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CREATIVITY RESEARCH AND INNOVATION IN GIFTED EDUCATION:
SOCIAL, INDIVIDUAL, AND EDUCATIONAL PERSPECTIVE



| BOOK OF ABSTRACTS

1st Thematic ECHA Conference | Creativity Research and Innovation in Gifted Education:
Social, Individual, and Educational Perspective

Faculty of Education
Josip Juraj Strossmayer University of Osijek
Osijek, Croatia, Europe
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Social, Individual, and Educational Perspective

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WELCOME

Dear Friends of ECHA and Gifted Education

On behalf of the General Committee of ECHA and the whole ECHA Community it is my great pleasure and honour to invite you to the 1st Thematic ECHA Conference entitled Creativity Research & Innovation in Gifted Education: Social, Individual, and Educational Perspective, which will be organized from 16th to 18th October 2019 in the city of Dubrovnik, Croatia, a UNESCO World Heritage Site.

This will be the first Thematic ECHA Conference. ECHA made a poll before starting this initiative, which indicated that ECHA members would love to attend to a conference which is in-between two larger international ECHA conferences, and has a focused topic as the central theme. Creativity is the “heart” of giftedness, therefore it is a superb choice. Moreover, creativity is a rather difficult concept, where many approaches exist. Therefore it is great to devote a whole meeting to discuss its details. The organizers invited well-known keynote speakers to introduce the subject at a world-class level. I very much hope that the richness of the symposia, workshops and discussions will extend this very promising start.

The Thematic Conference in Dubrovnik will also host a General Assembly of ECHA, a Youth Summit of the Youth Platform of the European Talent Support Network, and will provide ample opportunities for networking.

Thus our only task is – TO ATTEND and to contribute to this very promising meeting!

See you in Dubrovnik!

Peter Csermely
President of ECHA

Dear Conference Attendees, welcome to Dubrovnik, Croatia, Europe!

On behalf of the Organising Committee and serving as the Chair of the **1st Thematic ECHA Conference** entitled **Creativity Research & Innovation in Gifted Education: Social, Individual, and Educational Perspective**, it is my great pleasure and honour to invite you to this international scientific conference in the City of Dubrovnik, Croatia, Europe.

This is the first ECHA conference ever to be held in the **Republic of Croatia**. The organiser of the conference is the **Faculty of Education in Osijek**, offering this conference as the registered **European Talent Point (ETP)** in the **European Talent Support Network (ETSN)**. The conference will take place from **16th to 18th October 2019** in the beautiful historic city of **Dubrovnik**, the UNESCO World Heritage Site, on the Croatian **Adriatic** coast.

The best possible way to introduce the role that the ECHA has taken in contemporary gifted education is to have the Faculty of Education as the organiser of the first ECHA conference in Croatia.

At the 1st Thematic ECHