, Brasilia; denisefleith@gmail.com

It has been much discussed the role of the higher education in training professionals prepared to deal creatively with the challenges that the modern world imposes on them. In the contemporary and complex world, a premium is placed on creativity, and the individual with the ability to think creatively, who dominates efficient strategies to solve unpredictable problems, is highly valued. However, it has been noted a scarcity of empirical studies and a lack of standardized instruments that assess the extent and frequency to which teaching behaviours promote the expression of creativity in higher education. Therefore, teaching practices for the promotion of creativity emerge as a target to be

investigated, especially considering students' perceptions. The purpose of this study was to validate and adapt, to the Portuguese context, the Teaching Practices for Creativity in Higher Education Inventory, developed in Brazil. Five hundred and eighty-two university students (59% females and 41% males), from three distinct areas – Arts/Humanities, Science/Technology, Social/Human Sciences –, participated in the study. Their average age was 23.41 years old. The results pointed an instrument of 22 items to be answered on a 5-point Likert scale, ranging from strongly disagree to strongly agree, that assesses four factors (Incentive to New Ideas, Climate for Expression of Ideas, Interest for Students' Learning, and Evaluation and Teaching Methodology). The psychometric properties of the instrument, in terms of precision and validity, proved to be adequate. The 4-factor solution explained 48.51% of explained variance. The alpha reliability coefficients varied from .72 to .93. The Teaching Practices for Creativity in Higher Education Inventory constitutes a useful instrument for research and diagnostic of teaching behaviours that promote the development and expression of higher education students' creative abilities. It can also be used to give professors feedback on their teaching practices as perceived by students.

POS 19: Investigation about Mentoring Studies Effects on Gifted Students

Fatih Tokmak

Anadolu University, Turkey; fatihtokmak55@gmail.com

The main aim of this study is to investigate mentorship which is an education method that has been used for centuries by referring the related literature. Nowadays, even if it has been used in many areas from business world to schools, there is a little of scientific based application in Turkish education. Scarcity of the scientific support about the issue in Turkey is the motive of this research. One of the reasons of this scarcity is the majority of scientific studies and published research has been done on application of business world. In this research, firstly definitions, history and best examples of educational application around world were given, then the effects of mentoring studies with gifted students were investigated. Within the scope of the study, publication and scientific articles from 1978 to 2013 have been tried to obtain from Eric, EbscoHost, Gifted Child Quarterly, Gifted Child Today, Roeper Review databases by using the keywords; mentor, mentoring, mentorship, gifted mentoring, mentorship and gifted, effect of mentorship. In the light of the obtained data, the suggestions about general mentoring practices in education and a perspective particularly about the mentoring programs for gifted students in Turkey are presented. In general, mentorship must be entered to formal education process; specifically special mentoring programs must be prepared for gifted and talented students to bring out their high potential ability.

POS 20: Twice Exceptional Children Before Entering School: Questionnaire for Detecting Children at Risk for SLI and SLD

Martina Ozbič, Jerneja Novšak Brce, and Damjana Kogovšek

Faculty of Education, University of Ljubljana, Slovenia; jerneja.novsak@pef.uni-lj.si

To be successful children need to develop a whole range of skills before entering school. Some countries have a long tradition of using different kinds of questionnaires before entering school, but this practice is not systematically established in our country. Presented

Slovenian questionnaire in an indirect way assesses and describes the child before starting school in all the areas that are important for education, focusing on demanded skills and strengths (as indicators of exceptionality). The reliability of the questionnaire is 0.99 for the part A (skills, 104 items) and 0.94 for the part B (strengths, 16 items). We analysed 540 children aged 3 to 7 years. The factor analysis (Oblimin rotation, delta = -0.1) (73.89% of variance explained) shows 11 factors (KMO = 0.98, Bartlett's test sig. = 0.00): (1) language/speech/communication/verbal memory and lexical retrieving factor; (2) constraint, concentration and rules-governed behaviour factor; (3) visual-graphical, serial, figurative factor; (4) social, interactional factor; (5) mathematical, colour concept-name, time and space orientation and concept, and numerical factor; (6) meta-literacy, meta-linguistic, phonological awareness factor; (7) motor and coordination factor; (8) organization, orderliness and assertiveness factor; (9) meta-cognitive and rhyming factor; (10) factor of autonomy in task achieving/focusing behaviour; (11) socio-pragmatic, attention, concentration and regulation of behaviour factor. In part B for strengths 65.24% of total variance is explained (2 factors): the early development factor (55.94%) and asynchronicity, intensiveness, social loneliness, sensitiveness, frustration and perfectionism factor. The results showed that questionnaire expose different profiles of children (non-harmonic profile, high-harmonic, low harmonic profile, typical profile), in accordance with co-morbidity, typical for particular groups of learning disabilities, like problems of coordination and attention and verbal abilities, gifted people with specific learning disabilities ... The presented questionnaire is useful for detection of high-risk characteristics that could lead to learning difficulties as well as instrument for detection of strong compensation fields.

POS 21: The Construction of the Discourse of Giftedness in Media Texts in Estonia

Halliki Põlda

Estonia; halliki.polda@gmail.com

The aim of the study is to describe the diachronic construction of the discourse of giftedness in print media and to analyse the changes within the discourse and its essence in digital era. Furthermore, the study attempts at indicating how media discourse relates to the understanding of the essence of gift and giftedness which develop parallelly in the field of science. Nowadays, the topic of giftedness has become of great significance (Kaufman & Sternberg, 2008; Uusikylä, 2005) and it is also a topic widely reflected in media (Radford, 1998; Meckstroth & Kearney, 2007). In media texts, identities and roles are constructed with the help of specific vocabulary and social descriptions (McQuail, 2007; van Dijk, 1998), the ideologically designing the society is inevitable in media (van Dijk, 1998).

The central issues of the study are: 1) When did the notion of giftedness come in use in print media in Estonia and how the discourse of giftedness is constructed in historical media texts? 2) How are the different sides of the concept of giftedness and problems related to giftedness presented in media texts in the digital era and into what will the discourse develop in nowadays? The study focuses on journalism corps texts (ERC) from 1890.–1990 and on their comparison with the texts of the digital era which have been found via Delfi.ee – the largest web portal in Estonia. By combining the quantitative content analysis (Krippendorff, 2004) and critical discourse analysis (Fairclough, 2001,

2010), the author comes to a conclusion that the media discourse of giftedness starts already in 1890s and its dynamics are comparable to that of a scientific discourse. However, the discourse of the digital era is strongly related to the issues of ideology and power - giftedness has rather become a power tool for bureaucracy and gifted people products in labour market.

Practice strand

POS 22: Preparation of Natural History Collection as an Enrichment Activity to Promote Gifted Elementary School Students: A Case Study

Gregor Torkar

Faculty of Education, University of Ljubljana, Slovenia; gregor.torkar@pef.uni-lj.si

Gifted children only can develop their potential effectively in an environment that is able to optimally motivate them. In this paper a case study of an enrichment activity for potentially gifted elementary school student is presented. This paper highlights the process of preparing natural history collections of bird feathers and discusses the learning outcomes this enrichment learning activity for a potentially gifted fourth-grade student. The purpose of the longitudinal case study was to investigate multi-faceted relationships between the student, his family, his school and teachers, informal educational institutions (ornithological society, zoological gardens ...) and me (as a student mentor and researcher of the case study concurrently). Triangulation of methods was used. Data collection instruments used were: unstructured interviews, informal interviews, e-mail communication and observation with participation. Some deficiencies in communication between described actors were recorded. There were some miscommunications in the school/teacher-student relationship, mistrust in the relationship school-parents and missed opportunities in collaboration between formal and informal educational institutions. The findings from this case study were summarized into key conclusions that can be understood as instructions (lessons to be learned) for working with gifted students. Schools are obliged to provide an optimal learning environment for gifted students, but it is very difficult for them to fulfil all the special needs of the gifted, primarily because of their specialty and uniqueness. Therefore, this described case study speaks in favour of more systematic inter-institutional cooperation in working with gifted students and closer collaboration between school, parents, informal educational institutions and the student's mentor.

POS 23: Chain Experiment

Nina Verdel¹ and Jurij Bajc²

¹Student at University of Ljubljana, Faculty of Mathematics and Physics; ²Faculty of Education, University of Ljubljana, Slovenia; nina.verdel@gmail.com

We demonstrate the activity/project that we carry out in Slovenia for ten years. It is a practical activity that addresses mainly pupils at the end of primary school – in Slovenia this is at the age between 12 and 15. The activity involves aspects that are not typical for main stream educational processes and this gives excellent opportunity to gifted children to express themselves in a different way. Looking from outside, the main goal

of the project is that a group of pupils constructs and builds a mechanical contraption that satisfied well defined constraints on how it must begin and end. This enables the deployment of an arbitrarily long chain of succeeding contraptions that fit together as one long device that “does something”. The name “chain experiment” reflects the domino like execution of the set of contraptions. As the activity was first carried out in 2004 as a part of the World year of physics 2005 celebration, a group of pupils should include some interesting physical phenomena in their contraption. This is the framework of the activity as seen from outside.

The inside content of the activity is much richer. First of all, the pupils can let go their imagination regarding what physical concepts the contraption shows and also what the story behind the contraption is. Secondly, the project is done in a group. This stimulates different abilities of the members of the group to be more pronounced or developed. Thirdly, such a project mimics a real life situation by first searching for an idea and then putting the idea into a concrete realisation. Last but not least, the group should be composed of gifted and average pupils in order to get the best results. As gifted pupils have on one hand similar needs as all children and are on the other hand often more demanding or have specific needs in particular aspects of life, such a medium term mixed abilities group project is well suited for them. The group has a goal that is well constrained, but has a lot of freedom in actual content, so some children can participate with ideas and solutions of the problems that pop up along the way from the idea to the end product – the contraption. At the same time the pupils with different abilities can contribute more by making parts of the contraption or by organizing the work of the group or simply by discussing different options when deciding about and building the contraption. The activity provides a sort of spontaneous social setting that is challenging enough to motivate the gifted pupils and gives them at the same time a feeling of safety as members of the group in which the tasks and responsibilities are divided among all members. In the demonstration we will show some examples of the contraptions, explain their operation, and discuss how the pupils participated and what they gained by participating in a particular group.

POS 24: Inquiry-Based Excellent Learning: Scaffolds for the Gifted

Marieke Peeters¹, Jo Verlinden², Lana Goossens³, and Lianne Hoogeveen⁴

¹Radboud University Nijmegen, Science Hub, The Netherlands; ²BCO Onderwijsadvies, The Netherlands; ³Science education HUB Radboud University, The Netherlands; ⁴Radboud University Nijmegen, The Netherlands; l.goossens@science.ru.nl

Based on a pilot study with 10 schools, we developed an approach with different kinds of scaffolds for teachers so they can learn how to differentiate in inquiry-based science education (IBSE) between regular and gifted children in one classroom. The cycle of IBSE consists of the steps: introduction/confrontation; exploration; designing an experiment; conducting an experiment; concluding; presenting, and elaborating/ broadening. Every step has its own goals and with every goal there are different scaffolds which focus on how to guide and challenge the gifted children in the inquiry process. Within the thematic project called “Perception and action in movement” we will show the scaffolds for each phase of IBSE. For example, the teacher will learn how to use concept cartoons in order to gain insight into misconceptions of the gifted children, and a “questioning machine” to learn what criteria are for a good research question. In IBSE, there are three

levels depending on the amount of control of the teacher versus the amount of freedom of the children. We focused on the highest levels, i.e. guided inquiry for the non-gifted learners and open inquiry for the gifted learners. In guided inquiry, the teacher presents the research question and allows learners to construct their own investigation. The open inquiry level focus on the following types of gifted learners: successful, creative and autonomous learner. During open inquiry, children perform their own investigation to answer the research question that they composed themselves. They will learn to have an research attitude and to be critical with the information they search for in this digital age. We present an interactive poster with QR-codes that will send you to the website with materials and video clips of the project. For each step of the inquiry process, we present goals and related scaffolds.

POS 25: Aistap Summer Camp: an Experience of a Practice-based Approach to Music Technology

Jacopo Lorenzetti, Victor Zappi, and Anna Maria Roncoroni

Italian Association for Gifted and Talented Students (AISTAP) – Italy; jlorenzetti86@gmail.com

In a context where technology is merging with many fields of education, digital supports (such as smartphones and computers) are often being used to increase the learning experience, and with promising results. It's worth noting, however, that in the case of gifted students the common way of bringing technology into your class may not be always the best way; sometimes due to a divergent cognitive style, different approach to the tool, or maybe to a lack of motivation. This poster aims to show an alternative approach to digital education, specifically the experience of the 3rd Aistap Summer Camp for gifted pupils that included a Music Technology Module. The course had the twofold aim to introduce students to both the physics of sound and procedural programming. In the first part, students were taught how sound waves travel and interact in real world and how they are represented in the digital domain. In the second part students were given full access to the digital support to build their own test cases. In particular, the task consisted of putting in practice the learnt theories designing and implementing interactive algorithms for digital audio synthesis, using a simple visual programming environment. As results, it stimulated the students' creativity, who made different design decisions according to their skills and interests, it allowed the teacher to introduce both theory and programming with consistency, and also engaged the attention of those students who are at high risk of underachieving. This approach, its applicability to other subjects and the resulting outcome must be studied more thoroughly. A new module featuring the same techniques is currently under development and will be part of the 2014 Aistap Summer Camp.

POS 26: "Education to Talent" and "Gifted Teaching": Projects for Gifted Children in Veneto Region – Italy

Martina Pedron¹, [Martina Brazzotto](mailto:Martina.Brazzotto@unipd.it)¹, David Polezzi², Massimo Ronchese², Daniela Lucan-geli¹, and Pier Antonio Battistella²

¹Department of Developmental Psychology and Socialization – University of Padova and C.N.I.S. National Association; GATE-Italy Association (Gifted and Talented Education – Italy;

²U.O.C. NPJA ULSS 16 Padova; GATE-Italy Association (Gifted and Talented Education – Italy); martinabrazzotto@gmail.com

The projects "Education to Talent" (financed by Regione Veneto – Italy) and "Gifted Teaching" (financed by European Social Fund) want to take care of gifted children in the school to ensure that they maintain a motivation equal to their potential. The mission of the projects is to model a system of actions to achieve the "talent" from the distinctive individual qualities of the growing children, developing educational pathways that become models in order to allow the full development of cognitive, emotional and social skills of these talents by a system of supervision aimed at teachers in the classroom. Several partners are involved: Neuropsychiatric for Children and Adolescents Service ULSS16 Padova, Department of Developmental Psychology and Socialization – University of Padova, C.N.I.S. (National Coordination Specialist Teachers Association), Centro Produttività Veneto, Omnicom Association, University of Pavia. "Education to Talent" and "Gifted Teaching" are the first projects in the whole Italian country. We will describe the phases of the projects, involving 340 teachers in primary and secondary schools, and the main results: from the implementation of training in Learning Week mode to subsequent group coaching activities and customized mentoring activities for teachers to reach the implementation of project works within the classes. Support for teachers has been put in place through the development of a model of intervention, by now in the experimental stage, with proposals that could provide tools and procedures useful not only to the gifted child/boy but also to the whole class group. The collaboration with corporate partner "Digital Academy" is part of a shared project intended to bring innovative solutions to educational needs, with the aid of digital tools.

POS 27: The Leiden Approach

Lineke Van Tricht¹, [Lilian Snijders](mailto:Lilian.Snijders@aed-leiden.nl)², and Phil Rhebergen³

¹Bureau Talent, the Netherlands; ²Ambulante Educatieve Dienst, The Netherlands; ³SCOL, The Netherlands; L.Snijders@aed-leiden.nl

In the city of Leiden, the city with the oldest university of the Netherlands, a new initiative was born last year. In this city of knowledge, where so many people develop their skills on many levels, we don't really have the gifted students in our community in sight. Still, there are many small projects initiated by individuals, ECHA members and other experts, all working with gifted students. The idea came up to combine all the available knowledge and experience and try to make a joint effort to stimulate the talented and gifted students and create more opportunities to prevent underachievement. This project is meant for the age group 0-24 years. This means that preschools, primary and secondary education and higher education like the College (Hogeschool) of Leiden and the University of Leiden work together in this project and cooperate with all the experts in our region. The concept we are working on is to create an (digital) academy for talent

development: "de Leidse Academie voor Talent Ontwikkeling". At the moment we are working on the idea and are getting ready to take the next step. In September we would like to present our initiative to our ECHA colleagues by means of a poster presentation.

POS 28: Identifying and Promoting Talented Students at the Department of Art Education

Črtomir Frelih

Faculty of Education, University of Ljubljana, Slovenia; Crtomir.Frelih@pef.uni-lj.si

Admission procedure: Before being admitted to the study programme of Art Education at the Department of Art Education, Faculty of Education, University of Ljubljana, candidates must pass a test for talented students in art. Talent is considered 80% of the grade, the rest are the results of the learning achievements at high school and external examinations. The proportion between the candidates and the admitted students to the study programme is from 1:4 to 1:2, which means that only talented students in art can enter the programme. There are two components of the test: drawing figures and painting of still life motifs. Some test samples of drawings and paintings together with the assessment criteria and the grades awarded will be discussed. Difficulties in assessing of artistic talent are double: how to distinguish talent from knowledge and how to ensure adequate objectivity of the assessment. After the admission process to the study programme: This part is illustrated with some selected achievements of the students of the final year of the Master Year in Experimental graphics elective course. The key competence of the study programme includes autonomy in formulating questions, exercises and concepts. Students are generally well aware of their own art potentials and their "strong" areas; therefore, they select elective courses in accordance with their interests and potentials.

POS 29: Evaluation Based on Evidences of the Identification Process of the Program of Gifted/ Outstanding Aptitudes Implemented in a Mexican State

María Cadenas¹, Dolores Valadez², Rogelio Zambrano², and África Borges¹

¹University of La Laguna, Spain; ²University of Guadalajara, Mexico; mcadbor@ull.es

This paper presents some preliminary results of an evaluation of the process of identification of gifted students in one state in Mexico. The evaluation of any program is an inevitable necessity, because its implementation is not always in tandem with its planning and requirements. That is evidenced by multiple complaints in the existent literature. In 2006 an intervention proposal called Educative Attention for Students with Outstanding Aptitudes (Atención educativa a alumnos y alumnas con aptitudes sobresalientes) was developed in Mexico. It was implemented that same year in the elementary schools in all the country. Even though it has been implemented for several years now, its impact or efficacy haven't been evaluated yet. This paper is part of a bigger project co-funded by the Public Education Ministry and The National Council for Culture and Technology (SEP/SEB/CONACYT). Its objective is to present the preliminary results in the evaluation on the identification process of the Program of Outstanding Aptitudes implemented in one of the Mexican states. The procedure of detection of 365 children identified as gifted students was analysed. An evaluation tool designed explicitly for this program was used.

This ad hoc evaluation instrument was complemented with an in-depth interview applied to all related parties (like the State Coordinator, the Manager and Team's Personnel in the Regular School's Support Unit, teachers, parents and identified Gifted Students). The present results will allow detecting the identification procedure's strengths and weaknesses in order to be able to design an improvement plan.

POS 30: Specific School Measures Designed for Gifted French Middle School Students: Presentation and Challenges

Karine Cueur-Buard, Amélie Courtinat-Camps, and Minna Puustinen

GRHAPES, France; karine.buard@inshea.fr

The concept of giftedness is recurrently debated in the educational context in France (Cellier, 2007), and it has become one of the concerns of the French Ministry of Education who shows the intention of organizing pedagogical measures adapted to gifted students (Tordjman, 2005). Gifted students (i.e., whose intelligence quotient is ≥ 130 , cf. the criterion of the World Health Organization) represent, in France, 2.3% of 6-to-16-year-old children and adolescent, that is, 200 000 students. In order to address their special educational needs some secondary schools propose to these students to pursue their schooling in heterogeneous classrooms while benefiting from a specific measure (e.g., curriculum acceleration, tutoring, small groups outside school hours). The present communication constitutes the first step of a research whose aim is to analyse in more detail the case of public middle schools that have made that choice. In fact, there exists currently no evaluation of the effects of those specific measures from the viewpoint of the school and the teachers, the students, and their families. Our analysis will be based on Tremblay's (2012) multidimensional model of quality evaluation which proposes to evaluate a given measure according to ten interrelated dimensions: pertinence, appropriateness, congruity, synergy, effectiveness, relevance, impact, well-foundedness, and flexibility. We formulate the hypothesis that such an evaluation will help the field actors to develop a systemic view of the functioning of the specific measures, to better understand their complexity and thereby improve their flexibility. Within this context, the aim of this communication will be to sum up the situation and clarify the problematic and the challenges produced by the schooling of gifted students in France. Specific measures implemented in some public middle schools will be presented.

PAPER SESSION 7: Learning Environment 2

Best practice strand

Time: Thursday, 18 September: 3:20 p.m. – 5:30 p.m.

Location: Boardroom Grafika

Chair: Tessa H. S. Eysink

PAP 7-1: BE COOL! A Digital Learning Environment to Challenge and Socially Include Gifted Learners

Tessa H.S. Eysink, Alieke M. Van Dijk, and Ton De Jong

University of Twente, The Netherlands; t.h.s.eynsink@utwente.nl

Gifted children in regular education are generally not given enough opportunity to develop their talents. Many teachers indicate that they experience problems in challenging their gifted children enough. ICT provides us with opportunities to help teachers on this. An example is the BE COOL! learning environment. BE COOL! is a Dutch acronym for Stimulating Excellence by Cooperative Inquiry and Design-based Learning. The aim of this learning environment is to provide cognitive challenges for gifted children in regular education in such a way that they are socially being included in their own class. The environment is based on educational practices that have proven to be effective: inquiry learning, design-based learning, collaboration with gifted peers, cooperation with non-gifted classmates, and differentiation in content, task, and process. In BE COOL!, small groups of gifted and non-gifted children work on a socio-technical problem. In order to stimulate individual accountability and social interdependence, each child is made responsible for a part of the problem and the problem can only be solved if the children work together. Information about the different parts is acquired by inquiry learning. In this stage, children of the same cognitive level work together. So, gifted children work together and non-gifted children work together. In this way, all children are cognitively challenged at the level suited for them. After having acquired enough knowledge, all children return to their original group and share their expertise in order to design an effective solution for the stated problem. In the presentation, the underlying theoretical ideas will be presented and we will show how they are implemented in our digital learning environment. In addition, we will discuss the experiences of teachers as well as children who worked with the learning environment.

PAP 7-2: Virtual Provisions for Talented Secondary School Students (online presentation)

Barbara Bannister

New South Wales Department of Education & Communities, Australia;

barbara.bannister@det.nsw.edu.au

Gifted students have been provided the opportunity to study three core subjects through an academically selective virtual high school in western NSW, Australia. At the same time they continue to attend their local public high school for their other subjects. This article presents the mechanisms that have provided this opportunity, including succes-

ses and challenges that have been overcome. Students are located across 385,000 km² and meet online through web conferencing to engage in real time. They are also able asynchronously to access study materials in an online repository.

PAP 7-3: How the Internet can Help and Support Parents and Gifted Children

Petra Leinigen

Nationwide telephone counsellor for parents of gifted children for the DGhK in Germany, Germany; petra.leinigen@dghk-nds-hb.de

To raise a gifted child makes high demands on parents and teachers alike, to satisfy the needs. In Germany, only very few schools offer enrichment for gifted children and only a very low number of teachers have an additional training in gifted education. Just 650 teachers out of 750 000 have passed the ECHA diploma in Münster, it's a rare subject in teacher training. Home-schooling is forbidden. The German Association for the Gifted Child (DGhK) offers free telephone counselling. In ¾ of the calls (average 30 calls per week) the main topics are the child's longing for information and boredom in school. About 90% of the callers use the usual search machines but are not aware of further options to get the best from the internet. Depending on the specific needs it is a part of my counselling to help parents to find their way through the World Wide Web in order for them to make specified offers to their child. The library is an option, too, but many offers on the internet are much more challenging. Some universities offer distance studies for gifted children. Competitions in various areas are released on the internet and almost any language can be learned through online-courses. Even musical instruments can be practised in online lessons via Skype. Not every offer suits every gifted child or can be afforded by the parents, but the variety of possibilities to improve knowledge by using the internet is more than we had in pre-internet times. Opening parents' minds for alternatives offered by living in the digital age and encouraging them to go different and most creative ways in order to help their children is a major part of telephone counselling.

Examples of what can be learned and found for children in the internet will be presented.

PAPER SESSION 8: Teachers

Best practice strand

Time: Thursday, 18 September: 3:20 p.m. – 5:30 p.m.
Location: Plečnik 2-3

Chair: Ann Robinson

PAP 8-1: Effective Teachers of the Gifted: Characteristics, Competencies, and Preparation in the Digital Age

*Ann Robinson*¹ and *Pamela Clinkenbeard*²

¹Jodie Mahony Center, University of Arkansas at Little Rock, USA; ²University of Wisconsin-Whitewater, USA; aerobinson@ualr.edu, clinkenp@uww.edu

Teachers develop talents. What role teachers play in talent development, what their students think about them, and what teachers believe about their talented students are all part of the complex story of educators in gifted education (Robinson, 2014). How we prepare teachers to develop student talents, particularly in the digital age of just-in-time professional development, presents us with the practical problem of educating teachers to work effectively with their high ability learners (Robinson & Kolloff, in press). When the political and economic context makes it necessary to provide teacher professional development with very limited resources, online and blended instructional models can be helpful. One example of such a model comes from the U.S. state of Wisconsin. The sole gifted education certificate program there is a pragmatic collaboration between two state universities (Clinkenbeard & Gould, 2009). Courses are taught fully online or in blended format and usually enroll teachers from throughout Wisconsin. A newer “cohort” model involves 30 teachers from one school district who are currently pursuing the gifted teacher certificate through an online/blended format. The universities provide discounted tuition; professors and gifted specialists teach with special attention to local needs; and the school district reimburses teachers for the majority of their graduate tuition. Whatever the model of professional development, key consideration in the effective preparation of teachers is the use of standards, guidelines, or programs of study, grounded in the research on gifted students and best practice in gifted education and developed through consensus. Such consensus models exist worldwide. The ECHA Diploma has encouraged a network of university preparation programs across Europe. In the United States and Canada, research-based standards were developed through professional associations. An analysis of these consensus documents provides an opportunity to align expectations for effective teachers of the gifted across programs, institutions, and countries.

PAP 8-2: Introduction of the Concept of a Talented Teacher

Katarina Habe

Faculty of Education, University of Maribor, Slovenia; katarina.habe@um.si

The aim of our presentation is to introduce the concept of a talented teacher using different theoretical backgrounds about giftedness and talent (Sternber & Davidson, 2005). We want to establish a concept of a talented teacher deriving from (1) an expertise model (Newel & Simon, 1972; Glaser, 1984; Eysenck, 1993; Ericsson, 1993; Gardner, 1993; Simonton, 1994, 1997), (2) the Differentiated Model of Giftedness and Talent (Gagne, 1985), (3) Renzulli’s “ring” model of giftedness, (4) a model of talent realization in women (Reis, 1996, 1998), and (5) a Russian personality and developmentally oriented conceptions of giftedness (Bogoyavlenskaya & Schadrikov, 2000; Leitis, 2000). The main model for explaining our vision of a conceptualization of a talented teacher will be The Operation Houndstooth (Renzulli, Sytsma, & Berman, 2000), which emphasizes the importance of a wise, satisfied, happy individual, that possess optimism, courage, romance with a topic or discipline, sensitivity to human concerns, mental energy and vision. In an organizational environment there is a large emphasis on identifying and nurturing high-potential talents in a working place. On the other hand our society is still blind in recognizing the importance of high-potential talents in the educational working environment. A new era needs talented children who will lead our society to a social capital benefit society. And these talented children need talented teachers who will inspire them with their wisdom and personal qualities. We share Renzulli’s (2002) belief, that “The conception of giftedness needs to expand beyond the traditional group of gifted individuals, defined by normal-curve approach, to broad and diverse populations.” and that “Giftedness in the new century will have to be redefined in ways that take co-cognitive components into account”.

Pap 8-3: The Role of the School Principal in Gifted Education

*Colm O’Reilly*¹, *Margaret Sutherland*², *Niamh Stack*², and *Kimberley Chandler*³

¹Dublin City University, Ireland; ²University of Glasgow, UK; ³College of William and Mary, USA; colm.oreilly@dcu.ie, margaret.sutherland@glasgow.ac.uk, niamh.stack@glasgow.ac.uk, klchan@wm.edu

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 international study will look at the experiences of principals in the Scotland, Ireland and the United States, through a series of interviews where they share their insights and understanding of the field of gifted education.

The role of the principal has rarely been considered in the literature relative to meeting gifted students’ needs. Most references concern general program development issues. In many cases, principals may have little or no training in gifted education, or even any interest in gifted education, particularly given all of the requirements of their roles. Principals have a tremendous influence on how time is scheduled and utilised to support highly able pupils. To develop comprehensive support for gifted children, the school management should have at least a working knowledge of gifted education. In this presentation, we will share the results of a study that examined the role of school leadership in addressing the academic and social-emotional needs of gifted pupils.

This case study research had two purposes: 1) to examine the responsibilities of principals relative to gifted education in their schools and 2) to determine principals' knowledge of gifted education principles and the district policies regarding gifted education programming. This research is particularly valuable since it provides an insight into how gifted education is conceptualised and placed within these systems and the similarities and differences experienced across the contexts. The themes emerging from this study include issues related to limited resources, the provision of additional support and how this support could be implemented.

PAP 8-4: Online Professional Learning in Gifted Education

Lesley Henderson

Flinders University South Australia, Australia; lesley.henderson@flinders.edu.au

Professional learning for educators in the field of gifted education is an essential component of effective provision for gifted students. However, in Australia there are very few initial teacher education courses which include gifted education as a mandated subject. This paper will document the development of an online professional learning course in gifted education which responds to the challenge of teacher education using the opportunity provided by access to the online learning environment.

PAPER SESSION 9: Preschool

Best practice strand

Time: Thursday, 18 September: 3:20 p.m. – 5:30 p.m.

Location: Plečnik 4

Chair: Diane Montgomery

PAP 9-1: A Gifted Child in Pre-School

Katarina Ukmar and Natalija Trebušak

Pre-school Kolezija, Slovenia; ukmarkatarina@gmail.com

In this article we would like to present a case of good practice. We are presenting a gifted pre-school child case study in which we linked our practical experience with theoretical knowledge. We describe identification of a gifted child, co-operation with his parents, specific activities and adjustments in the pre-school care. Our activities and steps in the process of gifted child's treatment in pre-school: (1) Regular co-operation with gifted child's parents: exchange of information, frequent discussions about the child. (2) Assessment of gifted child by the psychologist. (3) Pre-school teacher, teaching assistant and counsellor prepared an individual program that defined adjustments and work methods for the gifted child. The program included activities that took place parallel in the pre-school and at home. (4) The pre-school connected with primary school. Several volunteers from the 9th grade of primary school were actively involved in "tutoring" the gifted child. The fact that importance of early discovery of gifted children is ever more significant also increases the importance of the role of pre-school teachers in working with gifted children. In our article we are also presenting results of the questionnaire,

answered by professionals working at our pre-school. With the questionnaire tried to find out the following: the level of awareness about the importance of early discovery of gifted children, which adjustments the staff would be ready to apply in their work with gifted children, and what kind of experience do our pre-school teachers already have in this field. The results of our questionnaire show that appropriate encouragements of gifted children in the pre-school period are very important and that gifted children tend to stay overlooked among other children. It is very important to establish good co-operation with gifted child's parents. But on the other hand it is equally important to let the child enjoy its childhood and not to burden it with high-performance expectations.

PAP 9-2: Identifying Talented and Self-Regulated Learners in Preschool and Reception

Diane Montgomery

Middlesex University, USA; dmont507@aol.com

It is possible to identify the most prodigiously talented infants by their intellectual capabilities and achievements compared with normal individuals and standardised tests can be used to confirm this. These talented children are often described as "little professors". However not all talents express themselves in the early years or in such ways and more subtle methods are needed to identify them. It is possible that some talented children despite hostile or disadvantaged cultural and linguistic environments harbour a special quality that will eventually enable them to succeed to become high achievers later in life. During research on early literacy in 5 Reception classes it was noted that specific children had a greater facility for learning from the adults in their environment than many of the other children without necessarily seeming to be directly taught. This appears to be the early sign of a talent for self-regulated or autonomous learning. At present it can only be estimated how far this type of talent can lead to later success but it could be related to that special "spark" that Freeman (2013) referred to based on her interviews with gifted infants.

PAP 9-3: Exploring the Material by Talentenlijn and Learning How to Recognize Gifted Toddlers

Willeke Rol

Bright Kids, The Netherlands; willeke@brightkids.nl

Good supervision (nursery) and good education (kindergarten) should reflect the personality and development of a toddler, a toddler must and should be themselves. Talentenlijn Peuters (Toddlers) is designed to meet the specific needs of toddlers with a developmental advantage. Talentenlijn offers the possibility to create the appropriate education and counselling in a group. Alongside using the "Talentenlijn" materials and concepts, it is also important that our focus continues to be about learning about the needs of toddlers. In order to achieve this, think about enriching group activities, working different angles on current materials or strategies and using game situations with specific assignments.

PAPER SESSION 10: Personality & Social

Scientific strand

Time: Thursday, 18 September: 3:20 p.m. – 5:30 p.m.
Location: Plečnik 5

Chair: Maureen Neihart

PAP 10-1: Self-Esteem, Optimism and Academic Achievement of Gifted Adolescent Females in Singapore

Doreen Yoke Leng Tan¹ and Maureen Neihart²

¹School of Science and Technology; ²National Institute of Education Singapore;
maureen.neihart@nie.edu.sg

Gifted girls and women seem to face common barriers to achievement that include feelings of self-doubt, pressure to conform, undemanding school curriculum, unrealistic expectations and a lack of career planning. This study provided an Asian perspective on gifted girls' psychological adjustment by investigating patterns of well-being in a sample of gifted adolescent girls ages 12-16 in Singapore. Patterns in self-esteem, optimism and academic achievement were investigated in a sample of 401 gifted adolescent girls who were enrolled in a single-sex school for the gifted. Self-esteem was measured using the Coopersmith Self-Esteem Inventory while optimism was measured using The Youth Life Orientation Test (YLOT). Results indicated variations in developmental trajectories. Contrary to research findings in western studies, self-esteem remained quite consistent across grade 7 to 10. Significant upward trends were observed in the General Self and Social Self-Peers subscales of the CSEI. Contrary to research in Asian studies, the girls were significantly more optimistic than pessimistic. The findings also indicated that Total Self-Esteem and optimism predicted academic achievement and that optimism was not a mediating factor in this relationship. The findings suggested that the girls experienced good psychological well-being overall. Results may suggest that there are socio-affective benefits in grouping gifted girls in an all-girls' educational environment that serves to cater to their gifts and talents. We discuss the role of educational, cultural and social contexts in the development of gifted adolescent girls.

PAP 10-2: Self-Concept of Intellectually Supernormal Children Aged from 10 to 13 Years Old in China: How Does Enriched Education Setting Affect It?

Xiaoyan Li¹ and Jiannong Shi²

¹University of Chinese Academy of Sciences, Xingli Zhang, Institute of Psychology, Chinese Academy of Sciences, China; ²Department of Learning and Philosophy, Aalborg University, China; shijn@psych.ac.cn

Self-concept of intellectually supernormal children has received a great deal of attention recently because it correlates with many other psychological characteristics and educational outcomes. The big-fish-little-pond effect (BFLPE) proposed by Marsh in 1984, on account of social comparison theory, examined by many studies afterwards. It is supposed that the academic self-concept of equivalent students is lower in high ability schools than in low-ability schools. Previous studies in China also found that the academic

self-concept of intellectually supernormal children in accelerated program was lower than intellectually average students in regular programs. The present study is to explore the self-concept development of intellectually supernormal children aged from 10- to 13-year old in enriched gifted program, and to examine whether the BFLPE exists in students from enriched gifted program for intellectually supernormal children. A total of 412 children aged from 10 to 13 years old were investigated. The students were divided in three groups: Group 1 is intellectually supernormal children from enriched educational program; Group 2 is intellectually supernormal children from regular program; and Group 3 is intellectually normal children in regular program. The Song-Hattie self-concept inventory was used for collecting data. The results showed a general decline in academic self-concept for intellectually supernormal children from 10- to 13-year old, no significant difference between group 1 and 2. Perhaps it can be concluded that the academic pressure may explain the declined self-concept of intellectually supernormal children from accelerated gifted program. The Further discussion about BFLPE will be presented as well.

PAP 10-3: Is Being Gifted Always an Advantage? The Relationship between Social Acceptance, Self-concept and the Use of Facebook among Gifted and Non-gifted Pupils

Marina Horvat¹, Urška Aram¹, Nina Jurinec¹ and Katja Košir²

¹Faculty of Arts, University of Maribor, postgraduate student, Slovenia; ²Faculty of Education, University of Maribor, Slovenia; katja.kosir@uni-mb.si

Many studies imply a strong relationship between giftedness and academic performance. These findings often lead to an early conclusion that gifted pupils are also superior in other fields of their functioning, including peer relations. The aim of the present study was to examine the role of giftedness in social acceptance, different aspects of self-concept and behaviour in social networks (operationalized as use of Facebook). More specifically, we were interested if gifted pupils are more popular among schoolmates, have a better self-concept and if giftedness is in any way connected with some aspects of Facebook usage in the sample of 6th to 9th grade pupils in elementary school. Three measures of social acceptance were used: peer acceptance (measured by sociometric procedure using positive and negative nominations), teachers' assessment of social acceptance in class and pupils' self-perceived social acceptance. The Self Description Questionnaire (SDQ-II) was employed for measuring academic, social and general self-concept and the Facebook Intensity Scale (FBI) for assessing intensity and frequency of Facebook use. Preliminary findings suggest that gifted pupils are academically more successful (have higher grades) and compared to non-gifted pupils have better self-concept. However, no significant differences were found in general or social self-concept nor in any of all the three measures of social acceptance between gifted and non-gifted pupils. According to the teachers' ratings, there is a slight tendency towards better acceptance of gifted pupils; however, the difference was not significant. Results also indicate a tendency of less frequent use of Facebook by gifted pupils.

Evidence of this preliminary analysis suggests that gifted pupils are indeed more successful in academic performance, but that does not necessarily translate to better peer acceptance. More research is needed to determine the social life of gifted pupils in elementary school.

PAP 10-4: The Relation between the Social Status and the Ego-Development of Academically Accelerated Children

Olga Wagenaar¹, Eddie Denessen², and Lianne Hoogeveen³

¹ECHA, The Netherlands; ²RU Nijmegen, The Netherlands; ³Radboud University, Center for the Study of Giftedness, Nijmegen, The Netherlands; olga@ozobegaafd.nl

The decision whether or not to accelerate a student is relatively easy to make on the cognitive level, but it is much harder on the psychosocial level. Previous studies suggest to pay more attention to the social-emotional development of young accelerated students and their relations with classmates. The goal of this research is to make a first step in increasing the insight in the psychosocial aspects of the acceleration of students. Research question: To what extent is the social status of accelerated children related to their ego development? Design: A mixed-methods design with a large scale quantitative study on social status and a qualitative small scale study to gain insight in the psychosocial development of five accelerated children with diverse social statuses. Method: 305 students in their first year of secondary schools participated. Students were clustered into five sociometric status groups (accepted, rejected, neglected, controversial and average). A questionnaire contained ten behaviour reputation descriptions (five positive and five negative) and The Dutch "ZinnenAanvullijst Curium (ZALC)" was administered during an interview to assess the level of ego development of the five case-study students (impulsive, self-protective, conformist, self-aware and conscientious). These were compared to different age norms. Results: Accelerated students had less positive reputations than non-accelerated students ($F(2,302) = 3.46; p = .03$). Levels of ego-development of the accelerated students were rather high. Three of the five case study students showed levels of ego-development higher than the age norm of their classmates. Higher levels of ego-development were related to more positive social statuses of accelerated students. We have found indications for a relation between psychosocial development and social status of students. Since the research group was rather small, more extensive research is needed to further validate this relation.

PAPER SESSION 11: Mathematics

Scientific strand

Time: Thursday, 18 September: 3:20 p.m. – 5:30 p.m.

Location: Boardroom Risba

Chair: Risto Hotulainen

PAP 11-1: Mathematically Highly Able Students' Time Use in a Computer-Based Reasoning Test

Risto Hotulainen, Sirkku Kupiainen, and Mari-Paoliina Vainikainen

University of Helsinki, Finland; risto.hotulainen@helsinki.fi

Computer-based assessment (CBA) with the ensuing log data has raised Carroll's (1963, 1989) concept of time-on-task again to the forefront of assessment research (e.g., Wise,

2006). In their study, Goldhammer et al. (2014) found that higher achieving students need less time for good performance in routine tasks but use more time for better attainment in more complex tasks. In this study, we explore the time use of Finnish mathematically high performing 9th students as compared to their less able peers in a low-stakes CBA measuring verbal and mathematical reasoning. Using CBA log data, two questions were addressed: 1) Do students showing higher ability in a high-stakes curricular mathematics test excel equally in the concurrent low-stakes CBA? and 2) Do the high ability students differ from their peers in their time-on-task in the low-stakes CBA? To answer the questions, a structural equation model (SEM), construed to explain students' performance in the CBA by prior attainment (GPA), motivational attitudes disclosed in a simultaneously administered self-report questionnaire, and time-on-task as a mediating factor was fitted to a nationally representative data of 4249 Finnish ninth graders (mean age 15.9 years) using the whole cohort (cf. Kupiainen et al., 2014) as a reference point. Preliminary results show that the high ability students spent on average more time on the CBA tasks than their less able peers. The difference was bigger in mathematical than in verbal reasoning (for incremental groups of 10% in the curricular math test, the effect size was $\eta^2 = .084$ vs. $\eta^2 = .034$). Differences between the groups were bigger in the reasoning tests ($\eta^2 = .255$ vs. $\eta^2 = .241$), indicating that the more time spent on the tasks paid dividends in the form of better results. The presentation will centre on the fitting of the SEM model on the more able vs. average and weak students.

PAP 11-2: A Componential Analysis of Gender Differences in General Mathematical Ability: A Case From The EPTS (ÜYEP) of Turkey

Ulku Ayvaz¹ and Ugur Sak²

¹Abant İzzet Baysal University, Turkey; ²Anadolu University, Turkey;

ulku.yesilyurt@gmail.com

Gender differences in mathematical ability is a topic that has been extensively studied in the area of mathematics. The reason that many studies have been conducted about the topic for years is the contradictory results of different studies. The aim of this study was to investigate gender differences in general mathematical ability and sub-tests of mathematical ability. With this purpose, the Test of Mathematical Talent (TMT) developed to identify talented students in mathematics was used as data collection tool. TMT includes eleven sub-tests as number series, numerical analogy, linear logic, conditional logic, algebra, numbers-measurement, geometry, statistics and probability, figurative rotation, figurative series and figurative analogy. The study included 1393 6th grade students who applied for admission to the Education Programs for Talented Students (ÜYEP), an after school program for mathematically and scientifically talented students. 683 of the participants were girls and 710 of the participants were boys. The gender differences in mathematical ability were investigated by general mathematical ability, sub-tests and top %10 of the participants. Two-factor ANOVA, one-factor MANOVA and Mann-Whitney U Test were used to investigate gender differences in general mathematical ability, its sub-tests and top %10, respectively. Findings show that there was a significant gender difference in terms of general mathematical ability favouring boys. Boys also scored significantly higher than girls in number series, numerical analogy, linear logic, conditional logic, algebra, numbers-measurement and figurative rotation sub-tests while girls' and boys' performance did not differ in geometry, statistics and probability,

figurative series and figurative analogy sub-tests. Although the proportion of boys in the top %10 was significantly higher than that of girls, their performance level did not significantly differ in mathematical ability and its sub-tests.

PAP 11-3: Acceleration and Well-Being at Age 50 in the Top 1% in Mathematical Ability

Stijn Smeets¹, David Lubinski², and Camilla Benbow²

¹Center for the study Giftedness, Radboud University Nijmegen, The Netherlands; ²Vanderbilt University, USA; s.smeets@its.ru.nl

This study investigated the association of well-being at midlife in the top 1% in mathematical ability and skipping one or more grades in high school (study 1) and advanced and enriching pre-collegiate STEM learning opportunities beyond the norm in high school (study 2). Subjects scored in the top 1% in mathematical ability at or before age 13, and were followed-up at age 50. Outcomes included positive affect, negative affect, life satisfaction, psychological flourishing, career satisfaction, relationship satisfaction, core self-evaluations, and health at age 50. Confounding background covariates (including ability, SES, and motivation at age 13) were controlled for using (generalized) propensity score matching. Most well-being outcomes did not show any statistically significant differences between accelerants and non-accelerants; both groups reported positive well-being and good health. If differences were found, they favoured the accelerants.

PAPER SESSION 12: Creativity

Scientific strand

Time: Thursday, 18 September: 3:20 p.m. – 5:30 p.m.

Location: Ravnikar Hall

Chair: *Željko Rački*

PAP 12-1: Domain Specificity and Continuum in Education for Creativity in Gifted Children and Adolescents

Željko Rački

Faculty of Teacher Education in Osijek, Croatia; zracki@ufos.hr

The paper deals with partial domain specificity of creative behaviours and how their characteristics affect educational efforts and giftedness theory. When creative-productive giftedness is operationalized as observable activities to involve children in, clear guidelines for instruction can be set according to the domains of creativity. This research aims to present creativity as a continuum of clearly stated behaviours, partially domain specific, and weakly hierarchically organized. In the period from 2006 to 2014 children and adolescents (aged 6 – 15; N = 671) listed behaviours they engaged in in extracurricular time. Their converging list was supplemented through extensive ongoing research. A list of 313 behaviours was compiled, covering broad range of activities (informatics, research, robotics, mathematics, drawing, painting, sculpting, drama, etc.). The focus of

this research was on these productive behaviours. Psychology students (N = 32) categorized individually presented behaviours into as many groups they wanted according to their implicit theories of creativity content. Factor analysis resulted in distinct domains of creativity, each consisting of activities (behaviours), subsequently graded on number of characteristics. Behaviours were rated on how indicative for creativity (i.e. in what extent does the teaching staff (artists, scientists, teachers, school psychologists) consider each behaviour as a sign of creativity in children), how much knowledge is needed, how dependent on intelligence, how much effort is needed for each behaviour etc., altogether on eleven theoretically relevant characteristics (rater α 's >.9). Implicit structure of creative behaviours, number of types of activities, number of domains, and continuity of behaviours according to the complexity within domains, were assessed. In an attempt to evaluate creativity defined and graded as behaviours, teaching objectives were discovered, creating a useful taxonomy of creativity as domain specific teaching ideas for educational work on development of creative-productive giftedness.

PAP 12-2: Thinking Creatively through the CREAT: Creative Reversal Act in Thinking and Teaching

Ugur Sak

Anadolu University, Turkey; ugursak@gmail.com

The focus of this talk is to review the CREAT (Creative Reversal Act), its theoretical background, and to present research studies carried out on its effectiveness on students' creativity. The CREAT is a creative teaching technique (Sak, 2009) developed based on the theory of the janusian process that was originally proposed by Rothenberg (1971). The janusian process plays a role in many creative accomplishments, such as the theory of natural selection proposed and the general theory of relativity. Creative ideas holding oppositions, paradoxes, and paradoxical metaphors can be produced through the use of the CREAT. It is composed of five steps: construction, segregation, opposition, combination and elaboration processes. A series of research was carried out on the effectiveness of the CREAT. One of the studies showed that the use of the CREAT improved students' creative performance significantly on the poem and story tasks, but had a low effect on their creative performance on the paradoxes task. Second study involved students' performance on concept learning and construction of paradoxes. In this study, experimental groups showed higher performance than did the control groups on the both tasks. In another study, the social validity (social acceptance) of the CREAT was investigated. Students' satisfaction with use of the CREAT was found very high. Research findings imply that the CREAT can be used effectively in a variety of settings, including classrooms and workplaces.

PAP 12-3: The Paradoxical Inhibition of Creativity with Highly Gifted Underachievers: a Longitudinal Study Based on a Mixed-Methods Design

Lony Schiltz

Hôpital Kirchberg Luxembourg, Luxembourg; lony.schiltz@education.lu

The historical evolution of the conceptualization of the links between giftedness and creativity is analysed. We present the results of a prospective follow-up study of N=78 highly gifted students suffering from school failure at the beginning of adolescence. They

were treated with music psychotherapy for 6 months. The outcome study is based on a mixed-methods design combining psychometric scales, projective tests and expressive tests. With the help of optimal scaling techniques (PRINCALS) we extract latent dimensions out of the correlational matrixes of the Delta values, opening tracks for future research. The results of the study are discussed at the light of recent research results in developmental and clinical psychology of adolescence.

WORKSHOP SESSION 2

Possibilities & Challenges of Digital Age for the Gifted

Time: Thursday, 18 September: 3:20 p.m. – 4:20 p.m.
Location: Martin Krpan Hall

WOR 3: The Impact Technology has on the Areas and Levels of Development of Gifted Children

Koenderink Tijl

Novilo Talent Development, The Netherlands; tk@novilo.nl

When trying to look at the development of gifted children in a holistic sense and dig deeper you find the Integral Model as developed by Ken Wilber and others. Based on, among others, the developmental levels of Kegan and the needs hierarchy of Maslow it integrates many different perspectives on personal development.

Because of the multi-facetted approach it gives a whole new meaning to a disharmonic profile. There might be a disharmony between cognitive intelligence and morals, or between interpersonal intelligence and worldview. In this workshop we will unravel specific cases based on this model and come up with stage and level appropriate interventions. The author will draw on his extensive work with gifted children who either got stuck in school or turned into dropouts. In this process we will explicitly look at the ways technology is hindering the development of children and where it actually offers solutions.

Time: Thursday, 18 September: 4:30 p.m. – 5:30 p.m.
Location: Martin Krpan Hall

WOR 4: A Tailored Pedagogy to Prevent Underachievement in Dutch Secondary Education

Karin Koens¹ and Phil Rhebergen²

¹ECHA Netherlands, The Netherlands; ²SCOL, The Netherlands;

k.koens@bonaventuracollege.nl; p.rhebergen@scoleiden.nl

Research of the Dutch National Council of Education in 2007 shows that between 10 to 18% of pupils in primary education in the Netherlands performs less than expected and that the degree of underperformance increases as the potential of the students is bigger. It is certainly not only the highly gifted students who insufficiently benefit from education. Other research suggests that it is the “mildly gifted” students (IQ between 120 - 129) who are most at risk of underachievement. This underperformance arises from

a very young age, in the first years of primary education. In comparison with other countries, gifted students in the Netherlands are notably lagging in primary education. In Primary Education in the Netherlands over the last 10 years many initiatives have been taken to improve the education for cognitively gifted children. In Secondary Education a sufficient approach is still lagging. At Bonaventura College Leiden therefore in 2011 an investigation is launched into an approach to prevent underachievement of pupils in the early years of secondary education and into ways to fight it. After a screening of a group of 210 students in the first class of the Lyceum a group of 28 students is selected with obvious risk factors for underperformance. For these students is in collaboration with the Dutch Centre for the Study of Giftedness an individual pedagogy designed in the form of tutoring. Of each selected student risk factors were mapped and these constituted the basis of an individual counselling. After 1 year, the risk factors were decreased by approximately 50%. In general, the students were happier than before. In the workshop the research process and results will be presented first and after it the approach will be demonstrated in an interactive manner. In relation to the conference theme also the method of Flipping the Classroom will be demonstrated. Flipping the Classroom is a method in which class 'knowledge transfer' is replaced by videos and any other forms of online instruction. Students can use the knowledge thus outside the school and learn the regular subject material. There is so more classroom time available to answer questions, individual attention, enriching, designing education and research based education. Flipping the Classroom can contribute to differentiated teaching and makes it possible for students to get instruction at their own pace.

SYMPOSIUM 2

Trends in Research and Theory of Giftedness

Time: Thursday, 18 September: 3:20 p.m. – 5:30 p.m.
Location: Plečnik 1

SYM 2: ECHA – Training – Present Situation and Future Perspectives of Further Education

Organiser: Christian Fischer, University of Münster, Germany

Discussant: Marca Wolfensberger, Utrecht University, The Netherlands

Being a teacher is a very responsible assignment and teaching the more able students may be even harder. Considering the teacher as the most important factor in adequate education for the gifted, and to make sure they can comply this difficult task, Prof Franz Mönks, the then President of the European Council of High Ability (ECHA), developed in the last decade of the last century a teacher training, now better known as the ECHA training (European Advanced Diploma in Gifted Education). Since then, this training is offered in different European countries. In this symposium the four presenters will show how they, offering the ECHA training, help teachers in various European countries within a talent support network, to become “Specialists in Gifted Education”. In addition to the present situation, the participants also focus future perspectives of the ECHA training (“European Master in Gifted Education”) concerning the great challenge to teach highly able students, now and in the future within a digital age, adequately.

SYM 2-1: Teacher Training in the Netherlands

[Lianne Hoogeveen](#)

Radboud University, Center for the Study of Giftedness, Nijmegen, The Netherlands;
l.hoogeveen@its.ru.nl

The Center for the Study of Giftedness at the Radboud University Nijmegen has offered the ECHA training since 1992. Since then, hundreds of teachers of Primary and Secondary Education, but also psychologist, who are working in education, have become Specialists in Gifted Education. Because of their training, and the research required in order to obtain their diploma, gifted education in the Netherlands has improved. In this symposium, we will show how we train our teachers, we will also show some interesting research projects from our students as well as give an overview of their activities after they have complete the course. One of the things they can do from September 2014, is continuing their studies, enrolling in the International Master Program "Gifted Education" at the Radboud University in Nijmegen. With the International Centre for the Study of Giftedness at the University of Münster, we are realising a Joint Master Program that we hope to offer from September 2015.

SYM 2-2: ECHA-Teacher Training: Further Developments in Germany

[Christian Fischer](#)

University of Münster, Germany; ch.fischer@uni-muenster.de

The International Centre for the Study of Giftedness at the University of Münster offers the ECHA-Diploma teacher training in Germany since 2001. Since then, several hundreds of teachers received the European Advanced Diploma in Gifted Education in Germany. These teachers not only have had important influence in the field of gifted education programs, but also on the general school development in Europe. This underlines the necessity of further developments from the ECHA-Diploma to the European Master Degree in Gifted Education, to meet the great challenge to teach highly able students as well as to promote individual needs in general, now and in the future, adequately. Based on the module structure of the ECHA-Diploma teacher training, this Master program focuses in depth theoretical competencies about conceptions of giftedness, diagnostic competencies in identifying the gifted, didactic competencies in educating the gifted, communicative competencies about counseling of the gifted and structural competencies about implementation of gifted education programs including perspectives for life-long learning. This Master Program should be combined with a Joint Master Program together with the Center for the Study of Giftedness at the Radboud University Nijmegen.

SYM 2-3: European Advanced Diploma in Gifted Education: Present Situation and Future Perspectives

[Petra Wolfsberger](#)

ECHA, Austria; petra.wolfsberger@lrs-noe.gv.at

The European Advanced Diploma in Gifted Education is a well-established programme in different European countries like the Netherlands, Hungary, Austria, Switzerland and Germany. More than 2500 teachers have graduated with the ECHA-Diploma: "Specialist in Gifted Education" and promote the gifted education movement in Europe in an

important way. ECHA-Austria was founded in 1998 as result of a large demand on coordination. The main purpose of ECHA therefore is to serve as a communication network and to promote the exchange of information from people who are interested in supporting the gifted. The aims of this association are among other to organize annual conferences for teachers holding the ECHA-diploma or the ECHA-certificate, for officials in the school administration and for researchers and students. ECHA Austria is publishing books including recent research and experiences in practice. Petra Summer presents the current situation of ECHA-Austria and gives a survey of new developments and tendencies in teacher-training-programmes for gifted education (ECHA-Courses).

SYM 2-4: ECHA training: The Who and the Why

[Anna Maria Roncoroni](#)¹ and [Marca Wolfensberger](#)²

¹Italian Association for Gifted and Talented Students; ²Utrecht University, The Netherlands;
gifted@roncoroni.eu

In Italy, except the Bolzano area, there is no ECHA training or any other type of professional training for teachers, excluding courses of just some tens of hours. In order to better understand the reasons of this "choice", it is necessary to go in deep in the Italian scholastic system. As measured by the International students assessment (TIMSS, PIRLS AND PISA), our students competencies slowly decrease starting from primary to high school. We are just one of the best schools in the world that allows students to get an Intermediate level of knowledge. To understand the reasons why we are an "intermediate" school, we have to know where we come from but also where we are going. Investing in Human Capital now is becoming a necessity from an economical point of view: most of times, the cultural changes has an economical reason because Economy is the driving force of the world. When we will becoming aware that investing in Talent development is one of the best way that can lead us out of the economic crises that we are living now, ECHA training will become a necessity, as well as all other activities directed to our most high ability students.

Trends in Research and Theory of Giftedness

DEMONSTRATION SESSION 2

Best practice strand

Time: Friday, 19 September: 8:15 a.m. – 8:45 a.m.
Location: Ravnikar Hall

DEM 4: Challenging mix of Geometry and Algebra, Through the Use of Dynamic Software

Elisabet Mellroth

Karlstad Municipality, Sweden; elisabet.mellroth@gmail.com

Geometry and algebra are tightly connected. But when learning geometry and algebra in at least the Swedish compulsory school and even in upper secondary school, those topics are rarely or only vaguely connected. Geometry are mostly educated through visual pictures, everyone knows for example what a circle is. Or they think they know. They also think they know what a distance is. Through the use of dynamic software, probably GeoGebra, it is possible to challenge students' conceptions in geometry and connect them to algebra. This challenge creates a curiosity, and endurance I believe especially among gifted students. The demonstration shows how dynamic software can be used to challenge the visual concepts of geometry and motivate students to connect geometry with algebra. In the demonstration it will also be discussed why the tool can be used to challenge gifted students. For example, using a software instead of paper and pen offers the student a bigger opportunity to faster and easier test his or hers ideas. This is a strength because of the fact that the idea often is quicker than the hand for a gifted student. At the time of this application the tool has not been tested on students, but 15 years' experience as a math teacher, with an ECHA-diploma, and as a research student in math education, I feel comfortable with the idea. It is probably also a task that can be used in research to observe students for example using patterns of actions described by Kiesswetter (1985). It will be very interesting to discuss the task with people from other countries.

DEM 5: Using Coaching in Educational and Counselling Work with Gifted Students

Ajda Erjavec Bartolj

Gimnazija Bežigrad, Slovenia; ajdaerjavec@gmail.com

The author argues that coaching – a non-directive approach to supporting one's thought process – seems to be very useful in educational circumstances. This argument also applies to using particular coaching skills and competences, which seem to be quite generic and desired in many social professions. Many teachers and counsellors are already quite active in using coaching skills, even if most of them are not aware that their specific (personal) communication patterns are very similar to using this “new” approach. More and more educators, including the author, take up the opportunity to participate in more “tangible” education for providing professional coaching services. The demonstration reflects upon three years of author's experience in using coaching skills in the classroom, within mentorship relations (psychology classes for 16 – 19-year-old gifted students) and in her practice as school counsellor. She also presents a few short case studies that describe results of coaching use in her practice of school counsellor and show how coaching can be used to support talent enforcement and/or development. This can be achieved through supporting and challenging (already existing) intrapersonal processes, which are directly linked to students' area(s) of giftedness - by asking “the right questions at the right moments”. On the other hand, coaching can also contribute to individual's talent development/management in a more indirect way, through progress in other areas (i.e. forming a healthy image of self...). The author's experience shows that a variety of gifted students can benefit from the use of coaching – both in individualized and group circumstances. The author argues that using the mentioned approach ideally fits into the frame of working with gifted adolescents – especially, because it can be used to support different kinds of talents (cognition, creativity, interpersonal skills, sports...). Certain conditions, which will be discussed during case study presentation, should be provided for successful implementation.

PAPER SESSION 13: Learning Environment 1

Best practice strand

Time: Friday, 19 September: 10:30 a.m. – 12:40 a.m.

Location: Boardroom Grafika

Chair: *Eva Vondrakova*

PAP 13-1: Challenge Response Behaviors of Gifted and Talented Children

Burcu Seher Calikoglu

Biruni University, Turkey; bscalikoglu2758@gmail.com

Gifted and talented students need challenging learning environments. Above average students get bored or frustrated in the schools when they are not challenged. However, it is not certainly known if challenge-seeking is one of the gifted and talented students' peculiar characteristics independently of learning environments. This paper aims at finding an answer to this question: Do gifted and talented students have common characteristic related to challenge? The study sample consists of 40 fifth, sixth and seventh grades of gifted and talented students and 40 fifth, sixth and seventh grades of randomly chosen average students who both receive their education in the same district of Istanbul, Turkey. Participants complete Student Information Sheet and Challenge Test in their classrooms. Student Information Sheet includes questions about their parents' education level, the number of family members, working conditions of parents and students' school grades. Challenge Test which is not based on knowledge developed by the researcher to observe whether or not students select challenge. Questions in the test are grouped into seven categories which are the easiest, very easy, easy, intermediate, hard, very hard, and the hardest. Students solve the question after they choose its level. There are three sections and each question is given 2 minutes. Implementation of Student Information Sheet and Challenge Test approximately takes 20 minutes. Two groups of students are compared according to their challenge acceptance-rejection behaviours determined by Challenge Test. Data is analysed with t-test. The results are discussed in consideration of the factors determined by Student Information Sheet.

PAP 13-2: School (Re)Organization in Digital Age according to Gifted Students

Polonca Pangrčič

Elementary school teacher, OŠ Cerkevjak - Vitomarci, Slovenia;

polonca.pangrcic@quest.arnes.si

Nowadays we have a lot of ICT devices in classrooms, so the teachers can make the classes interesting. Wheeler (2008) and Wellings and Levine (2009) write about how to use them without being "scared" and get better outcomes in students. So, we have high tech classes on one hand and ancient class organisation on the other hand. We must come to terms, that the technology is a big step in front of us and that the students (especially gifted, which are bored at their classes) walk with it. Some authors suggest different changes - from architecture to online learning or digital teacher corps. We will present results of a survey among 38 gifted students, which was performed at one Slovenian

primary school, which has got a Tablet PC's. We were interested how the use of ICT technologies affects the responsiveness of students, their interest in the matter and remembering information obtained in this way. Teachers have implemented 10 lessons with gifted students. Some teachers used Skype, other online classrooms, Wikipedia, apps, etc. Then we interviewed teachers about students' motivation, the progress of lessons and persistence of knowledge. The results were very promising; since the student are all fed up with everything, they showed outstanding collaboration, intrinsic motivation and the quantity of remembered material was above average. In the conclusion we will present some solutions or directions, how to implement high technology into schools. This is important for gifted student education, because gifted get bored earlier and are more curious, especially in novelties. The improvement must be made in three major fields: teacher training, providing schools with modern devices, networking, software, etc. and change school policies to adjust curricula and class organization for digital education.

PAP 13-3: Growing Up and Education the Gifted in Context to Politics and Other Circumstances

Eva Vondrakova

Association for Talent and Giftedness, Czech Republic; vondrakova@gmail.com

STaN (Association for Talent and Giftedness – previous Czechoslovak ECHA branch) has 25 years long experience in growing up and education gifted children in the Czech Republic. STaN members are psychologists, teachers and parents. Main activities are the Club of parents and teachers meetings, STaN workdays and conferences (including the 19.WCGTC conference Prague 2011), counselling, teachers training, and consultations. We organized "Club for clever and curious children" and later we cooperated with the "Small Owls" class for gifted children in the Rosemarin kindergarten. Newly there is STaN summer school for very young scientists (5 – 14 years old), organized in cooperation with GMK Bilovec (grammar school) and universities of Ostrava and Olomouc. STaN participated on several conceptions of the care for gifted students and cooperates with Ministry of Education. We make efforts to improve the quality of gifted children education. There are many obstacles which hinder development of giftedness. To eliminate them it is useful to understand: (1) How regularities in GC education manifest itself under diverse circumstances? (2) Effect of feelings about intellectually gifted in society, myths, wishful thinking and political decisions on gifted children education. (3) What do we have to do in order not to waste talents?

PAPER SESSION 14: Exceptionalities

Best practice strand

Time: Friday, 19 September: 10:30 a.m. – 12:40 a.m.

Location: Plečnik 2-3

Chair: Gordana Rostohar

PAP 14-1: Twice Exceptional Children Detected in Year 2013

Biserka Lep

The National Education Institute of The Republic of Slovenia, Slovenia; biserka.lep@zrss.si

Described is the detecting procedure and percentage of twice exceptional children that were considered by the Commission for the placement of children with special needs Maribor 1 in the year of 2013, which operates in the National Education Institute of the Republic of Slovenia. The Commission Maribor 1 identifies children with high IQ, which are usually not considered to be gifted prior to treatment. The Commission is constituted by the following experts: paediatrician, psychologist and SEN specialist, when needed also a child psychiatrist and other specialists. The product of the commission is an expert opinion of the child, in which is stated that the child is twice exceptional and that IEP must contain emphasis on his strengths. In the year 2013 we had placed 22 twice exceptional children for the first time, which represents 5% of all children placed in the year 2013 in our commission. 1/3 of these children are girls, while 2/3 are boys. The age of the children ranges from 7,10 to 18,7 years. During primary school 4 children or 18% of twice exceptional children (altogether 22) were already identified as gifted before the proposal for placement was made. Over 50% of students are diagnosed with ADHD and learning disabilities, some of them have pharmaceutical intervention. The data match with the data from literature, where various authors state that about 3% to 5% of students with disabilities are gifted; most of them are boys which also largely have ADHD, often with learning disabilities. National Education Institute of the Republic of Slovenia helps schools with coming up with an IEP or Individual Education Plan as well as implementing said plan. In such circumstances, schools invite us to observe the child during class time, they ask for expert help with forming an IEP as well as better involvement of the parents. More and more schools ask for advisory services for the whole staff as well as presentation and explanation of twice exceptional children and their characteristics. The understanding of their exceptionality and the need to focus on their strengths, not their weaknesses or disabilities is thus spreading.

PAP 14-2: Developing the Digital Competencies of Twice Exceptional Students

Nela Bejat Krajnc and Bor Černek

Primary school Pod goro Slovenske Konjice, Slovenia; nela.bejat-krajnc@guest.arnes.si

Working with gifted pupils requires teaching modification in order to ensure that gifted pupils develop their abilities to the best extent. This paper is about developing digital competences of a gifted pupil. The teacher turned into the pupil's personal mentor

and encouraged him to explore the field of his interests. The pupil got responsible for his knowledge, directed his learning, discovered information. An individual educational plan, designed especially for each gifted pupil is a key document for setting goals.

The aims of Bor's individual plan are: (1) To develop his interests and strengths - languages and computing; (2) To broaden language knowledge by using ICT; (3) self-directed learning personality development - to increase self-confidence and improve self-esteem.

On the basis of this document the teacher prepared activities which helped the pupil to become the designer of his own learning through ICT. To achieve these goals, the pupil got the teacher's role in an e-classroom. He searched for e-materials, under the mentorship of the teacher. These were in connection with the current lessons and had a function to facilitate understanding of the content, revision, consolidation, and motivation. The learner added web links to additional materials, inserted video clips and prepared activities for other pupils to enable developing language skills. Thus, he has deepened his own awareness and knowledge of grammatical rules, chose relevant vocabulary and activities with the help and coordination of his teacher - mentor. During this work, the pupil developed his own digital competences: (1) Evaluating information; (2) Developing content; (3) Integrating and re-elaborating; (4) Protecting personal data. At the same time the teacher's role has changed and shifted from traditional teaching style to becoming a mentor, who encourages the learner's online research and learning, taking into account his individuality, specific needs and talents.

PAP 14-3: Dual Exceptionality Improving Provision for Gifted Children with Asperger in Regular Classrooms

Diane Montgomery

Middlesex University, USA; dmont507@aol.com

There has been a 40 per cent increase in the identification of Asperger Syndrome (AS) in the last few years. This paper considers the characteristics and management of children with AS within an educational context. The purpose of the research is to find ways to ease the child's social and educational integration into the regular classroom and to up-skill the teachers involved. The method has involved analysing theory and research underlying the Asperger condition and its management, Biographical details of cases are recorded and a clinical-educational picture of needs is drawn up. Then best practice is applied to the individual cases with which teachers have had to deal and outcomes are evaluated. Parents and teachers are involved in the proposed interventions as appropriate. As multiple case studies have accumulated it has enabled generalizations and principles to be evolved. It is clear thus far that as yet there is no single best fix intervention that can be applied to all children with Asperger Syndrome. Their different personalities, home circumstances, experiences, learning histories and abilities make it important for interventions to be more personalized. In addition it will be shown that as part of the complexity it is often the school itself or the pedagogy that needs some modification to create an "Asperger friendly environment". These issues, cases and relevant strategies will be discussed and exemplified.

PAP 14-4: The Pros and Cons of Gifted Secondary School Students' Perfectionism - A Counselling Perspective

Gordana Rostohar

Gimnazija Brežice, Slovenia; gordana.rostohar@guest.arnes.si

When thinking about giftedness in digital age, we have to pay our attention to counselling to perfectionist students as well, for it is well documented that the perfectionism can enhance or hinder giftedness. Psychological school-counselling experiences with gifted students are discussed within the current literature on perfectionism and perfectionism in gifted students. The author's approach to counselling is mainly based on cognitive paradigm. The paper primarily focuses on understanding of perfectionism as a multidimensional construct and as a personal trait; the emphasis is on specific perfectionistic cognitive patterns, emotional reactions, behaviour and social relations of perfectionistic gifted secondary school students. Although numerous studies exist regarding perfectionism of gifted students there is little attention paid to school-counselling practise. In the paper it is discussed how perfectionism contributes to some psychological issues of gifted secondary school students and describes some of the consequences for their mental health. Finally it is shown why it is important for school counsellor to understand and differentiate between students with healthy strivings to achieve high standards and those with forced persistence aiming to reach unrealistically high goals, feeling dissatisfaction and showing inadequacy unless achieving.

PAP 14-5: Effectiveness of Mindfulness Cognitive Behavioural Therapy with Talented Youth

Paula Hillmann

University of Wisconsin-Madison, USA; hillmann@education.wisc.edu

Mindfulness is our capacity to become aware of our personal problems and successes "in the moment". We can achieve life balance by recognizing our present life situations and using mindful strategies to control them. Rather than react, a mindfully healthy person learns to self-reflect, then act. Ways of knowing ourselves from the inside-out have particular importance in the digital age as we face a daily barrage of information from multiple sources. Mindfulness Cognitive Behavioural Therapy encourages gifted and talented youth to use emotional intelligence skills more effectively as they face difficulties in their lives. Preliminary data suggest these strategies correlate with reductions in anxiety, heightened success in school, and improved relationships with friends and family. Goals for ECHA session participants: (1) Recognize how Mindfulness can moderate negative effects in the digital age; (2) Learn how Mindfulness can help manage anxieties, stressors and emotional intensities; (3) Practice some mindful-health strategies to use with children.

PAPER SESSION 15: Innovations & Programmes 2

Best practice strand

Time: Friday, 19 September: 10:30 a.m. – 12:40 a.m.

Location: Plečnik 4

Chair: Beatriz G. Tomšič Čerkez

PAP 15-1: Project Work as Enrichment for Gifted Pupils

Urška Repinc¹ and Primož Južnič²

¹Primary School dr. Janez Mencinger Bohinjska Bistrica, Slovenia, ²Faculty of Arts Department of Library and Information Science and Book Studies, University of Ljubljana, Slovenia; urska.repinc@guest.arnes.si

Carefully planned school projects can be welcome enrichment for gifted pupils and whole school community. They can also be seen as an opportunity for different gifts and talents to be expressed, encouraged and cultivated. Different profiles of professionals can be challenged for this kind of work, among them also the school librarian. Collaborative culture among school staff is necessary and impacts well to collaboration among pupils. The one who coordinates and leads the whole school year long project is supposed to be flexible enough to adjust to concrete school situation and opportunities available outside the school: local community events, state and international calls, competitions, festivals. Through this kind of the project pupils usually investigate something in their surroundings, collect information, interpret information, present results to different audiences. Research literature offers different models of school professionals' collaboration; usually it is welcome if one of the professionals comes from an institution outside the school. Preferred teachers' competences are: to empower pupils with inquiry strategies (information literacy), ICT (use of information communication technology), presentation skills (art, creative solutions), skills connected to project theme (science, ecology, natural and cultural heritage...). When considering creative solutions about concrete task in school environment, we could sometimes speak also about first steps to developing entrepreneurship thinking as a way of promoting innovation. One of opportunities in Slovenian school system is to participate in the State festival Tourism and its initiatives. In this paper a case study of one project at the Primary school dr. Janez Mencinger Bohinjska Bistrica is presented. The methods used are interviews and focus groups. In presented project the theme is to think about what to offer to young visitors in two days in hometown. Infusing inquiry into the process is one of the goals, so instruction starts with questions rather than content.

PAP 15-2: Perceptions of Gifted Students about Fluent Speaking Course in Education Program for Talented Students (EPTS)

Emine Ozturk

Anadolu University, Turkey; emineozturk10@gmail.com

The purpose of this study is to examine gifted students' perception about Fluent Speaking in English course in Education Program for Talented Students in 2013. EPTS is an university based program that services after school for elementary and secondary school students who are identified scientifically and mathematically talented by the identification system of the program. EPTS summer program includes elective courses such as Fluent Speaking in English, Critical Reading in English and Creative Drama except main courses like mathematics, science and character education. Fluent Speaking is an academic course that main goal is to develop gifted students' speaking skills to express themselves comfortably in their social life in English as a second language. Course lesson plans were prepared in accordance with EPTS's analytical, practical and creative development acquisitions. The participant included 22 sixth, seventh and eighth grade students who had attended the EPTS. As a data collection tool EPTS Course Evaluation Form were administered to investigate the perception regarding Fluent Speaking course in this program. The EPTS Course Evaluation Form was made from two 5-point Likert type questions and three open ended questions. This scale was ranging from 0 (strongly bad) to 4 (strongly good). Likert type questions in EPTS Course Evaluation Form analysed with one sample t-test which was used to test the mean score of each item in the scale against the criteria "2" (good). As a consequence students' perceptions about Fluent Speaking course in EPTS in 2013 were found positive. Students thought that Fluent Speaking course was enjoyable and beneficial. Other results will be discussed at conference in detail.

PAP 15-3: Teaching Gifted English Language Learners in Saudi Arabia

Badriah Alkhannani, Margaret Sutherland, and Niamh Stack

University of Glasgow, UK; b.alkhannani.1@research.gla.ac.uk

Currently in Saudi Arabia, English language is playing an important role; it is used in technological education, medicine, and in numerous other areas as a basic language of communicating knowledge. In addition, many Saudi students have recognised that English is no longer just a language needed to pass an examination, but that it is an important subject for higher education, business and international communication. The teaching of English as a foreign language (EFL) has therefore gained significance and consequently there is substantial literature relating to teaching EFL. However, while there is also a significant body of literature relating to the teaching of gifted learners, to date there is a paucity of literature that has synthesised the two sets of findings in a way that supports teachers of EFL when they have gifted English language learners in their regular class. This paper will present initial findings from a review of the literature. The main themes arising from the review of literature include: 1) The concept of gifted English language learners. 2) Teachers' attitude towards gifted English language learners. 3) Teachers' support towards gifted English language learners. 4) Teachers' understanding of gifted English language learners. Having highlighted these themes the paper will then conclude by identifying the emerging questions relevant to the development of gifted education research, policy and practice in this curricular area in the Saudi Arabian context.

PAP 15-4: The Stimulation of Executive Skills during a Study Trip to Beijing: How can Mentors Stimulate Gifted Youngsters to Engage in Challenging Situations that Help Develop their Executive Abilities?

Anita Wuestman

ECHA Specialists in Gifted Education, The Netherlands; awuestman@hoog-begaafdheid.nl

A case study derived from experience. In August 2014, eight gifted youngsters (ages 15 to 18 years old) helped organise their own study-trip to Beijing. The main question accompanying their study was: "What can Dutch executives, teachers and students learn from their Chinese colleagues?" To be able to answer this question, the youngsters engaged in an in-depth research of the differences between the Chinese and the Dutch method of talent stimulation. The Squibs Foundation, Gifted Youth Peer Community, provided guidance for these eight gifted youngsters in their preparation of the trip and during the trip itself. In this presentation the author talks about the role of the mentor in guiding the experience of gifted youngsters in this specific example. Three key-aspects are thoroughly discussed: (1) The stimulation and creation of challenging situations; (2) The development of executive skills; (3) Personal drive and motivations. The presentation is richly illustrated with examples from experiences during the preparation of the trip. During the trip the youngsters learned a great deal, not only, on the fascinating culture of the world's fastest growing economy, on durability issues that become ever more relevant now China's economy and demography are growing through the roof and on the new young generation of Chinese people that grows up in a society, that is hardly comprehensible for their parents. Most of all, the youngsters have learned a great deal about their selves. The youngsters have been able to encounter their own personal boundaries and at times stretching or passing these. What exactly did these gifted youngsters learn which can be applicable in the daily life of youngsters in the Netherlands? What role did the mentors play in assisting the personal growth of these youngsters? These questions are discussed to extent in this presentation. This presentation describes an integration of Dawson & Guare's theory on executive functions and Grave's model of Emergent Cyclical Levels of Existence in outer-curricular activities and is therefore relevant for executives, teachers and mentors alike.

PAP 15-5: Developing Stimulation of Gifted Students through Interdisciplinarity

Beatriz G. Tomšič Čerkez

Faculty of Education, University of Ljubljana, Slovenia; beatriz.tomsic@pef.uni-lj.si

Many times the key reason for loose of gifted students motivation is the consideration of contents isolated from their authentic contexts and not linked to the interests of students. When planning the learning process, we should conceptualize the group of learners as a community of individuals with very different previous experiences, abilities, interests and affinities. The need for individualization of the educational process demands that the teachers consider the individuals as well as the group in the design of working strategies, creating flexible, alternative and dynamic teaching and learning strategies. These factors are a key for effective motivation of gifted students. The paper presents an example, where at a specialized secondary school in music education, interdisciplinary connections between contents from the fields of visual arts and music

were used to further simulate gifted students in their motivation to learn about arts. 51 students from third year took part in the activities. These consisted of five projects, each of which based on three phases: theoretical approach to visual art contents through music, artistic expression and evaluation from the point of view of students' improvement in the field of music. The starting points of the comparisons were well known concepts from the field of students' interest and giftedness. In fact, visual art expression meant a deep inside and reflection on contents they were highly interested in. Other factors that played an important role in students' motivation were surprise and unexpected links between different contents and the possibility to construct individual strategies for artistic expression. As a conclusion it is possible to state that interdisciplinarity should be carefully planned: motivation is higher if the subjects of the educational process have the possibility to create their own learning strategies with contents that originate in their internal motivation. This was also confirmed by the students at the final evaluation and exhibition of works. This strategy demands competent knowledge on the side of the teachers' and sincere belief in the possibility of an integrated overall view of contents that effectively stimulates students in their personal development.

PAPER SESSION 16: Social Relations

Scientific strand

Time: Friday, 19 September: 10:30 a.m. – 12:40 a.m.
Location: Ravnikar Hall

Chair: Jutta Moehring

PAP 16-1: Inclusion of Gifted Students – Possible or Not?

Jutta Moehring

Technical University of Munich, Germany; jutta.moehring@tum.de

Ability grouping in special classes has been shown to have strong effects for the academic achievement of high ability and gifted students (Goldring, 1990; Schneider et al., 2012; Brulles et al., 2010). However, the grouping of high-ability and gifted students has also been critically dis-cussed. Being labeled as gifted can cause negative effects on the psychosocial development of the students, because those students feel sometimes isolated (Freeman, 1983, 2006; Hertzog, 2003; Gross, 2004; Eddles-Hirsch et al., 2012). This study investigates firstly, if students of special classes feel integrated in the year group of regular class students and secondly, which factors promote or impede the integration of those students. The study-design is that of two interview studies with students, who are part of a special pro-gram. The students were taught in a special class but had also some of the lessons together with students of regular classes. In the first study, guideline-based interviews with 11 students of the first student group in that special program were conducted, in the second study, 14 students of the third student group two years later. The interviews were analysed through qualitative content analysis (Mayring, 2010) on basis of Reiser's (1984) theory of integrative processes. The used coding system focused on processes on four levels: on the intra-psychic, the interactional, the institutional

and the social level. Results showed that there are students who feel integrated and those who do not. In both cases reasons could be identified on all levels. Main reasons for being integrated seem to be the number of lessons together with students of regular classes and the sensitive dealing of teachers with the students. The results support the conclusion that success and failure of integration processes depend on two main preconditions: open and unprejudiced attitude of teachers towards programs for gifted students and institutional framework conditions that allow contacts between different student groups easily.

PAP 16-2: Inclusive Education for Gifted Children and Competences for Teachers

Janine Haenen

Leiden University of Applied Sciences, The Netherlands; haenen.j@hsleiden.nl

In the past years a growing number of children in The Netherlands is attending special educational arrangements for gifted children. However, not much is known about the effectiveness of these special arrangements and the specific knowledge and skills needed to teach those children. This study is about the skills and competences that are needed to teach gifted children. The purpose of this study was to investigate the success factors of gifted education and what this means for teacher training institutes. The main research questions are: (1) Which knowledge and skills are needed to teach gifted children? (2) Which educational arrangements are effective in meeting the educational needs of gifted children?

Based on interviews with parents and teachers of gifted children, a questionnaire was developed about competences to teach gifted children and effective educational arrangements. In total 344 parents and teachers of gifted children completed this questionnaire. Conclusions are that teachers have to learn their students the characteristics and needs of gifted pupils in order to recognize these children in their classroom. In addition, it is important that teachers know how to customize work material and methods for gifted children and to coach children in a solution focused way in their learning process and metacognitive skills. Furthermore, teachers have to perceive parents as an expert on the child's needs and work together in teaching the children. In this way, teachers are able to meet the educational needs of gifted children as well as the needs of the rest of the class.

PAP 16-3: Assessment of Social Interaction within Enrichment Programs through Observational Methodology

María Cadenas¹, Lianne Hoogeveen², and Africa Borges¹

¹University of La Laguna, Spain; ²Radboud University, Center for the Study of Giftedness, Nijmegen, The Netherlands; mcadbor@ull.es

The study of social interaction inside the classroom, it is a difficult but important task because of the influence of early social relations in the social and personal life in the adult stage of a person. Some approaches suggest that the social adaptation in primary school of a child is a predictor of his or her adjustment and academic performance. While there is no evidence that children with high intellectual abilities will develop social problems, some of them can have difficulties in the relations with their peers at school. Therefore,

it is necessary to develop appropriate tools which allow evaluating the social interaction of these students in an educative context, in order to detect and prevent social difficulties that can affect their academic achievement. In this work we present an observational instrument designed to analyse the social interaction in enrichment programs, Observational Protocol for Social Interaction within the classroom (OPINTEC, v. 4). This protocol is based in the three functional mechanisms which regulates the social interaction: social effectiveness, social correspondence and social reciprocity. The instrument have been applied in two enrichment programs, one in Spain and one in The Netherlands, in order to compare the influence of cultural and educational differences in the social behaviour of the students. The participants are 10 children between 7 and 12 years old, five from each country, who have been observed in three sessions of their respective programs. The objective is to analyse the social interaction of each group and compare them to asses if there are differences in their behaviour. The results from the group in Spain show higher frequencies in the interaction with the instructor. The more common behavioural patterns are those which implies interaction with the teacher about the activity carried out. Data from The Netherlands is in process of analysing. For the assessment of the behavioural patterns it is used the Lag Sequential Analysis with the program SDIS-GSEQ.

PAPER SESSION 17: Programmes & Interventions

Scientific strand

Time: Friday, 19 September: 10:30 a.m. – 12:40 a.m.
Location: Plečnik 5

Chair: Joyce Gubbels

PAP 17-1: The Effects of a Science-Focused STEM Intervention on Gifted Elementary Students' Science Knowledge and Skills

Ann Robinson¹, Debbie Dailey², Gail Hughes³, and Alicia Cotabish²

¹Jodie Mahony Center University of Arkansas at Little Rock, USA; ²University of Central Arkansas, USA; ³University of Arkansas at Little Rock, USA; aerobinson@ualr.edu

The purpose of the study was to measure the impact of a two-year STEM intervention on the science learning of gifted students in Grades 2-5. The intervention, STEM Starters, provided sustained and embedded professional development to classroom teachers and to pull-out program teachers to support the implementation of a problem-based curriculum in their classrooms. The current study was part of a larger randomized field study on the effects of teacher professional development and the implementation of an inquiry-based curriculum on teaching and learning in science. Only results for identified gifted students are reported here. Randomly selected from five low-income schools in a southern state, 70 teachers from Grades 2 through 5 were assigned to the experimental and control conditions. Students assigned to experimental teachers were designated as students in treatment classrooms, and students assigned to control teachers were designated as students in comparison classrooms. Randomization occurred at the teacher level. During the intervention, randomly assigned teachers participated in 120 hours of

professional development that focused on science content, inquiry-based instruction, specific problem-based curriculum units, technological applications, differentiation of instruction, and the identification of gifted students from underrepresented groups. As part of the intervention, teachers attended two summer institutes; the institutes were one week in duration. During the academic year, embedded professional development, defined in this study as peer coaching, supported teachers in the implementation of the problem-based curriculum and in building science content knowledge. Although multilevel modelling is often the most appropriate technique for analysing data collected from students nested within classrooms (O'Connell & McCoach, 2008), in this study gifted students were spread across classrooms and did not meet the suggested minimum cluster size of 10 (Bickel, 2007). For each measure (Process, Concept, and Content) researchers conducted two one-way analysis of covariance (ANCOVA) tests (one for the Year 1 data and one for the Year 2 data) to compare students' posttest scores between the treatment and comparison groups using the pretest scores as a covariate to control for initial differences between the two groups on the measure. The researchers also used eta squared to report the effect sizes. Eta squared is the proportion of the total variance that is attributed to the independent variable (Becker, 1999). Statistically significant gains in science process skills, science concepts, and science content knowledge by gifted students in the experimental group when compared with gifted students in the comparison group were found. These results document the efficacy of sustained teacher professional development and a rich problem-based inquiry curriculum at the elementary level in developing the science talent of students.

PAP 17-2: The Impact of M3 Curriculum & the Role of Teacher as a Facilitator on the Math Creative Problem Solving Ability of Mathematically Promising English Language Learners

Marcella Mandracchia and Seokhee Cho

St. John's University, USA; Marcella.Mandracchia07@stjohns.edu; chos1@stjohns.edu

The purpose of this mixed method study is to evaluate the effectiveness of three-year implementation of the Mentoring Mathematical Minds (M3) curriculum on math creative problem solving of mathematically promising ELL students (MPELLs) in the 5th grade. In addition, the impact of the role of the teacher as a facilitator was examined with focus group discussions and "Teacher as a Facilitator Survey", a revised version of Flanders' Interaction Analysis. A sample of 122 fifth-grade MPELLs from four NYC public schools were identified, and randomly assigned to the treatment and comparison groups as well as five teachers. The treatment groups received the M3 curriculum for three years, while the comparison groups did not receive the M3 curriculum. The Math Creative Problem Solving (MCPS) Test was administered before and after program implementation every year, to gather information on the gains in MCPS. The data is analysed using independent t-tests and MANOVA to determine if there is any difference in MCPS between the treatment and comparison groups of MPELLs. The Teacher as a Facilitator Survey is used to assess the effect of the teachers' perceived self-concept as a facilitator (high versus low) on the students' learning outcomes of MCPS. An independent t-test showed that there is significant difference in students' gains in MCPS between the teachers with high perception of the role as a facilitator and those with low perception. The focus group discussions and the survey revealed effective facilitator teachers engaged in positive

classroom activities, such as accepting students' feelings, praises or encourages students, accepts or uses students' ideas, ask questions, demonstrates knowledge through lecture, gives detailed directions, uses their authority to give constructive criticism, has time management, demonstrates flexibility in their actions and verbal cues, maintains a sense of humour, and demonstrates resourcefulness and creativity.

PAP 17-3: Promoting the Development of Gifted Pupils and Digital Competence

Fani Nolimal

National Education Institute, Slovenia; fani.nolimal@zrss.si

Taking into consideration that the implementation of the European key competences and 21st century skills (Partnership for 21st century skills 2011) needs to be supported by integrative and innovative learning environment we had launched several cross-curricular national projects with the main focus in the development of that competences (in reading and digital literacy) as well as collaboration, knowledge construction, skilled communication, global awareness, self-regulation, authentic problem solving and technology (ICT) used in learning. Not only for the purpose but also to improve the PISA results (lower percentage of low performed students and higher percentage of high performed) we have tried in the participated schools to implement strategies that coincides with the student centred pedagogy and high level of digital competences (Ferrari, 2013), e.g. critical thinking and evaluating of information, creating the unique media presentation, using innovative technologies, proactive and creative problem solving. In order to evaluate how the goals in the national projects were met we did an empirical study with the aim to answer on this research question: How successful are schools by using ICT in developing the dimensions of gifted students and competences for the 21st century? For that purpose we covered the following research fields: school projects in the area of ICT; school activities based in in the area of gifted students; home and school learning activities based in using ICT; individual learning programmes for gifted students. The data was gathered with the help of the questionnaire and semi-structured interviews made for students. Although the study is still in process we can see that we are further challenged by the development of high literacy level, consistent personalisation of pedagogical work supporting the high ability students.

PAP 17-4: Exploring Aspects of Participation in an International Online Network for "Gifted" Students – a Research in Progress

Marina Charalampidi

University of Warwick, Institute of Education, UK; m.charalampidi@warwick.ac.uk

This paper presents research in progress on the use of a social educational network, set up by the University of Warwick for young people across the world identified as gifted. This network, namely IGGY, was created with the aim of nurturing the gifted through enrichment material and opportunities for online interaction. The use of online networks is one means to address support for gifted students. Key gains of participation include wider opportunities for collaborative work and peer interaction in addition to personalised routes through enhancement material, with such material accessible anytime and anywhere. Social networking environments are particularly valuable for gifted

students as they may help provide both challenge and belonging in a community of peers. However, research concerning their use by gifted students is limited. This study adds to the literature in that it aims to explore the blending of giftedness and online networks. Our research has aimed at understanding the experience of IGGY members. In one strand of the research we carried out in depth interviews with ten students as well as investigated messages and other sources of participation data. We examined the reasons why students used the network, how they used it and the factors that either facilitated or constrained their involvement. Key findings that emerged indicated that IGGY members utilised the network for a variety of reasons, among which learning, a sense of "belonging" to a community of like-minded people and communication were key. Their level of participation was affected by multiple factors and varied across time but at root social presence, time and ease of use seemed to be among the most influential facilitators. To summarise, these research findings suggest that this kind of international online network has the potential to cater for the differing academic and affective needs of gifted students.

PAP 17-5: Development of Triarchic Intelligence Abilities: the Effects of Acadin

Joyce Gubbels¹, Eliane Segers¹, Lianne Hoogeveen², Desirée Houkema³, and Ludo Verhoeven¹
¹Behavioural Science Institute, The Netherlands, ²Radboud University, Center for the Study of Giftedness, Nijmegen, The Netherlands, ³Stichting Leerplanontwikkeling Nederland, The Netherlands; j.gubbels@pwo.ru.nl

According to Sternberg's triarchic theory of intelligence, three types of intelligence are essential in achieving success in school and life: analytical, practical, and creative intelligence. Successful intelligence is supposedly dynamic rather than static, implying that it can be influenced by for example the school environment. Previous research showed that triarchic teaching resulted in positive effects on all three intelligences in high school students, especially when tailored to the individual intelligence profiles. Studies in primary schools attempting to enhance triarchic intelligence are generally lacking. In the present study, the effects of a triarchic intervention program on upper elementary pupils' triarchic intellectual abilities were examined in a pretest-posttest control-group design, using the benefits of ICT. The intervention is provided with Acadin: a sheltered ICT environment in which pupils and their teachers can select enrichment assignments that match their profile and interests. Out of a group of 520 children, the 20% best scoring pupils were selected. That is, the 108 pupils that scored in the top 27% on at least two of the three triarchic intelligences were qualified as being gifted. Of the total group of 108 gifted pupils participating in the study, 59 pupils worked on assignments in Acadin for 25 weeks. The other 49 gifted pupils followed the regular educational program. All pupils completed a test battery measuring triarchic intellectual abilities and socio-emotional factors as motivation, wellbeing and self-concept. In addition, school achievements regarding vocabulary and numerical skills were monitored. Posttests are scheduled for May 2014. Differential effects of the intervention for pupils in the control versus intervention group will be discussed.

PAPER SESSION 18: Acceleration

Scientific strand

Time: Friday, 19 September: 10:30 a.m. – 12:40 a.m.

Location: Boardroom Risba

Chair: Ana Altaras Dimitrijevic

PAP 18-1: Subject-Based Acceleration in High Schools: Perceptions of Gifted and Average-Ability Students and Their Teachers

Ana Altaras Dimitrijevic¹ and Danilo Drobnjak²

¹University of Belgrade, Department of Psychology, Serbia, ²The Fifth Belgrade Grammar School, Serbia; aaltaras@f.bg.ac.rs

The acceleration of gifted students is still surrounded with controversies: experts find it to be highly effective, but not readily utilized in schools; educators themselves tend to report rather positive opinions on acceleration. Seeking to clarify how educators perceive acceleration in an inclusion-oriented system, and to bring students' views into the picture, we investigated perceptions of subject-based acceleration in teachers, intellectually gifted, and average-ability students. Participants in the study were 109 high-school teachers and 304 students (aged 16-18). The latter group was divided into subsamples of intellectually gifted (Ng = 46) and average-ability students (Na = 258), with assignment to the gifted group based on scoring above the 85th percentile on two intelligence tests. Participants were administered a questionnaire on subject-based acceleration (teacher/student form) employing a Likert-type scale with several subscales (perceived general usefulness, academic gains, socioemotional effects, need for acceleration, feasibility, and readiness to personally utilize acceleration), also yielding a global score. According to descriptive analyses, teachers hold rather positive views on acceleration, with perceived general usefulness and readiness to utilize acceleration rated highest (M = 4.14/3.86, SD = .73/.68, respectively), and its feasibility and socioemotional effects eliciting the lowest ratings (M = 2.75/3.30, SD = .64/.62). A similar pattern was observed in the student sample. An ANOVA yielded significant results (F = 28.30, p < .001), with post-hoc tests revealing more positive perceptions of acceleration in the teacher and gifted samples than in average-ability students; the teachers and gifted students were equally positive in their global ratings of acceleration, yet the students reported significantly lower readiness to personally utilize it. The results support the contention that accelerated learning is a special educational need of gifted students. Contrary to common concerns, teachers seem to be highly willing to provide for this need; nevertheless, they require support in implementing the intervention, whereas gifted students themselves require encouragement in taking up the challenge of accelerated learning.

PAP 18-2: Acceleration, Enrichment, or Internal Differentiation – Consequences of Measures to Promote Gifted Students Anticipated by German Secondary School Teachers

Martina Endepohls-Ulpe

Institute of Psychology, University of Koblenz-Landau, Germany; endepohl@uni-koblenz.de

In the last decades numerous measures and programs to promote gifted students have been developed world wide, but in spite of these enhanced scientific and public efforts to improve gifted education there still are a lot of difficulties to implement some of these measures in the daily routine of schools. The presented study examines the consequences – for students as well as for teachers – which teachers from German upper secondary ("Gymnasium") and secondary modern schools (Realschule) anticipate for different measures to promote gifted students: acceleration, enrichment, internal differentiation and early placement at university. 175 teachers (111 Gymnasium teachers, 64 teachers from secondary modern schools) filled in a questionnaire with 4-step Likert-Items on possible outcomes of the four different types of promotion for gifted students. Data analysis was done by 2x2x4 ANOVA, with type of school and experience with measures of promotion as between subject factors, type of measure as inner subject factor and mean values on items concerning anticipated consequences as dependent variable. Results show significant differences with respect to assessed outcomes between the four specified measures. Especially for early placement at university teachers feared negative consequences for students like work overload, social marginalization and lack of leisure time, whilst for internal differentiation, the method with the most positive anticipated outcomes for students, strong negative consequences in form of work overload and organizational problems for teachers were anticipated. To counteract these – mostly non-realistic – apprehensions and their possible negative consequences on the promotion of gifted students it seems both necessary to provide teachers with realistic information on the consequences of various measures of gifted education and to impart methods of internal differentiation already in teacher training at universities as well as in advanced teacher training.

PAP 18-3: 15 Years of Early Study in Austria: Experiences, Evaluation, and Prospects

Astrid Fritz

Austrian Research and Support Center for the Gifted and Talented (ÖZBF), Salzburg, Austria; astrid.fritz@oezbf.at

This year the early study program in Austria is celebrating its 15 years anniversary. Since then more than 300 pupils in Austria have had the opportunity to enrol at university and take courses while still attending school. This academic acceleration and enrichment program was initiated by both the former Federal Ministry for Education, Science and Culture (BMUKK) and the Austrian Research and Support Center for the Gifted and Talented (ÖZBF). The program intends to provide gifted pupils with the opportunity to enrich their high school experience and to help them supplement, not supplant, their academic endeavors. Following graduation from school, pupils receive full credits for completed courses as soon as they enrol as full-time students at a university. However, even though the number of universities and colleges that support this program is increasing,

the number of participating pupils has been stagnating at a rather low level when compared to e.g. German program participation rates. A recent evaluation of the program assessed the causes for this development. Here, all 71 pupils currently participating in the program were surveyed in an online questionnaire (response rate = 74 %). Results indicated room for improvement regarding the awareness of the program, especially on school level. Only a minority of the participants had knowledge about the program through information provided by their school teachers or headmasters. Moreover, some pupils reported disapproval and poor support on the part of their teachers. These and other results of the evaluation are discussed in comparison to evaluation findings from programs in other countries. On this basis, key factors for success or failure of early study programs are summarized and the implementation possibilities of these factors on both school and university level are discussed.

WORKSHOP SESSION 3

Trends in Research and Theory of Giftedness

Time: Friday, 19 September: 10:30 a.m. – 11:30 a.m.
Location: Martin Krpan Hall

WOR 5: Challenging Gifted Students: Differentiation Made Simple

*Julia Roberts*¹ and *Tracy Inman*²

¹Western Kentucky University, USA; ²The Center for Gifted Studies at Western Kentucky University, USA; julia.roberts@wku.edu; tracy.inman@wku.edu

Teachers mistakenly believe differentiating the curriculum means starting over, creating completely differentiated lessons for each topic. Not so! Differentiation begins with adapting favourite lessons, focusing on content, process, and product and students' needs, interests, and levels of readiness. Learn strategies that make lessons engaging to all – including the gifted and talented. This session explores differentiation as a means of challenging the gifted student. Educators new to or uncomfortable with differentiation as well as teacher educators who work with teachers will be led step-by-step through this process. Personal favourite lesson plans – in lieu of units which can overwhelm the novice – serve as the starting place. An innovative look at strategies and theories probably already known to them serves as impetus for transformation. Numerous examples from multiple contents and grade levels will be shared. Through a workshop setting, participants will explore two differentiation strategies involving differentiation of process – one based on the revised Bloom's Taxonomy and the other based on Venn diagrams. Through examples, hands-on practice, and the creation of the lessons themselves, participants will build confidence in their ability to transfer the strategies to their classrooms. With two presenters, the workshop should address individual needs. Participants will incorporate differentiation strategies into a lesson plan so that it is ready for immediate implementation. Participants will leave with strategies ready to differentiate and implement lesson plans plus they should feel much more comfortable with differentiation. They will examine tiering to differentiate as they learn strategies that help address all students' learning needs, including those who are gifted and talented.

Time: Friday, 19 September: 11:40 a.m. – 12:40 a.m.
Location: Martin Krpan Hall

WOR 6: Developing Psychological Preparedness in Gifted Children

Maureen Neihart

National Institute of Education Singapore, Singapore; maureen.neihart@nie.edu.sg

Why do talented people fail? Sometimes it's because they've reached a level at which further talent development requires more than ability and hard work. It takes psychological preparedness, habits of mind that drive performance (Neihart, 2008; Subotnik, Olszewski-Kubilius, & Worrell, 2011). Psychological preparedness for high achievement may be the single most neglected component of talent development even though teachers, coaches and researchers agree that it is an essential, pivotal factor. Research concludes that the mental and emotional factors associated with high performance are not innate, but can be cultivated and shaped. To help talented young people negotiate the sometimes gruelling terrain of talent development, we need to provide them with more than domain specific skills and practice. We need to equip them with psychological tools they can draw on when the going gets tough. A review of research across disciplines suggests that there are seven psychological competencies that drive performance. They keep one's focus sharp, order attention, and sustain engagement in hard work. This workshop will engage participants in strategies designed to develop three of these competencies in gifted children and youth.

SYMPOSIUM 3

Possibilities & Challenges of Digital Age for the Gifted

Time: Friday, 19 September: 10:30 a.m. – 12:40 a.m.
Location: Plečnik 1

SYM 3: Talent Development in a Digital World

Organiser: Javier Tourón, University of Navarra, Pamplona, Spain

Discussant: Mojca Juriševič, Faculty of Education, University of Ljubljana, Slovenia

Research and practice on talent development has witnessed an enormous progress in the last decades. It is much what we know; the concept of giftedness and talent has been clarified and many misconceptions apparently removed. Programs for talent development within and outside the schools have been developed and implemented with great success. Nevertheless schools and teachers seem to be anchored in the past when the prevailing conception was considering giftedness as a physical trait, or a matter of "to be or not to be", "once gifted, always gifted", etc. Schools continue using an industrial schema of knowledge transmission where the teacher is the only or the main source of information ("the sage on the stage") and where students, grouped by age and not competence, are passive receptors of oral messages they have to memorize to later on demonstrate what they have learned is a very often low cognitive level quiz. In front of this landscape in this symposium we want to demonstrate with experiences, ideas, theories and technological resources that a different school is possible, that technology can offer

us the means to not only differentiate or individualized learning but to personalize it in an adaptive process where motivation, needs, interests, strengths and weaknesses of the learners become the driving forces. If we want the talent of our youngster to flourish it is of paramount importance to put the student in the centre of the learning process and the protagonist of his/her own development.

SYM 3-1: The Flipping Classroom Learning and Talent Development

Javier Tourón¹ and Raul Santiago²

¹University of Navarra, Pamplona, Spain; ²University of La Rioja, Logroño, Spain; jturon@unav.es; raul.santiago@unirioja.es

The Flipping classroom model can be an effective instructional strategy for differentiating instruction and the development of our students' talent. In this paper we will go deeper in the concept of flipped classroom & learning, we will describe a rationale for using this strategy with gifted and talented students. In a second part we will analyse different tools and resources for developing flipped classroom projects. We will mention, on the one side, the possibility of selecting and curating contents created by other educators or colleagues, on the other, we will distinguish between three different group of tools for creating (both teachers or students themselves) our own educational content: computer programs, web 2.0 resources including authoring tools and finally, mobile devices apps. In this context, we will also insist on the importance of contextualising this model in a wider methodological framework. We will finish describing some possible problems educators might encounter, and practical tips for beginning the process of flipping the classroom.

SYM 3-2: The Perspectives of a European Talent Support Network in the Digital Era

Peter Csermely

Semmelweis University, School of Medicine, Hungary; csermelynet@gmail.com

The development of the European Talent Support Network in the digital era will provide new dimensions to open up schools and to break the barriers of classroom walls. The European Talent Support Network will be built from European Talent Centres serving as hubs of the network, coordinating and organizing regional talent support activities, as well as from European Talent Points representing local traditions (or innovations) of talent support. The "philosophy" of networking is sharing and giving, which means here sharing and giving the best practices, expertise at the highest professional level possible. Using the communication channels of the European Talent Support Network developing in the digital era talented young people will not only be able to participate in e-courses and e-projects allowing them a close cooperation with university and science research teams in European countries far apart, but they will also be able to build up their own social talent-e-network. This digital talent-network will enable young talents to find their on-line mentors, and to build up on-line communities acting as ad hoc task-forces to solve exciting projects including e.g. scientific problems. Talented people especially need these novel forms of social contacts, since their attention is often multi-focused; they are often more socially sensitive and avoid the possible humiliation of face-to-face contacts, and they often have a special schedule of daily activities

(e.g. working 3 days continuously keeping a contact with new and new people awake around the globe). Importantly, talented young people need both a stable net of trusted contacts, and they have a continuous wish for new and new surprises. Therefore, we have to design the talent-supporting social e-networks of the European Talent Support Network giving both the "strengthen me with the joy of meeting those who think likewise" and the "surprise me with a new contact option, which gives me the excitement of novelty" options. Talented young people should be taught and trained to plan their presence as a "professional e-personality" (their digital self, their web2.0 portrait or their personal e-brand). Digital presence and web2.0 networking requires excellent time-management skills. This should also be taught, as well as using the web to interact with non-peers. Educators face a dilemma when they are challenged to judge their students behavior in e-spaces. The digital gap here becomes more of a culture shock: the rules governing the communication and behaviour patterns of the z-generation cannot be understood without having experience in the use of digital platforms and networks. However, there are no "two cultures". Digital culture and the behavioural patterns characteristic of the digital world are part of our culture in general.

SYM 3-3: Does Online Learning "Work" for High Ability Students? Best Practices and Strategies for Expanding Academic Options

Patricia Wallace

Johns Hopkins University, Center for Talented Youth, Baltimore, USA; p.wallace@jhu.edu

Advanced learners in classroom settings, particularly those with very high ability in certain subject areas, may become bored and disengaged because the pace and depth of the material presented is insufficiently challenging to them. This presentation will explore opportunities and best practices for differentiating the curriculum for these students through online learning, drawing on research, theory, and extensive data on students enrolled in the CTYOnline program at the Johns Hopkins Center for Talented Youth. The program offers acceleration and enrichment courses to students from around the world in preK to grade 12, with enrollments of about 13,000 per year. Instructors lead each course, but they do not lecture in the traditional sense. Instead, they guide each student through a variety of online resources and offline labs, texts, projects, and experiments, providing feedback, counseling, encouragement, and constructive criticism. The presentation will also explore the academic and psychosocial variables that relate to positive outcomes for high ability online learners in elementary, middle, and high school, identifying students who are especially likely to adapt to and thrive in an online course.

SYM 3-4: Technology as a Personalization Tool for Students Learning

Terry Nealon

Fishtree, Dublin, Ireland; terrynealon@gmail.com

The promises for technology in driving better learning outcomes has long been just that, a promise. The technology in the most part has struggled to empower educators, engage students because it has failed to scale 1:1 instruction. How can a teacher reach out to attend to the needs of each individual student? How can a great teacher be even better by connecting with each student, understanding their unique challenges and all the while keeping to the structured curriculum. The challenge is not just to help

struggling students, it is also to engage with those children considered gifted but often neglected. These students can be left to their own devices because of their academic ability, however well performing the student is it does not mean they have met their optimal performance. Using next generation learning platforms these students can be engaged in a way that they still feel challenged, they can enjoy learning based on their unique needs, interests and through data driven collaboration techniques, these students can benefit from peer-to-peer feedback, not just in their own classroom. Overall, data driven decision making for teachers is indeed powerful, but there is a need for task automation to allow a teacher to focus on teaching, remove administration and some of the remedial and personalization tasks. The author will discuss how to scale 1:1 instruction in the modern day classroom. He will discuss how a new model for personalization – Learning Relationship Management and how a combination of Learning Management, Collaboration, Curation and Personalization will lead to new learning models meeting the needs of every student.

POSTER SESSION

Time: Friday, 19 September: 1:45 p.m. – 2:15 p.m.
Location: Foyer

See: Thursday, 18 September (Page 87)

PAPER SESSION 19: Innovations & Programmes 3

Best practice strand

Time: Friday, 19 September: 3:20 p.m. – 5:30 p.m.
Location: Plečnik 2-3

Chair: Diana Boyanova

PAP 19-1: Three Challenges, One Solution – PENTA UC Goes “Digital” For Talented Students with Low Socio-Economic Status Who Live in Rural Regions of Chile

Diana Boyanova, Patricia Morales, Paulette Laclote, Marcelo Mobarec, Macarena Escalante, Lesly Maldonado, and Pablo González
Catholic University of Chile - PENTA UC Program, Chile; dboyanova@uc.cl

It is a well-known fact that students with academic talent have specific characteristics and therefore – specific educational needs. If not satisfied, talent would be lost. This is especially true for children with low socio-economic status (those from municipal schools in Chile) who are not only more difficult to identify, but also are less likely to have the same resources as those afforded by students with higher SES. To cope with this problem, More than 13 years PENTA UC (enrichment, out-of-school program, situated at Catholic University of Chile) provides educational services for more than 900

children every year. With the goal to reach as many talented students as possible, the model of PENTA UC has been transferred to five universities in Chile. Still, in regions far from the main cities in Chile, there are talented children from municipal schools, who are not only unlikely to be identified, but most importantly do not have the physical ability to attend any of the existing programs. Recent studies demonstrated that Chile is one of five Latin America countries with more than 50% people who use internet and one of three, in which 60% of the population use internet from home. This is an optimistic trend considering that in past years, most of the people were able to use internet only in internet clubs and “cyber café-s”. Taking all these factors into account PENTA UC initiated concrete actions to design the first online platform for talented children in Chile, which is planned to provide courses in Mathematics and Languages for students from rural regions of Chile. In the proposed presentation, the challenges of the design of online courses will be discussed, along with the aspects of the identification and selection of talented students with low SES from rural areas.

PAP 19-2: Giftedness in Israel - From Policy to Implementation in the Digital Age

Pnina Zeltser
National supervisor; zpnina@hotmail.com

Policy development of the Division for Gifted and Outstanding Students in Israel to nurture gifted students in the digital age will be presented from principles to implementation. The principles guiding the policy include: (1) addressing cognitive, emotional, social and ethical aspects that are unique to gifted students; (2) developing a holistic program from preschool to 12th grade that is based on the core guidelines; (3) providing holistic nurturance in all content and skill areas, (4) regarding teaching gifted and outstanding students as a unique profession integrating research with educational practice. Examples of policy implementation will be presented including: (1) A professional development workshop with enrichment center directors and teachers, as well as with students using the “market” as an authentic learning environment providing an interdisciplinary work model. (2) Integrating digital tools in creative individual and group research projects.

PAP 19-3: Recent Development of Research on High Ability Students in China during the Last Decade

Jiannong Shi, Xiaoyan Li, and Xingli Zhang
Institute of Psychology, Chinese Academy of Sciences; University of Chinese Academy of Sciences, China; shijn@psych.ac.cn

By the year of 2013, China has 250 million children aged from 0-14 years old. Theoretically about 6 million (2.25% of 250 million) of them are intellectually gifted. It is a very important intelligence capital of the country. Unfortunately, most of them have not been properly treated in regular educational system of the country. In this presentation, some essential issues related intellectually gifted or students with high abilities followed by some special gifted programs developed during the last decade under the provision of Chinese Academy of Sciences, and the Beijing Metropolitan Educational Commission will be discussed. The accelerated program for homogenous cohort of intellectually

gifted students, enriched program with regular schooling years, and after school special program for technically talented students will be exemplified in the presentation. And the most significant development of gifted education program is a large scale project in which hundreds of students with special talents in different fields such as mathematics, physics, chemistry, biology, information science, and social science and humanities from 170 recently in Beijing.

PAP 19-4: Supporting the Implementation of Individual Education Plans for Gifted Students in Serbian Elementary Schools: Insights from a Two-Year Project

Sanja Tatic Janevski¹ and Ana Altaras Dimitrijevic²

¹Institute for the Improvement of Education, Serbia; ²University of Belgrade, Faculty of Philosophy, Department of Psychology, Serbia; aaltaras@f.bg.ac.rs

According to Serbian educational policies, gifted students qualify for individual education plans (IEPs), tailored to suit their specific educational needs. The effective use of IEPs in gifted education requires, however, that educators be skilled at identifying gifted students and differentiating instruction. These skills are not part of standard teacher education in Serbia, so IEPs remain underutilized. In this project, we sought to support schools in exploring and exploiting IEPs as an option for gifted students. Participants were school counsellors and teachers (N = 21) from 11 elementary schools in Belgrade. Over a two-year period (2012-2014) they were provided scaffolding in the implementation of IEPs for 22 students (2 from each school); this included an 8-hour seminar on giftedness, a 4-hour workshop on differentiation, and consultations with experts throughout the process. By using a qualitative methodology, including interviews and focus groups with participants, we identified several domains in which substantial improvements were made: (1) knowing the legal/administrative framework for supporting gifted students through IEPs, (2) identifying these students by using multiple sources of information and assessment techniques, (3) composing the educational profile and pinpointing the needs of a particular gifted student, (4) planning a coherent set of enrichment activities with respect to the student's strengths and interests, and (6) providing occasional but meaningful differentiation. At the same time, difficulties were observed in (1) using the school library and librarian as important resources, (2) coordinating activities involving different subjects and teachers, (3) establishing stronger connections with relevant organizations, and (4) providing continuity in curriculum compacting. Despite these challenges, it remains our conclusion that IEPs are a feasible option for educating gifted students in Serbia, provided that schools receive the necessary expert support. Particular attention should be paid to outside-the-classroom communication and resources, and practicing subject-based acceleration complemented by enrichment during regular classes.

PAPER SESSION 20: Mathematics

Best practice strand

Time: Friday, 19 September: 3:20 p.m. – 5:30 p.m.

Location: Boardroom Grafika

Chair: Kathleen Stone

PAP 20-1: Using International Testing Resources to Support Advanced Mathematics

Kathleen Stone

INSTEAD International, USA; kstonegift@aol.com

STEM subjects are manifesting increased global importance in achievement of high ability students. This presentation will provide a transnational overview of advanced mathematics achievement subgroup data embedded in the online PISA 2012 results (Age 15), and TIMSS 2011 international testing (Grades 4 & 8). The analyses will contextually and graphically represent overall rankings and comparative subsamples of countries based on geographic relationships. Comparison of countries will emphasize G8 membership, Western and Eastern Europe, and the highest ranking countries of East Asia. The transnational methodology of analyzing large scale data is a digital resource strategy that can explore advanced mathematics subgroup factors, and help identify high achievement patterns that might be applied to policy and curriculum development. Advanced Math achievement scores include Total Mean, Ranking, and subgroup data based on 90th Percentile, Gender, as well as International Benchmarks and Proficiency Levels. The TIMSS math results include important content domain subgroups in Number, Algebra, Geometry, and Data, with cognitive domain subgroups in Knowing, Applying, and Reasoning. TIMSS results will be compared with the more problem-based skill imperatives of the PISA assessment. The PISA content subscales include Change & Relationships, Space, Quantity, and Uncertainty & Data. The PISA process subscales include Formulating, Employing, and Interpreting. Results have potential to uncover content balance variance across the developmental frameworks of grades 4 and 8, and age 15, and suggest improvements to align with international standards. In this digital age of international comparisons, it is advantageous in advocating for high ability students to use the pragmatic facility of access to the rich advanced math achievement online data readily available through TIMSS and PISA. Comparisons of high achievement can provide the persuasive contextual evidence to support and justify policies and provisions that address the advanced mathematics needs of high ability students.

PAP 20-2: On the Mathematically Gifted in the 21st Century - Slovenian Viewpoint

Boštjan Kuzman

Faculty of Education, University of Ljubljana, Slovenia; Bostjan.Kuzman@pef.uni-lj.si

With thousands of years of its history, the science of mathematics represents an indispensable companion to the entire human civilization. Yet the circumstances, in which new mathematical discoveries arise nowadays, are quite different from those centuries ago, when great minds of mathematics were either members of quasi-religious philosophical groups, court scientists or isolated geniuses. It is only seemingly a contradiction that good access to education, abundance of information and relatively good standard of living in the modern world motivate young people less for abstract thinking and hard work that is required for doing mathematics. That is why we are facing a big challenge, how to encourage young talents in today's society in order to develop their abilities to their full potential while also maintaining their prudent inner child, their creativity and encourage collaborative teamwork, which is becoming indispensable also in the field of mathematics in the digital age. I will present some relatively successful examples of work with gifted in mathematics in Slovenia: school work in curricular and extracurricular activities, mathematical competitions, research projects and summer camps. I will compare the available data from international tests TIMMS and PISA to the performances of Slovenian high-school students at the international mathematical competitions, the results of research on the gifted in Slovenian schools and surveys of students with successful records in mathematical competitions.

PAP 20-3: The Social Validity of Advanced Mathematics in the Education Programs for Talented Students (EPTS)

Bilge Bal Sezerel

Anadolu University, Turkey; bilgbal@gmail.com

The purpose of this study is to investigate the social validity of EPTS's mathematics lessons. EPTS 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. Advanced mathematics covers the subjects of the areas; algebra, geometry, statistics, probability and trigonometry by using technological equipment. In the core of mathematical courses, it is expected that students connect mathematical theories with the daily life. Students learn the structure of the concepts and gain conceptual knowledge thanks to mathematics courses. What's more, students can create real life problem situations so they can transfer their experience to application area of the mathematics. One of the methods for the investigation of the course's viability is the social validity evaluations. In this study the participants included 141 sixth, seventh and eighth grade students who had attended the EPTS from the year of 2008 to 2013. EPTS Course Evaluation Form was administered to investigate the social validity of the advanced mathematics course in this program. The EPTS Course Evaluation Form is consisted of two structured items which are related to likeness and usefulness and ranging from 1 (not at all) to 5 (very very much) and three semi-structured items. In order to investigate the social validity of advanced mathematics courses, one sample t-test analysis was used to test the mean score of each item in the scale against

the criteria "3" (a little). Findings showed that mean scores of all of the items were higher than the criteria with all of the differences being statistically significant at .05 level. Analysis of the semi structured items showed that students like most the mathematics course in the computer lab. Based on the students' evaluation, it is concluded that the EPTS has a very social validity.

PAPER SESSION 21: Acceleration

Best practice strand

Time: Friday, 19 September: 3:20 p.m. – 5:30 p.m.

Location: Plečnik 4

Chair: Jo Verlinden

PAP 21-1: Acceleration without Thresholds

Jo Verlinden¹, Lianne Hoogeveen², Bert Oostindie³, Nienke Bouwman³, and Marloes Ottink³
¹BCO Onderwijsadvies, The Netherlands; ²Radboud University, Center for the Study of Giftedness, Nijmegen, The Netherlands; ³Usselgroep Zwolle, The Netherlands;
joerlinden@bco-onderwijsadvies.nl; l.hoogeveen@its.ru.nl

In the 21st century we need all the talent we have. We cannot afford underachievement due to poor education. There is an overwhelming amount of scientific support for acceleration as a positive intentional educational intervention for gifted children. The type of acceleration we focus on is skipping grades.

Project: The project's main goal is providing resources for school counsellors and teachers in order to encourage them to considerate acceleration as an option for gifted students at an early stage. Research shows that accelerated children perform better than their not accelerated counterparts. Moreover, the dreaded negative social and emotional consequences do not occur (Colangelo, 2004; Hoogeveen, 2008). There are indications that accelerating excellent pupils leads to better results than other measures such as compacting and enrichment of the curriculum. However, both teachers and counsellors hesitate in making decisions about skipping a grade, or acceleration in other ways. Probably they are far too reluctant. There is evidence that, providing teachers and counsellors with the right information, will help schools to design a good decision-making process.

Presentation: In this presentation we will elaborate on our project regarding acceleration in Dutch schools. We will discuss an updated instrument for decision-making. This tool provides users with an analysis of the major factors to be considered in making the decision to accelerate or not. The instrument is based on the "Versnellingswenselijkheid-slijst" (Hoogeveen et al., 2004) and the The Iowa Acceleration Scale, 3rd Edition (Assouline et al., 2009). As a part of this project we also provide school counsellors with an up-to-date information package, which they can use to organize a workshop for teachers and parents. The package explains the pros and cons of acceleration. In our presentation we give evidence of the development of both the instrument and the workshop.

PAP 21-2: Long-term Effects of Acceleration – and How to Use Networks for it Today

Annette Heinbokel

DGhK, Germany; annette.heinbokel@swbmail.de

Grade skipping can have a profound effect on the lives of those who were accelerated. In 2012 adults Germany in were asked what they remembered, how their experiences had influenced their lives and that of their children. The adults were born between 1917 and 1987. There are answers from 115 adults, for 26 of them their parents had already filled in a questionnaire in 1990. Among these there are 8, who had also given an interview while still at school. Results in brief: For more than 80% it had had a beneficial effect, they would do it again or support their children if they needed this kind of challenge. This confirms John Hattie's study of meta analyses': acceleration was more than twice as effective as enrichment. But how about those whose experiences had not so been positive? Can traps be avoided? When most of these adults skipped one or more grades, the digital age had not yet been "invented". They had to use the help of adults, books and libraries to catch up with the knowledge they needed for the higher grades. Today it is much easier: websites, the internet, emails can help gifted children in many ways, especially when they want to accelerate or have done it. The internet can be used (1) for learning, not only to acquire new knowledge out of curiosity but to learn material needed for acceleration; (2) for contact for young people with similar experiences of acceleration; (3) by parents whose children were accelerated or who are planning to do so; (4) by educators who are interested in offering acceleration. A European "Network Acceleration" would be a good idea to teach educators when to offer and how to handle acceleration.

PAP 21-3: Predictors of Teachers' Attitudes towards Acceleration of Gifted Students

Paloma Palacios Gonzalez

University of New South Whales, Australia; palpalgon@hotmail.com

In the last decades there has been special interest in studying the attitudes of regular teachers towards gifted education and gifted students. It is well known that teachers make a difference, and that their attitudes and perceptions have an effect on the students' performance. While much has been researched about teachers' attitudes on gifted students and gifted education, there is a lack of understanding of teachers' attitudes towards acceleration as an educational practice for gifted students. The special interest of studying acceleration is that it has been considered as one of the most effective interventions for gifted students. Meta-analytic results have shown acceleration of gifted students has predominately positive effects in both the cognitive and affective domains of these students. Surprisingly, teachers have been persistent and doubtful about whether this is the best option for gifted students and schools have been resistant to provide more flexibility in order to fulfil the educational needs of gifted students. The main purpose of this study is to understand the predictors of teacher attitudes, in Mexico, on acceleration of gifted students, using a number of variables, including cultural variables. A mixed methods approach is used in this study. Surveys will be developed and administered to elementary public school teachers in Mexico. Data will be analysed using

quantitative and qualitative techniques. Policy makers, psychologists, educators and families may use the findings of the investigation to assist gifted students whose needs are not met by the regular curriculum. This investigation may contribute to gaining a fuller understanding of teachers' attitudes towards acceleration and to find ways to enhance positive attitudes towards accelerative practices.

PAP 21-4: Mentoring Gifted Students in the Digital Age: A Unique School / University Partnership in Academic Research Projects

Susan Knopfelmacher

Presbyterian Ladies College, Melbourne, Australia; sknopfelmacher@plc.vic.edu.au

Research and experience show that secondary schools in the "Digital Age" 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 (14-17 years). A developmental approach underpins the program, based on models and theories including Gagne's DMGT 2.0, the Actiotope Model, "new literacies" and the IB Learner Profile. The presentation will outline digital learning approaches, resources and tools which empower cutting-edge, innovative research, through face to face and online communication with experts and peer group collaboration allied 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. Evidence of participating students' personal testimony, significant personal growth and outstanding academic success will be related to the program's opportunities and outcomes. This presentation details various humanities, sciences and arts gifted mentoring projects.

PAPER SESSION 22: Teachers

Scientific strand

Time: Friday, 19 September: 3:20 p.m. – 5:30 p.m.
Location: Ravnikar Hall

Chair: Matthew Edinger

PAP 22-1: Professional Development in the Digital Age: Building and Testing an Online Model for Gifted Education Teachers

Matthew Edinger

The University of Derby, UK; m.edinger@derby.ac.uk

Researchers have called for further investigation into appropriate professional development (PD) for gifted education teachers. In the current digital age, PD often takes place in an online environment. While many researchers have suggested approaches to e-learning and online PD, few have considered these issues in the context of gifted education. Thus, in this paper I develop and test a theoretical model of online PD for gifted education teachers. This work builds upon Anderson's (2008) theory of online learning interactions and Siegle's (2001) essay regarding professional development for gifted education teachers. Fundamentally, the paper asks: To what extent does the implementation of the proposed model create positive change in five areas of inquiry: content learning, classroom practice, professional goals, teaching attitude, and pedagogical knowledge? Over a 5 year period 161 gifted education teachers completed graduate-level online PD. This PD was designed using the model proposed in this paper. All teachers were asked to complete an online self-report survey concerning this PD experience. The response rate was 66% (N = 107). Findings from this study indicate a strong positive change in all of the five areas of inquiry mentioned above. The most significant changes occurred in the participant's gifted education content learning and their classroom practice. For example, a third of the participants indicated that they now develop lessons geared specifically toward their gifted students. Additionally, two-thirds of participants reported a strong positive change in their overall understanding of gifted education. The results of this study offer significant implications for directors of professional development and practitioners within the field of gifted education.

PAP 22-2: Attitudes Towards Giftedness and Gifted Education in the Slovenian Educational Context

Mojca Jurišević, Janez Vogrinc, and Darija Skubic

Faculty of Education, University of Ljubljana, Slovenia; mojca.jurisevic@pef.uni-lj.si; janez.vogrinc@pef.uni-lj.si

Research evidence shows that successful implementation of any inclusive policy in everyday teaching is largely dependent on teachers being positive about it. In gifted education, where so called love – hate relation has persisted for decades, the identification, understanding and perhaps changing the attitudes of teachers represents a very important endeavour to introduce the curricular and instructional changes which are necessary

to optimally challenge and stimulate gifted students in the particular educational context. The aim of the research was therefore to explore attitudes of preschool, primary and secondary school teachers towards giftedness and gifted education in the Slovenian educational context. The research was based on nationally representative sample. As a main research instrument the Opinions about the gifted and their education questionnaire from Gagné and Nadeau was used. The multivariate analysis of data shows that the Slovenian educational context holds relatively positive attitudes towards giftedness and gifted education, and that the positive orientation in attitudes is related to teachers' education and professional experiences. In the presentation the research findings will be stressed from the view point of several potential predictors of teachers' attitudes towards giftedness and gifted education in kindergarten, primary and secondary school and the implications for bridging the gap between teachers' attitudes and implementations of appropriate methods in teaching gifted students will be discussed.

PAP 22-3: Language Teachers' Cognition in Gifted Education

Karmen Pižorn and Mojca Jurišević

Faculty of Education, University of Ljubljana, Slovenia; karmen.pizorn@pef.uni-lj.si

In Slovenia, language teacher study programmes still fail to provide the appropriate academic and practical input on teaching languages to gifted students. This is further supported by the fact that there are no methodologically rigorous research studies which would measure language aptitude or investigate learning and teaching languages to the gifted. Finally, the national primary school guidelines on the gifted education do not recognize language aptitude, even though the research shows that childhood is the most important period for (foreign) language development. In accordance with the current situation, the main aim of the presentation is to show and discuss the teachers' cognition (i.e. attitudes) and their perceived professional competence in identifying and educating gifted students. The research findings are derived from the broader national survey on gifted education in Slovenia. The emphasis is on different psychological and curricular elements which are stressed for the relevance from the teachers' point of view. Moreover, the research focus is oriented towards the comparison between the language and STEM teachers to find out similarities, as well as differences in their cognition toward identifying gifted students.

PAP 22-4: Students' Attitudes Toward Education Of Gifted And Their Competences As Future Teachers: Is There an Implication for Study Program Modification?

Sanja Tatalović Vorkapić and Jasna Arrigoni

Department of Teacher Education, University of Rijeka, Croatia; arrigoni@ufri.hr

One of the extremely important prerequisite for organizing a quality educational system for gifted children presents also well trained teachers. Therefore, the general question raised from this starting point is what could be done to develop appropriate competences of teachers, primarily through initial teacher education at the undergraduate level of higher education. So, the main aim of this paper is to examine the attitudes toward gifted children and their education from the perspective of students enrolled at Faculty of Teacher Education in Rijeka, Croatia. Students of both study programs will be included

in the research: Early and Preschool Care and Education and Primary School Teachers Study. In addition, their attitudes toward the usefulness and application of the course "Education of gifted children" will be examined. Finally, since this course is elective and some students do not have the opportunity to hear relevant lectures, the comparison in general attitudes toward education of gifted children between different students' groups will be explored. The determined results will be discussed within the frame of needed teachers' competences, possible attitudes change and study program modifications.

PAP 22-5: Primary School Teacher's Perceptions on the Gifted Students' Characteristics in Class

Aikaterini Gari¹, Afroditi Karfi², Anastasia Theodorou², and Maria Tsonopoulou²
¹Associate Professor of Social Psychology; ²Psychologist; agari@psych.uoa.gr

The aim of the present study is the exploration of teachers' perceptions towards the gifted students' characteristics in an effort to describe how teachers who have not trained on giftedness perceive the specific characteristics of the gifted students in class. A sample of 206 primary school teachers was employed, 163 females (81.91%) and 36 males, with a mean age of 42.2 years (SD = 9.97 years) and a mean teaching experience of 17.4 years (SD = 8.3 years). 18.45% of the sample has had a postgraduate diploma in special education or in various domains of pedagogy and psychology. The majority of them (70.4%) lived in Athens and 29.6% lived in other Greek cities and towns. The questionnaire created for the purpose of this study was based on some of the Renzulli's (Renzulli et al., 2002) "Scales for Rating the Behavioral Characteristics of Superior Students" (SRBCSS-R) of 43 items, in respect to "learning" (13 items), "creativity" (11 items), "leadership" (8 items) and "motivation" characteristics (11 items), along with some demographic questions. After a short introduction on giftedness presented for the teachers of the sample at each school separately, the teachers were asked to fill in the questionnaire anonymously, "keeping in their mind a student they believe he/she is gifted". We computed the Cronbach α for each set of items, as following: $\alpha=.89$ for learning items, $\alpha=.80$ for creativity items, $\alpha=.78$ for leadership items, and $\alpha=.85$ for motivation. No statistical differences were found for the 4 sets of items in respect to teachers' gender, age and teaching experience. Statistically significant differences were found in regard to place of residence for creativity ($p < .05$, $\eta^2 = .03$) and learning characteristics ($p < .05$, $\eta^2 = .03$), and also statistically significant interaction between gender and place of residence for learning characteristics ($p < .05$, $\eta^2 = .064$). The results are discussed in relation to specific legislative aspects of the Greek educational system and Greek teachers' needs for training on giftedness along with the scientific activities of the Greek Association for the Promotion of Creative/Gifted/Talented Children and Adolescents.

PAPER SESSION 23: Neuro-Cognitive

Scientific strand

Time: Friday, 19 September: 3:20 p.m. – 5:30 p.m.
Location: Plečnik 5

Chair: Pichak Siripoonsap

PAP 23-1: Explaining the Gifted Mind

Pichak Siripoonsap and Ngarmmars Kasemset
Thailand - The Gifted and Talented Foundation, Thailand; pichak@nationalgiftedthai.org;
ngarmmars@nationalgiftedthai.org

In the digital age, it is possible to explain how gifted minds work using the analogy of computer hardware and software concepts. There are many mind functions or "mind apps". And gifted persons have a lot of high abilities and various kinds of behaviour. These are synchronously linked to their mind apps. It is a simple approach to introduce these concepts to talented youth and children. Understanding their mind apps and knowing how to manage them will enable gifted children to lead a happy and bright life.

PAP 23-2: Managing High Abilities from Neuroeducation. What Differentiates some People from Others when Their Brain Works

Juan Jose Rienda, Elisa Villena, and Lucía Sutil
Universidad Rey Juan Carlos, Spain; juanjose.rienda@urjc.es

The irruption of the Neuroscience in the 21st century society has meant a radical change in the conceptualization of diverse aspects. Words like Neuromarketing, Neuropolitics, Neuroleadership, Neuromanagement... are important in the scientific fields and researching at present. Also today we can talk about Neuroeducation, or how to give a new vision on High Abilities from a brain-based teaching way. One of the so-called myths that exist around the learning in the classroom is based on that the human being has predominance in one of the lobes of the brain. The right lobe, associated with creativity, is the brain holistic; while the left lobe is associated with the rational, logical part and the language. Some authors discuss that this predominance is a myth in the field of neuroscience, while others claim that part of the scholastic failure may be attributable to a deficiency in the form in which the contents in the classrooms are taught, not considering the difference of the cerebral dominance of learning. This article tries to throw evidence about whether gifted students have any predominance of brain against certain groups of control, considering gender and IQ variables. Furthermore, using techniques of imaging, including magnetic resonance imaging and scanner, we will intend to develop a map of brain activity at the same time students are dealing with traditional measurement of intelligence tests, establishing what brain areas are activated when solving different sorts of problems, against students who are not evaluated in high ability. This study aims to be a supplement of diagnosis to traditional IQ, concerning this type of population assessment.

PAP 23-3: Differences in Brain Activity during the Visuospatial Working Memory Task: An FMRI Study in Mathematically and Scientifically Talented Students with and Without High IQ

Ching-Chih Kuo¹, Jun-ren Lee², Shou-ying Tsai², and Chia-en Hsieh²

¹National Taiwan Normal University, Taiwan; ²Department of Special Education, National Taiwan Normal University, Taiwan; kaykuo@ntnu.edu.tw

This study compared the visuospatial working memory performance in mathematical and scientifically talented (MST) students with and without high IQ using functional magnetic resonance imaging (fMRI). Forty-five male university students, aged 19 to 24 were assigned to three groups according to the IQ level and a talent in mathematics and science. Such assignment yield the high-IQ MST (MSTHIQ, N = 17), average-IQ (MSTAIQ, N = 13), and typically developing groups (TD, N = 15). Participants completed a non-verbal working memory n-back task with three memory load condition (0-, 1-, and 2-back) during whole-brain fMRI. The behavioural performance among these three groups was very similar to each other with high levels of accuracy and resulted in no significant group difference. We hypothesized that the MSTHIQ group demonstrate more activation during this n-back task. As predicted, when comparing the brain activation between easy task (0-back and 1-back) and more difficult task (2-back), the MSTHIQ group showed higher activation than the MSTAIQ group in many brain areas, including bilateral superior frontal gyrus, medial frontal gyrus (BA6), inferior parietal lobule, superamarginal (BA40), and superior temporal gyrus (BA39). The MSTAIQ group, on the other hand, exhibited more activation in the left precuneus (BA7), left superior frontal gyrus (BA6), and right inferior parietal lobule, angular (BA40). The TD students showed more activation in the right middle frontal gyrus (BA6), right occipital lobe, lingual gyrus (BA18), right occipital lobe, cuneus (BA18), and left inferior parietal lobule (BA40). The results support previous research and indicate that the MSTHIQ group exhibits more brain activation during memory-related and higher cognitive load tasks and larger visuospatial working memory capacities.

PAP 23-4: Visual Search Development among 9-13 Years Old Supernormal Children

Xingli Zhang¹, Xiaoyan Li², and Jiannong Shi³

¹Institute of Psychology, Chinese Academy of Sciences, China; ²University of Chinese Academy of Sciences, China; ³Department of Learning and Philosophy, Aalborg University, China; shijn@psych.ac.cn

The current study aimed to compare the visual search development between intellectually supernormal (gifted and talented) and normal children. 124 children aged 9-13 years old participated in the visual search experiment, 68 supernormal and 56 normal children respectively. The standard visual search paradigm was used and participants' reaction time (RT) was recorded through the DMDX system. Search RTs underwent analyses of variance (ANOVAs) with age group and IQ group as between-subjects factors, the features and the set size as within-subject variables. The result showed that supernormal children performed more quickly than that of normal children, the reaction time (RT) also showed expected improvement in speed of information processing with their age

increasing among both groups. Moreover, both the supernormal and normal groups displayed similar patterns in searching colour features (in parallel processing) and conjunctions (in serial processing).

PAPER SESSION 24: Models & Concepts

Scientific strand

Time: Friday, 19 September: 3:20 p.m. – 5:30 p.m.

Location: Boardroom Risba

Chair: Sieglinde Weyringer

PAP 24-1: Traditional Models of Giftedness and High Ability - are They Still Up To Date and Viable?

Sieglinde Weyringer

University of Salzburg, Austria; sieglinde.weyringer@sbg.ac.at

During its long tradition the research on giftedness and high ability has created many definitions and theoretical models. Primarily these definitions and models are based on psychological constructs to be measured with psychometric assessment tools, e.g. intelligence and IQ-tests or cognitive abilities and achievement-tests. Some of the models became most influential on educational practice, and in many national educational systems the established best practice models are referring to these sources. The presentation will attempt a critical review on this practice. Several aspects for investigations can be highlighted: (a) the appropriateness of the traditional models with respect to the development of research, to the development of technology and to the change of society; (b) the importance and relevance of other fields of social sciences despite psychology concerning theories of giftedness, talent and abilities; (c) the appropriateness of psychological constructs for the educational practice within and outside school systems and with respect to lifelong learning and development; (d) the usability of definitions and the applicability of theoretical models beyond cultural, ethnical and societal diversity. Transferring the results of these investigations to selected models of giftedness, talent and high ability the presentation will analyse their potential to improve these models.

PAP 24-2: Does the Development of Prodigies' Psychosocial Skills Differ from that of their Conservatory Peers?

Rena Subotnik¹ and Linda Jarvin²

¹American Psychological Association, USA; ²Paris College of Art, France; rsubotnik@apa.org

This session will explore the role of psychosocial skills in developing prodigious musical performers beyond technical and interpretative expertise. It builds on the SP/A (Scholarly Productivity/Artistry) model proposed by Subotnik and Jarvin (Jarvin & Subotnik, in press; Jarvin & Subotnik, 2010; Subotnik & Jarvin, 2005; Subotnik, Jarvin, Moga, & Sternberg, 2003) to describe the talent development process of elite performers that emerged from interviews conducted with students, faculty and gatekeepers at three highly

competitive U.S. music conservatories. The model posits music talent development in three stages: (1) abilities to competencies, (2) competencies to expertise, and (3) expertise to scholarly productivity/artistry. First we will describe the SP/A model and discuss it in light of talent development models supported in the psychosocial science literature. Then we investigate how it might apply – or not – to very young performers of classical music. We refer to Ruthsatz and Detterman's (2003, p. 509) definition "Prodigies are children under 10 years of age who perform culturally relevant tasks at a level that is rare even among highly trained professionals." Do these very young gifted individuals follow similar developmental trajectories as the regular conservatory students who served as the basis for developing the SP/A model? Or is there a different model for prodigies?

PAP 24-3: Identifying Highly Gifted Children by Analyzing Human Figure Drawings

Sven Mathijssen¹, Max Feltzer², and Lianne Hoogeveen¹

¹Center for the Study of Giftedness, Radboud University Nijmegen, the Netherlands; ²Tilburg University, The Netherlands; s.mathijssen@its.ru.nl

To this day, very young (preschool) highly gifted children are still hard to detect through currently available psychodiagnostic instruments. If children are assessed on intelligence, highly gifted children may still go undetected and/or may become misdiagnosed, because they achieve below their true capacities. Test anxiety is just one of the many known causes for underachieving. However, when a child is asked to draw a person, the child is asked to do something he or she has done many times and is therefore often not threatened by this task. In a pilot study, the human figure drawings of highly gifted children and averagely gifted children are examined. The goal of the study is to determine the possibility of identifying highly gifted children by analysing their human figure drawings. The participants are 157 children in the age of 7 to 12 years old. The human figure drawings are examined, using Koppitz' Human Figure Drawing Test (HFDT) and the Goodenough-Harris Drawing Test (GHDT). The scores resulting from using these instruments are referred to as "drawing-IQ's". The pilot study shows that highly gifted children score significantly higher drawing-IQ's than averagely gifted children, but only in the age of 7 to 10 years old and only when using the GHDT. In a follow-up study, the human figure drawings of 120 highly gifted and averagely gifted children in the age of 7 to 9 years old are examined, using the GHDT and Naglieri's Draw-a-Person Test (DAPT). None of the used instruments show significant differences in drawing-IQ's. However, closer examination shows that some of the elements in the human figure drawings are only drawn by highly gifted children. These findings suggest that analysing human figure drawings on elemental level may be more helpful in identifying highly gifted children than computing drawing-IQ's.

WORKSHOP SESSION 4

Trends in Research and Theory of Giftedness

Time: Friday, 19 September: 3:20 p.m. – 4:20 p.m.

Location: Martin Krpan Hall

WOR 7: Products in the Digital Age: An Authentic Challenge for Gifted Students

Tracy Inman¹ and Julia Roberts²

¹The Center for Gifted Studies at Western Kentucky University, USA; ²Western Kentucky University, USA; tracy.inman@wku.edu; julia.roberts@wku.edu

How can you engage students in high-level learning where they think creatively and critically? How can you incorporate 21st skill building in lessons? How can you provide challenge for gifted students? One powerful way is engaging in product development and differentiating those products to match students' needs, interests, and abilities. In this digital age, students have a wealth of information at their fingertips; they also have incredible technological tools to package that information. What educators must ensure, however, is that students are able to translate their learning in meaningful, high quality ways. One way to encourage authentic assessment of real-world products is to use a protocol that ensures ease, consistency, and clarity. Developing and Assessing Product (DAP) Tools guide students in product development, facilitate differentiation, simplify assessment, and remove the learning ceiling. With consistent components, an innovative scale, and varying tiers with levels of expectation based on preassessment, the DAP Tool provides one strategy to promote high-level learning. In preparing students for jobs that do not yet exist in a competitive world, 21st century skills prove as important as specific content. Intentional product development taps into those skills – from thinking creatively to communicating clearly, creating media to self-directing learning. When educators use a protocol for assessment that holds children, youth, and young adults to high standards while encouraging creativity and metacognition, those skills are developed so that, as working adults, they are able to contribute products of excellence to their communities and to the world. This session explores four innovations for product assessment; through discussion and samples of DAP Tools and student work, participants will be able to describe common components of all products; explain the need to differentiate when assessing products; and develop original DAP Tools.

SYMPOSIUM 4

Trends in Research and Theory of Giftedness

Time: Friday, 19 September: 3:20 p.m. – 5:30 p.m.

Location: Plečnik 1

SYM 4: Access Granted: Multinational Approaches to Finding and Developing Talent

Organiser & Discussant: Simeon Brodsky, Johns Hopkins University Center for Talented Youth (CTY), USA

The last decade has brought good news for academically talented students: educational programs and resources, both online and in-person, are growing tremendously. But at the same time that we champion these initiatives, we know that they do not reach everyone who needs them. Students from low-income families, students from underrepresented groups, and twice exceptional students deserve full access not only to strong educational programs in specific disciplines but also to those programs' inherent benefits - true intellectual peers, adult role models, and academic habits of mind. This symposium focuses on access and on efforts to make high quality, challenging, and inspiring education available to the world's most talented students.

First, Dr. Linda Brody from the Johns Hopkins University Center for Talented Youth, examines CTY's efforts over the past 35 years to expand access for underrepresented, low-income, and twice exceptional students. Dr. Colm O'Reilly, Director of CTY Ireland at Dublin City University, discusses CTY's efforts at skills reinforcement and deepening connections between the university, CTYI, and marginalized populations. Mr. Antonios Apostolou, Director of the newly launched CTY Greece at Anatolia College, examines the challenges of launching a foundation-supported, nationwide talent search in a political setting that is both in flux and not entirely supportive of finding and developing academic talent. Finally, Zhamilya Yessanova, Director of Centre for Pedagogical Measurements, and Miras Baimyrza, Project Manager, from the Nazarbayev Intellectual Schools in Kazakhstan shares lessons learned while launching twenty trilingual schools for the country's most promising young mathematicians and scientists. Collectively, these speakers come from organizations that provide programs to tens of thousands of students. Moreover, they represent a range of models for both uncovering top talent in previously overlooked areas and providing support - economic and programmatic - to help truly level the playing field.

SYM 4-1: Opening Opportunities for Underrepresented Students: a View from the US

Linda Brody

Johns Hopkins University Center for Talented Youth, USA; lbrody@jhu.edu

The Center for Talented Youth (CTY) was established in 1979 at the Johns Hopkins University to find and serve high ability students. Today, over 40,000 students participate annually in CTY's talent searches, 10,000 students enroll in CTY's academic summer program, another 10,000 students take courses through CTY's online offerings, and still

more students avail themselves of other opportunities. As CTY has grown in size and breadth of services, we have also worked increasingly hard to identify talented students who might be overlooked in traditional testing approaches: students from traditionally underserved populations, especially high ability students from underrepresented minority groups, low-income gifted students, and twice-exceptional students whose high abilities may go unrecognized because of their disabilities. We have now developed numerous strategies to identify students from these populations as well as special programs to meet their needs. In this session, we summarize the challenges we've encountered through CTY's efforts to find and serve traditionally underrepresented gifted students, as well as some solutions to these challenges. In particular, we describe the following CTY initiatives: 1) special outreach efforts to identify traditionally underserved gifted students from urban areas, 2) special outreach efforts to identify low-income gifted students from rural communities, 3) scholarship support for low-income students to attend CTY programs and special support for them at CTY program sites, 4) testing and programmatic accommodations for students with disabilities, 5) supplemental programs to provide skills reinforcement for at-risk students, and 6) special counselling initiatives for low-income students and/or those from traditionally underserved backgrounds. We will offer a summary of what we have learned from these programs, challenges that remain, and our recommendations.

SYM 4-2: Building a Path to Potential: CTY Ireland

Colm O'Reilly

CTY, Ireland; colm.oreilly@dcu.ie

CTY Ireland is a successful application of the CTY model in a European context. Based at Dublin City University (DCU) the programme offers college like courses to high ability students aged 6 to 16. For the last 20 years CTY Ireland has expanded rapidly and to date over 50,000 students have attended this programme including 5,000 students in the last academic year. Even with the great success of the programme we believed that we were still underrepresented by students from lower income backgrounds on the course. In 2006 with the help of the DCU Access service The Centre for Academic Achievement (CAA) programme was founded to allow primary school students from socio-economically disadvantaged areas of Dublin to attend special after school classes at Dublin City University. The goal was to encourage high ability students who traditionally would not have access to university resources and materials towards an academic path and to fulfill their potential. The programme has been a great success, with over 1,600 students attending courses at the CAA programme, including 400 students during the current academic year. In the last three years the CAA programme has been further expanded to incorporate the low income students on to the main CTY programme. To date 300 students have availed of this opportunity. The programme has been the subject of two doctoral research thesis and findings have included an increase in the number of students hoping to attending university in the future and a boost in self-confidence for the participants. This paper will describe setting up the programme and outline the benefits for the participants and the challenges moving forward to expand the initiative.

SYM 4-3: Providing Hope in Greece: a Foundation-supported Effort to Find and Develop Talent

Antonios Apostolou

CTY Greece at Anatolia College, Greece; danaos@anatolia.edu.gr

In 2012, in response to the economic collapse in Greece, the Stavros Niarchos Foundation decided to invest in education and, more specifically, to invest in identifying and developing the brightest young minds amongst Greek pre-university students. The Foundation entered into the project in an environment where most groups were curtailing their funding and amidst a politically unstable and highly charged situation. Against this backdrop of anxiety and growing governmental mistrust, the Foundation was particularly sensitive to charges of favoritism, of perpetuating pre-existing privileged positions that had helped lead to the collapse, and to charges of elitism. Therefore, from the launch, the project to establish a CTY Greece necessitated a robust effort to ensure fairness and transparency in the selection process and a concentrated drive to find students from not only the elite schools in places like Athens and Thessaloniki but also students from the most poorly-resourced governmental schools in the more remote areas of the country. This presentation examines the challenges of launching a nationwide talent search in shifting political environment and shares the lessons learned during the false starts of working through governmental channels. More importantly, this presentation is a story of grassroots efforts using both non-governmental and local connections to build an effective awareness campaign, to launch a nationwide talent search, and to identify students from Athens to Thessaloniki and Sofades to Rhodes. The talk further discusses the programmatic opportunities and issues of bringing together students from urban and rural settings and from the most elite private schools and most humble governmental schools in a highly stratified country.

SYM 4-4: A National Response to Talent Development: Nazarbayev Intellectual Schools, Kazakhstan

Leila Nurakayeva¹ and Miras Baimyrza²

¹Deputy Director of Center for Pedagogical Measurements, AEO Nazarbayev Intellectual Schools, Republic of Kazakhstan; ²Project manager of Center for Pedagogical Measurements, AEO Nazarbayev Intellectual Schools, Republic of Kazakhstan;

leila_nurakaeva@mail.ru; baimyrza_m@nis.edu.kz

In 2008, President of the Republic of Kazakhstan Nursultan Nazarbayev initiated the reform of Kazakhstani secondary education. Nazarbayev Intellectual Schools (NIS) project was established as a government-supported, autonomous educational organisation set to build and support the network of twenty high-performing schools dedicated to nurturing and developing high-quality, competitive secondary schools in Kazakhstan. The main vision is to invest in Kazakhstan's capacity to sustain its development trajectory. Every Nazarbayev Intellectual school is tri-lingual (Kazakh, Russian, and English) and focuses on mathematics and science, specifically in two main streams: mathematics/physics and chemistry/biology. These experimental schools are open to every student in Kazakhstan; some have boarding facilities for students from rural areas. Most schools start at grade seven, though some of the schools start at an even younger age. To find qualified children from across the country, the school network moves far beyond the

major cities like Almaty and Astana to remote regions of Kazakhstan. Students are chosen based on academic achievement as well as academic ability. Selection has been an evolving process that has consistently placed a high premium on openness and transparency. This presentation offers an overview of Nazarbayev Intellectual schools' mission and pays particular attention to the issues of accessibility by focusing on issues of selection, site location, and teacher training. It further examines the challenges of multiple international partnerships and the importance of not just adopting but also adapting the best practice to fit the educational needs and cultural contexts. Lastly, we discuss the aspects of transferring the experience of Nazarbayev Intellectual schools to the mainstream schools of Kazakhstan.

PAPER SESSION 25: Supporting Programmes

Best practice strand

Time: Friday, 19 September: 5:30 p.m. – 7:00 p.m.

Location: Plečnik 1

Chair: Jaap Verouden

PAP 25-1: Day a Week School

Jaap Verouden

Het ABC, The Netherlands; jverouden@hetabc.nl

Gifted children learn differently compared to their peers in several ways. However, their educational needs are often not met in regular schools, which may result in underachievement and social-emotional and behavioural problems. A pull-out program, the "Day a Week School" (DWS), was offered to gifted children in 25 elementary schools from neighbourhoods of higher and lower SES in Amsterdam. Objective To investigate whether DWS decreases children's social-emotional and behaviour problems and parents' stress, and improves children's self-concept, enjoyment at school, and academic achievement. Methods Gifted children (grades 3–5) were selected through a standardized identification procedure assessing "out-of-the box", logical, and creative thinking and motivation (n = 89). Children, as well as both their parents and teachers, completed questionnaires before the start of DWS and after 2,5 months. Results were analysed for all children and for at-risk children with higher levels of psychopathology before starting DWS. Results Analyses on the total group showed small positive effects on children's self-reported self-concept dimensions, scholastic competence and behavioural conduct, as well as on fathers' reported child prosocial behaviour. In the at-risk group, children reported medium positive effects on scholastic competence and behavioural conduct, and on sleep problems and worry, and small improvements on enjoyment at school. Parents of at-risk children reported decreased child's somatic complaints and decreased social-emotional and behavioural problems. Finally, the teachers of the regular schools reported higher academic achievement and medium positive effects on inattention-hyperactivity in the at-risk group. Conclusions Day a Week School appears to be a promising pull-out program for gifted children, particularly for children at-risk for psychopathology.

Considering the short period that the children participated in the DWS program during this research, it is likely to say that particularly the special attention, the recognition and the interactions with the peer group are the most important factors in the positive effects of this program on the participants, especially the at-risk group. Further research is necessary to get a better view on the key factors in the positive effects of a pull-out program like DWS for gifted children.

PAP 25-2: Lessons Learned from 12 yrs Supporting Gifted Drop-Outs Climb Back in - Attitudes for Approaching the Wounded to Retrieve Their Love for Living in the Digital Age

Chantal Woltring and Albert Kaput

Centre for Creative Learning, The Netherlands; chantal.woltring@creatiefleren.nl, albert.kaput@creatiefleren.nl

The digital age makes it even more important than ever for a gifted person to “know thy self”: to have a solid sense of who you are, and what you want. So as to be able to both harvest the opportunities of the digital age, and also harness oneself against its risks. High-potential drop outs, who no longer function in school, receive care, education and accommodation at the Centre for Creative Learning in The Netherlands since 2001. Our children/adolescents (12-23) are high-potentials who experienced long standing mismatches with their environments: often having changed schools 3 or more times and seen several health care professionals. Almost all children who come to our mental health care institute suffered additionally from prior misdiagnoses by the regular health care profession. The labels they carry, often contain: autism, AD(H)D, dyslexia, ODD, PDD-NOS and NLD. Giftedness often has not been taken into account during these diagnoses. From first contact in the intake interview, we create an atmosphere of equality, trust and rest. Children open up and tell us more than they did to their - surprised - parents. Their development, potential, ambitions and perspective on their lives are the subjects. Our psychologists succeed in re-diagnosing our children in ways that fit them better (identity problems, social phobia, PTSD, study problems, depressive disorder). There is a place for everyone under the rainbow. CCL exists for those gifted children, who lost this belief and helps them reclaim their place in this world. We hope to inspire the use of our more client-centred approach, versus traditional approaches that make our gifted children feel not-understood, misjudged or angry.

PAP 25-3: Achievings with Underachievers

Mariska Poelman¹ and Anneke Craanen²

¹Center for the study of Giftedness, Radboud University, The Netherlands; ²Radboud University, The Netherlands; m.poelman@its.ru.nl

Over 80 Dutch high schools participate in the Group screening by the Center for the Study of Giftedness, Radboud University Nijmegen. Every year large numbers of underachievers are detected. It proves to be difficult for schools to set up adequate programs to support these underachievers in transforming their potential into high(er) school performance. Supervised by Mariska Poelman, a combined qualitative and quantitative research assignment is undertaken by Anneke Craanen, to investigate the effects of guidance programs in two groups: the absolute underachievers and the relative underachievers.

In this presentation the results are shared of the guidance program we have developed to support underachievers in secondary school to develop their potential into high(er) achievements. As the underachieving pupils suffer from helpless feelings, lack of self-discipline, etc. several aspects are taken into account, like: mindset, meta-cognitive abilities, study skills, etc. The guidance program consist of weekly two-hourly meetings during school time, plus additional activities and direct communication between teachers and parents, and uses elements from the following theories: Mindset theory of Dweck (2006), General problem-solving model of Seesink (2003), Seven habits of effective teenagers of Sean Covey (1998), Meta-cognitive study skills handbook Stella Cottrell (1988). At first, a group-wise approach was set up, gradually this has been taken over by an individualized program in which coaching as a means of support has proven to be most effective, using recent insight from Coaching Academy International (2014). Cornerstones of the guidance programs are: (1) Respect and accept high ability; (2) Give feedback; (3) Give room; (4) Stop disqualifying; (5) Repair missing knowledge; (6) Needs and interests of the pupils; (7) Allow self-direction in learning. Early results point at effectiveness in supporting absolute underachievers to improve their performance to relative underachievement. In the presentation the final results will be shared and discussed.

PAPER SESSION 26: Motivation

Scientific strand

Time: Friday, 19 September: 5:30 p.m. – 7:00 p.m.
Location: Plečnik 2-3

Chair: Szilvia Peter-Szarka

PAP 26-1: Mindset – to Fulfill our Potential: the Hungarian Adaptation of Mindset-Questionnaire and its Relevance in Talent Development

Szilvia Peter-Szarka

University of Debrecen, Hungary; pszsilvia@gmail.com

In the past few decades positive psychology became very popular in psychology, putting emphasis on self-actualization and continuous growth. At the same time motivational research also revealed the importance of intrinsic drives and the need for autonomy, relation and competence. Dweck's mindset-theory can be interpreted within this framework and shows how a simple idea about the brain can create a love of learning and perseverance. People with a Fixed mindset believe that their basic qualities, like their intelligence or talent, are simply fixed traits. They may also believe that talent alone creates success - without effort. In a Growth mindset, people believe that their most basic abilities can be developed through dedication and hard work - brains and talent are just the starting point. This view creates a love of learning and a resilience that is essential for great accomplishment. Skill development, trust in continuous growth, motivation and effort are key elements of talent development, too. Realizing its importance, a research group of the University of Debrecen, Hungary decided to provide research-based data to verify the relevance of the mindset-theory. As a first step, the 4-item Mindset-questionnaire

for adults was translated and the first statistical analysis was made to confirm its reliability and validity. This presentation introduces the initial measurement properties of the Hungarian Mindset Questionnaire as completed by 200 persons, together with Rotter's Locus of Control questionnaire, Duckworth's Short Grit Scale and the Openness scale of the NEO-PI questionnaire. The presentation shows, 1) why mindset theory can be used as a basis for motivational practices, including also some critical remarks to problematic elements of the theory, introduces (2) recent findings about the reliability and validity of the Hungarian version of the Mindset-questionnaire and explains, (3) why mindset can be a key question in talent development and in fulfilling our potential.

PAP 26-2: Self-Determination Theory: A Link Between Challenging Education and Optimal Learning Environments to Motivate Gifted Students

Greet C. De Boer¹, Marie-Christine J. L. Opdenakker², and Alexander E. M. G. Minnaert¹

¹University of Groningen, the Netherlands; ²GION, University of Groningen, The Netherlands; g.c.de.boer@rug.nl

Despite all efforts of schools and teachers to better align their curriculum and teaching to the needs of gifted students, educational practice shows that gifted students are not engaged with learning in school. Recommendations for challenging education for gifted and talented students are usually characterized by differentiation in learning contents and learning paths, like offering enrichment tasks or acceleration. In addition literature shows many recommendations for teacher characteristics and competencies for educating gifted students, like offering challenging tasks, stimulating higher order thinking etc. And, although research stress the importance of students' perception of their learning environment, there seems to be less attention for the effects of the learning environments teachers create in their classes in relation to challenge and motivate gifted students. Fostering environmental motivation is an important key issue in the Self-Determination Theory (SDT) (Opdenakker & Minnaert, 2011). According to this theory students should remain motivated for school and engage in school task when the learning environment support the fulfillment of their needs to feel autonomous, competent and related. In this presentation we discuss the results of an evaluation study on Dutch schools with a Gifted Profile (N = 25) concerning teacher characteristics and competencies for teaching gifted students in relation to the SDT (DeBoer, Brakke, & Minnaert, 2013). Chan's (2001, 2011) questionnaire of teacher characteristics and competencies, based on Feldhusen (1977), was administered on teachers (N = 280), students (N = 227) and parents (N = 320) in the Netherlands. Based on factor analysis we found a striking similarity between those characteristics and competencies and the key issues in the SDT. Implications for policy and teacher education will be discussed.

PAP 26-3: Motivation of Gifted Students – in the Digital Age and Beyond

Ajda Erjavec Bartolj and Marija Dominko Gabor

Gimnazija Bežigrad, Slovenia; ajdaerjavec@gmail.com; marija.dominko@gimb.org

The paper introduces parts of a research conducted in spring of 2014 at Gimnazija Bežigrad. Research activity has been supported by the Faculty of Education in Ljubljana and originally designed by two school counsellors to obtain information useful for staff

development. Approximately quarter of students, aged between 15 and 19 (N = 255), and two thirds of the faculty (N = 57) have taken part. The main aim has been to obtain an objectivized perspective on what motivates gifted students for learning, how involved they are in various activities and how they perceive themselves. Students' and teachers' attitudes towards giftedness and gifted students have also been checked. Results have shown that students in average rate learning with the help of computers as medium important for their motivation. It seems differences between male and female students occur, female students rating learning with the help of computer as less important. Altogether they evaluate their teachers pay medium attention to this element of teaching. Considering the use of technology in the classroom, at home assignments and other school matters (i.e. participation in the mentioned research) authors conclude that school development in this area has been suitable. In light of other results, the paper focuses on elements, that students have rated as most important for their motivation and mainly refer to teacher – student (personal) relationship. Authors expose elements that are, according to students, overrated (i.e. difficult assignments) or underrated (i.e. the use of humour) by the rate of attention their teachers pay to them. In conclusion the authors argue that (at least) in case of, otherwise, satisfactory use of technology, various elements of teacher-student relationship seem to be the most important element of motivating gifted students and should therefore be recognized as a developmental priority.

WORKSHOP SESSION 5

Horizons: Gifted Beyond the Digital Age

TTime: Friday, 19 September: 5:30 p.m. – 7:00 p.m.

Location: Plečnik 4

WOR 8: The Effect of Modelling in Teacher Trainings

Eleonor Van Gerven

Slim! Educatief, The Netherlands; info@slimeducatief.nl

This workshop is about the effect of modelling in teacher trainings. The main idea is that if you want to change behaviour, you have to change your own behaviour. This idea not only applies when you teach children, it also applies when you teach teachers. A teacher can only teach a child how to become a learner, if he has experienced how it feels to become a learner himself. In this workshop by experiencing some of the didactical principles we use, you'll get the opportunity to explore the underpinning ideas, structures and strategies of our trainings. It shows you how to become a more effective teacher trainer. Results of the research that is done to the effect of this way of training will be presented.

Time: Friday, 19 September: 5:30 p.m. – 7:00 p.m.

Location: Plečnik 5

WOR 9: “Getting to Know You” Game and Other Simple Activities to Enhance Social Skills in Bright Children

Pichak Siripoonsap and Ngarmmars Kasemset

Thailand - the Gifted and Talented Foundation, Thailand; pichak@nationalgiftedthai.org; ngarmmars@nationalgiftedthai.org

“I’m good with numbers/ I’m good with written words, but I’m not good with people!” is a familiar refrain from talented children - and adults - all over the world. Since social skills are recognised as one prime foundation for life success, as educators of talented children, we have tried to devise activities to bring out these skills in our students. Using two simple devices: a ping-pong ball and an exercise book, the children play games that help them to relax and to begin friendships with peers that they have just met. Over 8,500 children in our country have enrolled in these workshops. The results have been excellent.

Abstracts – Saturday, 20 September 2014

Horizons: Gifted Beyond the Digital Age

DEMONSTRATION SESSION 3

Best practice strand

Time: Saturday, 20 September: 8:15 a.m. – 8:45 a.m.

Location: Ravnikar Hall

DEM 6: Career Orientation for Gifted Students

Karmen Pečarič Podobnik and Timotej Savelli

Secondary school Vegova Ljubljana, Slovenia; karmen.pecaric@guest.arnes.si

School counsellor and her student would like to present a practical example of working with gifted on technical gymnasium. Demonstration would include a presentation of a psychologically oriented research paper on personal qualities of a photographer which sets a great example of how different aims such as career orientation, discovering new points of various professions, psychology topics as personality traits and others can be combined to help talented students develop their full potential. Students did not only get experience with research work but also a chance to expand their assignment and reach beyond standards that were expected from most of their peers. The student would also talk about how his simple school task grew to an extensive research paper, which was rewarded on regional competition for young researchers, and show why it is important for tutors to recognize their students’ talent and help them, so they can do their best and reach for the sky. Research paper Pogled skozi objektiv (A view through the lens of a photographer) focuses on ideal personal qualities of a photographer, specifically on public opinion on ethics and realism of photojournalists, personal initiative and professionalism of commercial photographers as well as communication skills and talent of portrait photographers. Based on the interpretation of the results, I was able to get the final image of ideal personal qualities of a photographer: photojournalists – respect of photographers’ ethics and moral principles as well as a tendency to reveal the real situation, commercial photographers – weak or medium personal initiative and ability to assure relaxed atmosphere and organized labour, portrait photographers – comprehensive or partial communication skills. In addition to the aforementioned qualities, the majority of the respondents believe that any photographer must be talented and have a sufficient expertise in order to achieve best results in their field.

Time: Saturday, 20 September: 8:15 a.m. – 8:45 a.m.
Location: Martin Krpan Hall

DEM 7: Logic Games and Problem Solving Activities with Augmented Reality (AR)

Jacopo Lorenzetti¹, Anna Maria Roncoroni², and Sara Peruselli¹

¹AISTAP, Italy; ²Italian Association for Gifted and Talented Students, Italy; gifted@roncoroni.eu

Augmented Reality (AR) can enrich educational activities, creating an environment that includes both digital learning inputs and real-world elements, functioning as triggers. With AR, students can practice their problem solving skills and acquire new knowledge in a spontaneous way. It is a challenging alternative to teaching with QR codes or hyperlinks. With AR-based activities, you can practice essential skills and cognitive functions like bias identification, planning, decision making, updating and general problem solving skills. In this workshop we share with you the scavenger hunt/Einstein's riddle/math and logic AR games that the gifted students of Aistap (aged 6 to 10) have experienced in our workshops, and discuss how this way of interacting can influence motivation and problem solving.

PAPER SESSION 27: Competitions

Best practice strand

Time: Saturday, 20 September: 11:30 a.m. – 1:30 p.m.
Location: Plečnik 5

Chair: *Barbara Rovšek*

PAP 27-1: Physics Competitions - a Balance between Challenging the Gifted and Popularization

Barbara Rovšek

Faculty of Education, University of Ljubljana, Slovenia; barbara.rovsek@pef.uni-lj.si

Learners of primary and secondary schools in Slovenia have many opportunities to compare their knowledge and skills, obtained at different school subjects, with peers, while participating in competitions, organized for these subjects. Some competitions already have respectful tradition of few decades and among these physics competitions can be included.

Competitions are organized for two basic reasons. The first one is to promote and popularize particular school subject among wide as possible population of learners. The second one - not less important - is to detect those pupils, who have strong interests and also potentials for the highest achievements in particular disciplines. If we want to get to those more capable and interested pupils we have to offer them appropriate challenge and opportunity to test themselves and also to compare to others. Trying to accomplish both goals (to promote and detect the most promising) is necessary a frustrating activity. A balance should be achieved between the number of reasonably simple tasks, which

can be successfully solved by a solid majority of participants, and more difficult, new, challenging problems to address and activate the gifted pupils. If all the problems are easy we can easily miss and also lose the gifted and if problems are too difficult we will lose inclination of majority. We will present how a reasonable balance between these two contradictory goals is obtained in physics competitions for pupils in primary school. We believe the present form of the three-level physics competition facilitates popularization of the discipline among the learners at the school level, providing that certain number of more complex tasks are given already on this level. They are a selection tool, which allows filtering out the best, who enter the next, more demanding, challenging, exciting and rewarding levels of competition.

PAP 27-2: Let's Make Learning Computer Science Fun

Irena Nančovska Šerbec¹, Špela Cerar¹, Irena Demšar², and Janez Demšar³

¹Faculty of Education, University of Ljubljana, Slovenia; ²The A. Šuštar Primary School, Slovenia; ³Faculty of Computer and Information Science, University of Ljubljana, Slovenia; Irena.Nancovska@pef.uni-lj.si

In recent years computer science (CS) has become more and more important in everyday life. As we would like to introduce CS to students in as interesting way as possible, many initiatives were established around the world in order to prepare fun activities and courses, e.g. CS Unplugged, CS4fun, Computing at schools, and Shutdown or Restart. In the presentation, we describe our experience with selected CS Unplugged activities with gifted students in one primary school as well as with students attending CS Unplugged summer school. In the last four years Slovenian students can attend the international contest on informatics and computer fluency Beaver. In the competition students solve tasks dealing with concepts, skills and knowledge in different fields like informatics, algorithmic thinking, logics, and CS and society. As these tasks can be solved with no specific previous knowledge of CS, they are also used by teachers as study materials in classes. Some attributes of giftedness are reflected in students' ability to learn and understand ideas quickly, display multiple strategies, approaching problem from different perspectives, engage other students in their activities, sustain their concentration and show great tendency in pursuing solutions, switch approaches easily and avoid non-productive approaches, operate easily with symbols and spatial concepts, quickly recognize similarities, differences and patterns, look at problem more analytically than holistically and work systematically and accurately. Having these abilities is to students' advantage when solving Beaver tasks, either in class or on the competition itself. Competitions have a positive impact on students' motivation for learning, as students can learn autonomously and in a fun way. They can study while collaborating with peers and mentors. Competitions present a challenge and they offer deepening of knowledge in certain topics. Given the results of the competition, students gain acknowledgment for their achievements. Competitions are also important for teachers, as the gain insight into student's knowledge in a broader perspective. In the paper we will analyse the results of the last year Beaver competition in Slovenia. We will focus on how the understanding of different CS concepts influences on the individuals overall results of the competition.

PAP 27-3: Internet-based Competitions: Benefits and Disadvantages

Viire Sepp

The Gifted and Talented Development Centre, University of Tartu, Estonia; viire@ut.ee

Academic contests, especially sequentially ordered contests, called Olympiads in different countries, have a 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 the presented paper is to analyse the benefits and disadvantages of Internet-based Olympiads in comparison with „traditional“ paper-and-pencil Olympiads. The paper is based on a study of Estonian National Olympiads, among them both virtual (Internet-based) as well traditional get-together events which are conceptualized as „interaction rituals“ 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. Taking into account the critique of participants concerning the predominance of tasks of a low cognitive level at Internet-contests, an analysis of the contents of tasks at Internet-based Olympiads in light of Bloom's cognitive taxonomy was carried out. Results have shown, that aside from the many benefits (e.g. time saving), e-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 organisational and cognitive quality of Internet-based competitions will be presented, to make them more stimulating for gifted students.

PAPER SESSION 28: Capital

Scientific strand

Time: Saturday, 20 September: 11:30 a.m. – 1:30 p.m.

Location: Ravnikar Hall

Chair: Johanna Kuhlmann

PAP 28-1: The Role of Learning and Educational Capital for Girls' Choice of STEM Programs

Johanna Kuhlmann¹, Teresa Greindl¹, Daniel Patrick Balestrini¹, and Heidrun Stoeger²

¹University of Regensburg, Germany; ²Chair Professor for School Research, School Development, and Evaluation, University of Regensburg, Germany; johanna.kuhlmann@ur.de; teresa.greindl@ur.de

Background: Evidence indicates that girls underestimate their competencies in science, technology, engineering, and mathematics (STEM) and show less interest in this domain than boys despite similar achievement levels in many countries. Furthermore, in most countries female participation rates in STEM fields are inequitably low. The concepts of learning and educational capital offer a framework for better understanding these findings. Learning capital denotes resources developed in the case of each individual child,

whereas educational capital characterizes resources developed in a society. Purpose: We investigated the extent to which organismic, actional, telic, episodic, and attentional learning capital as well as economic, cultural, social, infrastructural, and didactic educational capital (a) are associated with girls' confidence in their STEM abilities, implicit personality theories, and exam performance and (b) help predict whether girls choose to participate in extracurricular STEM programs. Methods and Results: A sample of 473 female high school students was surveyed. In stepwise regression analyses, actional learning capital relating to the totality of actions one is capable of performing was the strongest predictor of girls' confidence in their STEM abilities, beliefs in the stability of existing abilities, and modifiability of ability deficits. Infrastructural educational capital consisting of the materially implemented possibilities for action permitting learning and education was the strongest predictor of exam performance. T-Tests revealed that girls choosing to participate in extracurricular STEM programs showed significantly higher values for all capital aspects except cultural educational capital. Conclusion: Results suggest that girls with high actional learning capital feel more confident in their STEM abilities and have more favourable beliefs in their abilities whereas high infrastructural capital predicts exam performance. All five aspects of learning and four aspects of educational capital help to identify girls who may be interested in STEM activities and thus may have the potential for developing excellence in STEM.

PAP 28-2: The Applicable Value of the Talent and Social Capital

Nataša Zrim Martinjak

Faculty of Education, University of Ljubljana, Slovenia; nataša.martinjak@guest.arnes.si

In modern digital era, when the accessibility to the data and connectedness in spite of physical distance is multiplied, it is important to pay full attention for the talent. The talent shouldn't become just a capital itself in a sense of symbolic, instrumental valuelessness. The talent is a capital in function and usage, for the individual as for the public welfare. In this context we're focusing on the employable value of a talent. Dichotomy between instrumental talent and functional talent meets a question how to deal with the talent and how to support it. The main question exposed, is how the modern policy documents of educational politics, the ones that form the concept of education, which has the key role in proceedings and in the support of the talent, response to the problem. With the policy analyses of the documents and the comparative theoretical descriptive method the exposed problems are reflected and potential solutions as contribution to the applicable value of the talent are given. Modern European educational politics are oriented to stimulate the competitive position and to straighten the human capital, whose functional value is defined and conditioned by social capital. For this reason the consideration of the knowledge about social capital in education and education of the talented would contribute to exceed the present loss in support of the talent and achieving functional talent. The social capital in this context is understood as a potential and possibility at cross point form from instrumental talent to applicable, functional talent that contributes to public, collective benefit. Further on it stimulates the reflection about suitability of the emphasis in followed goals in modern development orientations.

PAP 28-3: Regionally Specific Manifestations of Cultural Educational Capital in News Writing

Daniel Patrick Balestrini¹ and Heidrun Stoeger²

¹University of Regensburg, Germany; ²Chair Professor for School Research, School Development, and Evaluation, University of Regensburg, Germany; daniel-patrick.balestrini@ur.de

There is solid evidence that East-Asian students excel in academics. International studies of education achievement document this for East-Asian societies and for East-Asian-heritage pupils living in other cultures. Over the decades, various explanations have been discussed. Recently, the actiotope model of giftedness and the allied concept of learning and educational capital have been suggested as a framework that can offer new insights into East-Asian high academic achievement. In this context, more attention has been given to the endogenous resources conceptualized by learning capital than to the exogenous resources described by educational capital. In the case of cultural educational capital, which is one of five types of educational capital, cross-cultural research suggests that such differences do, in fact, exist that can help explain East-Asian high achievement. However, existing studies lack simultaneously high levels of ecological and external validity. We thus examine large samples of news writing from English-language news outlets in East Asia (n = 23) and in the United States (n = 28) for evidence of higher levels of cultural educational capital in East Asia. The samples together comprise 121,310,108 words from all issues of the sampled news sources (N = 51) for the period from 1 June 2012 to 31 May 2013. In particular, we assess (a) the overall extent of education-related coverage, (b) the amount of attention paid to learning and school, and (c) the frequency of negative and positive emotion words in school-related reporting. While we find clear differences in the first two areas between the East-Asian and the U.S. samples, results on the usage of emotion words were less conclusive.

PAPER SESSION 29: Socio-Cultural

Scientific strand

Time: Saturday, 20 September: 11:30 a.m. – 1:40 p.m.

Location: Plečnik 2-3

Chair: Niamh Stack

PAP 29-1: Contextualised Pedagogy for High Ability

Margaret Sutherland¹, Niamh Stack¹, Thomas Aneurin Smith², and Frida Tungaraza³

¹University of Glasgow, Scotland, UK; ²University of Sheffield, England, UK; ³University of Dar es Salaam, Tanzania, East Africa, Tanzania; niamh.stack@glasgow.ac.uk

Learners, including gifted learners, are diverse, complex and constantly developing. They have individual needs that require equitable responses. Learning itself does not take place in a vacuum, it is multifaceted and constantly influenced by the past, present and potential future contexts in which it develops. As an example of this the colonisation of Africa has left a legacy on national education systems that have resulted in a disjuncture between dominant western and local (often informed by, but not wholly indigenous)

cultures and knowledges. The future appears to hold the promise of development from a basic focus on ensuring education is available to all to an acknowledgment that universal education itself must be responsive to the diverse needs of the learners, including gifted learners. Therefore whilst international educational agendas, such as the United Nations Millennium Development Goals, are typically focused on basic, universal provision, there is little attention given to how the diverse needs of learners are to be catered for in distinct national and local contexts of the Global South. In this paper as a case study we will consider the specific contexts in which learners encounter environmental science education within the African context, with concern for differences between urban and rural settings. This, we argue, is of particular importance to understanding the context in which education for gifted learners must be negotiated, and we will highlight how, even within the national space, local environmental knowledges which learners encounter will vary considerably, as do local cultures of children's voice and empowerment, within and between divergent communities. We argue that it is as much local context, as it is the nature and implementation of science education, which may structure gifted learners experiences of learning.

PAP 29-2: How Does High Early Cognitive Ability Fare in Finnish Primary Education?

Sirkku Kupiainen¹, Risto Hotulainen¹, Mari-Pauliina Vainikainen¹, Samuel Greiff², and Jarkko Hautamäki¹

¹University of Helsinki, Finland; ²University of Luxembourg, Luxembourg;

sirkku.kupiainen@helsinki.fi

Since the 1990s, there has been a growing interest in assessing not only curricular achievement but also the more general cognitive and affective goals of education, believed to indicate readiness for new learning and successful adaptation to the rapidly changing demands of the future. These transversal skills are seen to develop through good curricular education (Adey et al., 2007; Demetriu et al., 2011; Hautamäki et al., 2002; Hautamäki & Kupiainen, 2014). Within this framework, the present study looks at the development of Finnish primary school students' transversal skills through primary education with a special focus on students showing high cognitive ability at school start. With data from a longitudinal study (N = 600), two structural equation models (SEM) were compared to explain students' 6th grade verbal and mathematical reasoning and complex problem solving (cf. Kupiainen et al., 2014 and Greiff et al., 2013, respectively) with non-verbal cognitive competence measured at school start, curricular reading and mathematics measured with standardized tests at grades 1, 2, and 5, and verbal and mathematical reasoning measured at grade 4. The preliminary results show that early cognitive competence does carry through primary education but only half of the top 10% student of grade 1 score among the best 20% at grade 4, about 40% among the best 20% in reasoning and complex problem solving at grade 6, and still fewer among the best 20% in 6th grade GPA. Staying at top was a little more common for girls than for boys. In the presentation, the results will also be discussed from the point of view of education policy: has the Finnish education policy's strong emphasis on equity through helping weak students led to an inadequate challenging of those at the other end of the echelon (cf. Collins & Gan, 2013)?

PAP 29-3: "I Want a White Horse Instead of This Certificate" – Exploring Meaning and Reality of Giftedness in the Conflict Area of East Jerusalem

Fatima Elyan

David Yellin College, Jerusalem; fatima_elyan@yahoo.com

This paper is extracted from a PhD exploring the meaning and reality of giftedness for Palestinian students in East Jerusalem. The purpose of this paper is to explore the experience and the concerns of Palestinian gifted students, who live in difficult political, economic, social, and educational circumstances. They are ignored on multiple levels with their giftedness not being identified or encouraged due to a complete lack of systematic research or policy support and educational opportunities. Often, they are using strong metaphorical terms (such as "white horse" or "good wolf"), but are very seldom understood and analysed. In terms of methodology, qualitative research methods have been utilized for this study, especially the use of grounded theory and narrative case studies. Twenty research participants were selected and interviewed in their homes in East Jerusalem over the period of one year. Two of these girls were selected for the pilot study, which enabled the author to enter the field and to identify issues related to these girls. Also, two high-ability boys were observed during the researcher's own teaching lessons in Grade 1 as an additional source of data. The data of the interviews, the research journal, and the girls' diaries were coded and analysed by using grounded theory techniques. The major findings of this paper show that these students live between the expectations of family, school and community; it was the first time that they were able to express their own stories and unique concerns regarding the meaning of being gifted and being different from others in the family, school, and society. Their stories highlight the paradox between their personal dreams and acting as a "normal" member in a traditional society with socially pre-constructed responsibilities. Social and cultural pressures inhibit many families from adopting different ways of dealing with gifted children. The implication of these findings are that gifted Palestinian students do have a strong sense of who they are, but live between the Separation Walls of their families, schools, society, and the constraining political context of East Jerusalem. This study identifies and redefines the concept of giftedness and its linkage to and role in conflict areas such as East Jerusalem. Palestinian gifted students interpret their giftedness as a form of identity and a new power for changing their educational and social reality despite the lack of resources and special programs to support them.

PAP 29-4: Language Arts Curriculum Design for Verbally Gifted and Talented Learners at Middle School and High School Levels

Christine Chifen Tseng

National Taichung University of Science and Technology, Taiwan; chifen@nutc.edu.tw

This paper provides a thorough review of literature about differentiated curriculums for gifted and talented learners and depicts the development of implementation of verbally talented programs in Taiwan. Verbally gifted and talented learners are students who demonstrate precocity in linguistic development, rich imagination and creativity, acute sensitivity to life and a positive attitude toward challenge. To help verbally talented learners fully develop their potentials and thrive in the fields where they outshine their normal counterparts, educators need to design differentiated curriculums which are

different from the normal curriculums appealed to the general students. Based on educational theories and consideration of the specific social and cultural milieu of Taiwan, the author delineates principles for designing language arts curriculum for verbally talented students at middle school and high school levels. Meanwhile, ten educational goals, five core abilities of students, and six course elements are enumerated to serve as guidelines for educators in designing an appropriate differentiated curriculum for their students.

PAP 29-5: Exploring the Conception of Giftedness in Lebanon

Sarah El-Khoury and Anies Al-Hroub

American University of Beirut, Beirut; sarah.khoury87@gmail.com; aa111@aub.edu.lb

This study adopted a mixed research design in order to explore current elementary teachers' perceptions of the attributes of gifted students, as a starting point to understand where the lack of understanding in the construct of giftedness is. The purpose of this study is threefold: (1) explore the perceptions teachers currently have on attributes of gifted students, (2) survey the current practices used as forms of identification for gifted students; and (3) explore the available services and programs used in schools for students with gifted needs. Data was collected through 140 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, for example, the ability to bargain for better prices, and cutting in line to get the service or product faster. 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 procedure available, due to a lack of an official definition on Lebanon, thus teachers reported that they tend to rely heavily on scores on the report cards, or consult with other teachers, principal, or parents. One secondary finding was the boys tended to be identified by teachers for giftedness more than girls. Finally, as for programs and services, no program seems to exist in Lebanon and in schools, according to the teachers.

PAPER SESSION 30: Gifted vs. Non-Gifted

Scientific strand

Time: Saturday, 20 September: 11:30 a.m. – 1:30 p.m.
Location: Plečnik 4

Chair: Ciska Pieters

PAP 30-1: Mental Health, Wellbeing and Signs of Intellectual Giftedness in a Flemish Population Study

*Ciska Pieters*¹, *Mathieu Roelants*², *Karine Verschueren*³, *Tessa Kieboom*⁴, and *Karel Hoppenbrouwers*⁵

¹KU Leuven, Belgium; ²Environmental Health, Youth Health Care, KU Leuven, Belgium; ³School Psychology and Child and Adolescent Development, KU Leuven, Belgium; ⁴Center for the Study of Giftedness, Antwerp, Belgium; ⁵Environmental Health, Youth Health Care, KU Leuven, Belgium; ciska.pieters@med.kuleuven.be

Background: School health professionals are often confronted with questions from parents about the wellbeing of their child labelled as gifted. Because of conflicting evidence in the literature and the lack of epidemiological data, there is currently no consensus on the specific care needs for these children. Aims: To assess and compare mental health and wellbeing in Flemish children and adolescents with and without signs of giftedness; and to investigate mental health and wellbeing in relation to signs of intellectual giftedness and socio-demographic characteristics. Methods: Questionnaire data from 1891 6-year old children and 1499 12-year old adolescents were collected in a multidisciplinary population based cohort study in Flanders (JOnGI), and from 223 clients of a counselling service for gifted children. Parental questionnaires included items on behavior (e.g. Strengths and Difficulties Questionnaire, SDQ), intellectual giftedness and the socio-demographic background. Self-report questionnaires for adolescents included the SDQ and instruments on wellbeing (e.g. KIDSCREEN-10). Cognitive abilities were assessed during a face-to-face-contact in a sample of children with and without signs of giftedness (N = 290 in total). Questionnaire data were analysed in relation to intelligence scores of the Wechsler Intelligence Scale for Children-III (WISC-III). Results: Regression analysis indicated that children labelled as gifted had significantly higher SDQ overall problem scores at ages 7 ($p < 0.001$) and 8 ($p < 0.001$). According to the parent report, adolescent clients of a counselling service for gifted youth, showed significantly higher overall problem scores at ages 13 ($p < 0.001$) and 14 ($p < 0.01$), even when corrected for the label giftedness. Conflicting results were found in the adolescent self-report, with little or no effects of being a client of a counseling service, nor of the label giftedness, on SDQ overall scores or wellbeing. Effects of intelligence on SDQ scores were non-significant or tended to lower SDQ problem scores in both children and adolescents. Conclusions: Several aspects of mental health in Flemish youth seem to be related to signs of intellectual giftedness, but nature and strength of this association depends on the informant, age group and criteria used to define giftedness.

PAP 30-2: Perception in the Present and the Future Vision of Gifted and Other Students

Ljiljana Krneta

Faculty of Political sciences, University of Banja Luka, Bosnia and Herzegovina;
krnetaljiljana@yahoo.com

Starting from phenomenological interpretation that emphasizes the observation by me and reflects his own subjective experience of the past, present and future the author presents the ratio of gifted and other students about the psychological nature of self-consciousness. This involves emotionally-values component of personality and relationship self-awareness. Implemented empirical and non-experimental study $N = 688$, and $N = 216$ gifted students in secondary schools (high schools, technical school and art) included students of different places living. Problem research covers a wider area of determinants of academic success of gifted and other students, and relationship awareness then selves. In a sample of 688 gifted and other students, aged 16 to 18 years, completed a study with the aim to investigate the perception of the present and the future vision of gifted students and others as determinants of self-awareness. The results showed that there is a statistically significant difference in perception between the present and the other gifted students. The gifted students have something pessimistic picture of the perception of the present as compared to other students. In perception vision of the future between the gifted and other students were no statistically significant differences in their view of the future, and you cannot expect differences in the future between the gifted and other students. The results of research can be used in consideration of realistic self-image on the gifted and other students, and is an important element of the analysis of the performance of gifted and other students in contemporary education. The results point to a greater need for empirical studies of gifted and other students, including complex perceive and the need for a holistic approach. Especially including the growing process of globalization and the digital age the status of gifted and other students in the digital world.

PAP 30-3: A Longitudinal Examination of the Outcomes for Gifted Students in the Wollongong Youth Study

Wilma Vialle and Steven Howard

University of Wollongong, Australia; wvialle@uow.edu.au

The Wollongong Youth Study is an eight-year longitudinal study that examined the relationships among personality factors, social support and emotional well-being on the social, emotional and academic outcomes of 900 young people. The study aimed to determine the combination of factors that would best predict positive outcomes for the students as they left school and entered their post-schooling lives. This paper focuses on the research question of what factors are related to the achievements of gifted students compared to their non-gifted peers. It was anticipated that the research would point to potential interventions to support gifted students during their secondary schooling years. Data were collected from the 950 students through questionnaires every year. The questionnaires included a range of established scales, including - but not limited to - trait hope, conscientiousness, attitudes to school, self-esteem, problem-solving orientation and the Big Five. Additionally, data on social and emotional adjustment and

behaviour were collected from teachers and parents at four time-points across the six years of schooling. Further, the students' school grades were collected twice-yearly. The results demonstrated that overall the gifted group performed better academically than the non-gifted group with some notable exceptions. However, they scored lower on a number of the emotional outcomes and reported less satisfaction with their social supports. On some measures - most notably, self-esteem - there were no differences between the groups and no statistically significant relationship between this factor and academic achievement for the whole cohort. The presentation will outline the detailed relationships across all factors as well as look at the factors that differentiate among high and low achievers within the gifted group (i.e. psychoticism, hope and conscientiousness). The results demonstrate the importance of providing targeted support for gifted students during their schooling years.

PAPER SESSION 31: Parents and Teachers

Time: Saturday, 20 September: 11:30 a.m. – 1:30 p.m.
Location: Plečnik 1

Chair: James Campbell

PAP 31-1: Cross-Cultural Mother-Daughter Studies of European (Germany, Cyprus) High School Girls and Asian (Thailand, Taiwan) 5th-Grade Girls

James Campbell and Jami Scherr
St. John's University, USA; campbelj@stjohns.edu

Theoretical grounding: Eccles expectancy-value model postulates (Eccles, 1983, 2007; Eccles & Harold, 1993; Eccles & Wigfield, 2002) that parents' values and beliefs predict their child's perceptions in a number of important areas. Gniewosz and Noack (2012) believe that parents' academic values about school predict their child's perceptions of these values. This study examines their hypothesis by analysing the same family processes from the mothers' and daughters' perspectives and determining the result on achievement. Research questions: (1) How do daughters react to their mother's pressure? (2) Does a mother's support predict her daughter's expectations? (3) Do daughters accurately perceive their mother's support? (4) How do daughters react when their mothers help? (5) How do daughters perceive their mother's supervision, and the press for literacy? Methodology: The data source included mother-daughter dyads of 472 European high school students (134 German, 337 Cypriot) and 260 Asian 5th-grade students (97 Thai, 163 Taiwanese). We used Principal Component Analyses to derive 12 factor/components and employed them as independent variables with academic achievement using PLS-SEM methodology. Main results: Europe: (1) European high school girls significantly disagreed with the support offered by their mothers. (2) Daughters with lower GPAs trigger their mother's dissatisfaction and subsequent pressure. The girls accurately perceive this pressure, but it is dysfunctional because it is associated with significantly lower achievement. Asia: (1) A mother's support is a significant predictor for her daughter's perception of her expectations, and this significantly affects her achievement.

(2) SES significantly predicts a mother's family processes. Conclusion: The dissatisfaction factor is a measure of underachievement. Mothers that get high scores on this factor attribute their child's underperformance to be due to either a lack of motivation, a degree of disorganization, or a lack of effort.

PAP 31-2: Can Parental Expectations be Adequately Measured by a Single-Item Construct?

James Campbell and Michelle Kyriakides
St. John's University, USA; campbelj@stjohns.edu

Theoretical grounding: Parental expectations are a strong predictor of a gifted student's academic achievement and higher education attainment. The primary flaw in many parental expectations studies is the over reliance on a single-item to represent this construct. Many of the US national (NELS88, NAEP) and international data bases (TIMSS) use single-item constructs as the only measure of parental expectations. Research question: The purpose of this study is to synthesize a parental expectations construct and to compare it to a single-item construct in separate path analyses. Which construct is the best predictor in achievement analyses? Research design & Methodology: This study utilized 6,502 participants from 17 separate studies of students enrolled in elementary, middle, and high schools in the United States (3rd grade through 12th grade). Chin (1988) recommends doing additional factor analyses (either PCA or PFA) using the items isolated in a preliminary factor analysis to isolate different factors at a higher level of abstraction. We used this approach with PCA analyses to synthesize a 9-item expectation factor. We then used the 9-item factor and the single-item construct as independent variables in separate path analyses. Main result: We analysed the predictor capabilities of the variables' with three achievement variables (math, language arts, GPA). The most significant finding of the study is that utilizing a single-item proxy variable to represent parental expectations results in multiple Type I and Type II errors. We agree with Sarstedt and Wilczynski (2009) that multi-item constructs are more productive. Conclusion: When conducting future research on pre-disposition, parental expectations, and social capital theory, a factor must be utilized to represent parental expectations because complex socio-psychological constructs cannot be adequately represented by single-item measures.

PAP 31-3: Measuring Gifted Children's Behavioral Profiles: From Relevant Approach into Interventions

Janneke Berendsen-Hulshof and Lianne Hoogeveen
Radboud University, Center for the Study of Giftedness, Nijmegen, The Netherlands;
j.berendsen@schaersvoorde.nl

Can a behavioural questionnaire, based on the revised profiles of the gifted and talented children (Betts & Neihart, 2010) lead to relevant educational interventions in practice? In this study participated 23 gifted secondary school pupils aged 13 to 15, their parents and 4 teachers who have taught the pupils for at least 2 years. They filled out separate behavioural questionnaires of 46 statements, based on the revised profiles by Betts and Neihart. The post-test took place one year later. Within the pre and post-test period the pupils were observed by the teachers who suggested and implemented a number of interventions which were primarily individually aimed, however affected the whole

test group of pupils. The outcomes showed some noticeable changes. Predominantly in the post-test outcomes were vivid in the particular profile within which the preferable jointly interventions were aimed at: "The Autonomous Learner". This means a positive result within the terms and purposes of this study. The teachers' and parents' outcomes could be seen as confirmative, often, but definitely not always. There was, however, a discrepancy in the outcomes of parents and teachers. Considering the outcomes, one can conclude that the profiles are effective as means of identifying gifted pupils' needs, but insufficient for effective implementation into practice. The theoretical knowledge which were strengthened by teachers' interventions has been used in order to achieve the preferable educational interventions. Hence the results of this exploratory study could be seen as positive, including the fact of importance of the behaviour questionnaire being a reasonable identifying and approach indicating means for implementations of educational interventions aimed on pupils' learning process.

Author Index

Aksoy, Tuba 33, 71
Akyol, Goksen 33, 71
Albert, Elizabeth 33, 70
Alencar, Eunice 38, 40, 88, 97
Al-Hroub, Anies 37, 63, 85, 177
Alkhannani, Badriah 50, 130
Almeida, Leandro 40, 97
Altaras Dimitrijevic, Ana 52, 54, 138, 146
Aneurin Smith, Thomas 62, 174
Apostolou, Antonios 58, 160, 162
Aram, Urška 44, 113
Arrigoni, Jasna 56, 153
Assunta Zanetti, Maria 40, 96
Ayas, Bahadır 40, 96
Ayvaz, Ulku 45, 115
Azevedo, Ivete 40, 97
Bagdy, Eموke 35, 76
Baimyrza, Miras 59, 160
Bajc, Jurij 41, 100
Bal Sezerel, Bilge 55, 148
Balestrini, Daniel Patrick 62, 172, 174
Bannister, Barbara 42, 106
Battistella, Pier Antonio 39, 41, 94, 103
Bejat Krajnc, Nela 49, 126
Benbow, Camilla 45, 116
Berendsen-Hulshof, Janneke 64, 181
Beretta, Angela 40, 96
Bezić, Tanja 37, 84
Blumen, Sheyla 13, 22
Borbelj, Jasna 40, 95
Borges, África 42, 51, 104, 133
Borštar, Vilijem 32, 66
Bosnić, Tamara 32, 66
Botella, Marion 35, 76
Boulos, Lina 35, 78
Bouwman, Nienke 55, 149
Boyanova, Diana 54, 144
Bozbey, Selin 39, 93
Bradić, Sanja 39, 91
Brašnić, Ljiljana 40, 95
Brazzolotto, Martina 39, 41, 94, 103
Brodsky, Simeon 58, 160
Brody, Linda 58, 160

Burov, Oleksandr 35, 80
 Cadenas, María 51, 104
 Calikoglu, Burcu Seher 48, 124
 Campbell, James 64, 180, 181
 Cerar, Špela 61, 171
 Chandler, Kimberley 36, 43, 83, 109
 Charalampidi, Marina 51, 136
 Chifen Tseng, Christine 63, 176
 Cho, Seokhee 51, 135
 Clinkenbeard, Pamela 43, 108
 Cotabish, Alicia 51, 134
 Courtinat-Camps, Amélie 42, 105
 Craanen, Anneke 59, 164
 Csermely, Peter 12, 16, 17, 19, 53, 142
 Csikszentmihalyi, Mihaly 13, 19
 Cuer-Buard, Karine 42, 105
 Cvetković – Lay, Jasna 15, 30
 Cvitanič, Mariša 32, 66
 Černec, Bor 49, 126
 Čosić Alibegović, Ezra 32, 66
 Dailey, Debbie 51, 134
 De Boer, Greet C. 60, 166
 De Jong, Ton 42, 106
 Demšar, Irena 61, 171
 Demšar, Janez 61, 171
 Denessen, Eddie 44, 114
 Devetak, Iztok 33, 69
 Dominko Gabor, Marija 32, 60, 66, 166
 Dora, Sema 33, 71
 Drobnjak, Danilo 52, 138
 Edinger, Matthew 56, 152
 El-Khoury, Sarah 63, 177
 Elyan, Fatima 63, 177
 Endepohls-Ulpe, Martina 52, 139
 Erjavec Bartolj, Ajda 48, 60, 123, 166
 Escalante, Macarena 54, 144
 Eysink, Tessa H.S. 36, 42, 80, 106
 Feltzer, Max 57, 158
 Fischer, Christian 21, 37, 46, 47, 85, 86, 119, 120
 Fleith, Denise 38, 40, 88, 97
 Freeman, Joan 12, 16
 Freljh, Črtomir 42, 104
 Fritz, Astrid 52, 139
 Frumau Van Pinxten, Mia 34, 72
 Fuszek, Csilla 15, 29
 Fülöp, Márta 15, 21
 Gari, Aikaterini 56, 154
 Gojkov Rajić, Aleksandra 36, 81
 Gojkov, Grozdanka 36, 81
 Gomez-Arizaga, Maria P. 35, 77
 Gonzalez, Andrea 35, 77
 González, Pablo 54, 144
 Goossens, Lana 33, 41, 68, 101
 Gradišek, Polona 39, 91
 Greiff, Samuel 63, 175
 Greindl, Teresa 62, 172
 Gubbels, Joyce 52, 137
 Habe, Katarina 32, 43, 66, 109
 Haenen, Janine 51, 133
 Hausamann, Dieter 33, 68
 Hautamäki, Jarkko 63, 175
 Heinbokel, Annette 55, 150
 Henderson, Lesley 43, 110
 Hillmann, Paula 49, 128
 Hooegeveen, Lianne 15, 22, 28, 33, 37, 41, 44, 46, 51, 52, 55, 57, 64, 68, 85, 101, 114, 120, 133, 137, 149, 158, 181
 Hoppenbrouwers, Karel 63, 178
 Horvat, Marina 44, 133
 Hotulainen, Risto 45, 63, 114, 175
 Howard, Steven 64, 179
 Hsieh, Chia-en 57, 156
 Hughes, Gail 51, 134
 Inman, Tracy 52, 58, 140, 159
 Irgolič, Rafael Frančišek 32, 66
 Jaksetič Dujc, Štefanija 38, 89
 Jarvin, Linda 57, 157
 Jaušovec, Norbert 14, 20
 Jurinec, Nina 44, 113
 Juriševič, Mojca 20, 33, 53, 56, 69, 141, 152, 153
 Južnič, Primož 50, 129
 Kämpnick, Friedhelm 37, 86
 Kaput, Albert 59, 164
 Kara, Naif 34, 74
 Karakan, Yasemin 33, 71
 Karfi, Afroditi 56, 154
 Kasemset, Ngarmmars 56, 60, 155, 168
 Kehoe, Stuart 33, 34, 70, 73
 Kieboom, Tessa 63, 178
 Kirrane, Rebecca 34, 73
 Knopfmacher, Susan 55, 151
 Koens, Karin 46, 118
 Kogovšek, Damjana 40, 98
 Kos, Jasna 32, 66
 Košir, Katja 44, 113

Kovářová, Renata 39, 94
 Kovi, Zsuzsanna 35, 76
 Krneta, Ljiljana 63, 179
 Kržan, Peter 32, 66
 Kubala, Martin 13, 23
 Kuhlmann, Johanna 62, 172
 Kuo, Ching-Chih 57, 156
 Kupiainen, Sirkku 45, 63, 114, 175
 Kuzman, Boštjan 55, 148
 Kyriakides, Michelle 64, 181
 Laclote, Paulette 54, 144
 Lee, Jun-Ren 57, 156
 Leenders, Cathelijne 34, 75
 Leinigen, Petra 42, 107
 Lep, Biserka 49, 126
 Li, Xiaoyan 44, 54, 57, 112, 145, 156
 Lorenzetti, Jacopo 41, 61, 102, 170
 Lubinski, David 45, 116
 Lucangeli, Daniela 39, 41, 94, 103
 Maksić B., Slavica 14, 25
 Maldonado, Lesly 54, 144
 Malešević, Tamara 32, 65
 Mandracchia, Marcella 51, 135
 Mathijssen, Sven 57, 158
 Mellroth, Elisabet 48, 122
 Merrotsy, Peter 14, 26
 Miazza, Daniela 39, 93
 Minnaert, Alexander E. M. G. 60, 166
 Mirnics, Zsuzsanna 35, 76
 Mobarec, Marcelo 54, 144
 Moehringer, Jutta 50, 132
 Moltzen, Roger 35, 76
 Montgomery, Diane 24, 43, 49, 110, 111, 127
 Morais, Maria De Fátima 40, 97
 Morales, Patricia 54, 144
 Mueller-Oppliger, Victor 28, 36, 82
 Nahtigal, Nataša 32, 66
 Nančovska Šerbec, Irena 61, 171
 Nazli Ozdemir, Nazmiye 38, 89
 Nealon, Terry 53, 143
 Neihart, Maureen 44, 53, 112, 141
 Nolimal, Fani 51, 136
 Novšak Brce, Jerneja 40, 98
 Nurakayeva, Leila 59, 162
 Obergriesser, Stefanie 36, 82
 Oliveira, Zélia 38, 88
 Oostindie, Bert 55, 149
 Opendakker, Marie-Christine J. L. 60, 166
 O'Reilly, Colm 33, 34, 43, 58, 70, 73, 109, 161
 Ottink, Marloes 55, 149
 Ozbič, Martina 40, 98
 Ozdek, Sinem 33, 71
 Ozturk, Emine 50, 130
 Palacios Gonzalez, Paloma 55, 150
 Pangrčič, Polonca 48, 124
 Pečarič Podobnik, Karmen 61, 169
 Pedron, Martina 39, 41, 94, 103
 Peeters, Marieke 33, 41, 68, 101
 Pereira Da Costa, Maria 35, 76
 Pertsev, Mykhailo 35, 80
 Peruselli, Sara 39, 61, 93, 170
 Peter-Szarka, Szilvia 59, 165
 Petrova, Svetlana 39, 91
 Pfeiffer, Steven 40, 96
 Pieters, Ciska 63, 178
 Piirto, Jane 33, 70
 Pižorn, Karmen 56, 153
 Poelman, Mariska 56, 164
 Polak, Alenka 39, 92
 Pölda, Halliki 41, 99
 Polezzi, David 39, 41, 94, 103
 Puustinen, Minna 42, 105
 Rački, Željko 45, 116
 Repinc, Urška 50, 129
 Rhebergen, Phil 41, 46, 103, 118
 Rienda, Juan Jose 57, 155
 Roberts, Julia 52, 58, 140, 159
 Robins, Jennifer 36, 83
 Robinson, Ann 43, 51, 108, 134
 Roelants, Mathieu 63, 178
 Rol, Willeke 48, 111
 Rončević-Zubković, Barbara 39, 91
 Ronchese, Massimo 39, 41, 94, 103
 Roncoroni, Anna Maria 29, 39, 41, 47, 61, 93, 102, 121, 170
 Rostohar, Gordana 49, 126, 128
 Rovšek, Barbara 61, 170
 Saglam, Kamer 33, 71
 Sak, Ugur 33, 45, 71, 115, 117
 Santiago, Raul 53, 142
 Savelli, Timotej 61, 169
 Scherr, Jami 64, 180
 Schiltz, Lony 46, 117
 Schüttler, Tobias 33, 68
 Segers, Eliane 52, 137

Sepp, Viire 62, 172
Shcheblanova, Elena 38, 39, 90, 91
Shi, Jiannong 44, 54, 57, 112, 145, 156
Shumakova, Natalia 38, 187
Simonsz, Annebeth 34, 74
Siripoonsap, Pichak 56, 60, 155, 168
Skubic, Darija 56, 152
Slapničar, Miha 33, 69
Sleutels, Jan 34, 74
Smeets, Stijn 45, 116
Snijders, Lilian 41, 103
St. Pierre, Jason 33, 70
Stack, Niamh 43, 50, 62, 109, 130, 174
Stoeger, Heidrun 18, 36, 62, 82, 172, 174
Stojanović, Aleksandar 36, 81
Stone, Kathleen 54, 147
Subotnik, Rena 27, 57, 157
Sutherland, Margaret 12, 16, 26, 43, 50, 62, 109, 130, 174
Sutil, Lucía 57, 155
Škrabánková, Jana 39, 94
Tatalović Vorkapić, Sanja 56, 153
Tatic Janevski, Sanja 54, 146
Theodorou, Anastasia 56, 154
Tijl, Koenderink 46, 118
Tokmak, Fatih 40, 98
Tomšič Čerkez, Beatriz G. 50, 129, 131
Torkar, Gregor 41, 100
Tourón, Javier 53, 141, 142
Traverso, Simona 39, 93
Trebušak, Natalija 43, 110
Tsai, Shou-Ying 57, 156
Tsonopoulou, Maria 56, 154
Tungaraza, Frida 62, 174
Ukmar, Katarina 43, 110
Vainikainen, Mari-Pauliina 45, 63, 114, 175
Valadez, Dolores 42, 104
Van De Ven, Kathelijne 34, 75
Van Dijk, Alieke M. 42, 106
Van Gerven, Eleonoor 60, 167
Van Tricht, Lineke 41, 103
Verdel, Nina 41, 100
Verhoeven, Ludo 52, 137
Verlinden, Jo 33, 41, 55, 68, 101, 149
Verouden, Jaap 59, 163
Verschueren, Karine 63, 178
Vialle, Wilma 64, 179
Villena, Elisa 57, 155

Vogrinc, Janez 56, 152
Vondrakova, Eva 23, 49, 124, 125
Vrbič, Barbara 39, 92
Wagenaar, Olga 44, 114
Wallace, Patricia 53, 143
Weyringer, Sieglinde 57, 157
Winstanley, Carrie 13, 24
Wolfensberger, Marca 35, 40, 46, 47, 78, 97, 119, 121
Woltring, Chantal 59, 164
Worrell, Frank C. 14, 27
Wuestman, Anita 50, 131
Yoke Leng Tan, Doreen 44, 112
Zambrano, Rogelio 42, 104
Zappi, Victor 41, 102
Zelenda, Stanislav 32, 67
Zeltser, Pnina 54, 145
Zhang, Xingli 44, 54, 57, 112, 145, 156
Ziegler, Albert 13, 18
Zorman, Rachel 34, 73
Zrim Martinjak, Nataša 62, 173

Upcoming Conferences

Brisbane, Australia: from 19–21 March 2015



Illuminating the Spectrum of Giftedness and Talent Development

The next conference of the International Research Association for Talent Development and Excellence (IRATDE) Conference will be held in conjunction with the Australian Association for the Education of the Gifted and Talented (AAE-GT), hosted by the Queensland Association for Gifted and Talented Children (QAGTC), in Brisbane Australia from 19 - 21 March 2015. The conference theme will be *“Illuminating the Spectrum of Giftedness and Talent Development”*. More information including details of call for conference papers can be found on www.iratde.org.

The conference committee would like to extend an invitation to all interested researchers, educators and practitioners to submit a conference abstract, around the theme of *“Illuminating the Spectrum of Giftedness and Talent Development”* for consideration. The conference will have a special focus on the spectrum of different types of giftedness (e.g. intellectual, creative, artistic, social and emotional, and physical and perceptual giftedness) and the range of different approaches to gifted education and talent development.

We will be hosting researchers, teachers, school leaders and administrators, a variety of practitioners, parents, and students from diverse backgrounds and countries.

We look forward to the opportunity of adding your voice to this important international event in 2015!

Odense, Denmark: from 10–14 August 2015



2015 WCGTC World Conference

The World Council for Gifted and Talented Children will hold its 21st Biennial World Conference August 10-14, 2015 at the Radisson Blu H.C. Andersen Hotel in Odense, Southern Denmark. This unique international event brings together leaders in the field of gifted and talented education every two years to promote communication among one another and share best practices and experiences. The theme of the 2015 conference is *“Educating Gifted and Talented Children-Turning Research into Practice”*.

The conference will seek to build multicultural bridges and networks across many interests related to giftedness, creativity, and talent for those working in research, education, and advocacy. Come share your knowledge and learn from others from around the world at the World Conference, the official conference of the WCGTC.

For information about submission proposal and registration see: www.worldconference2015.com

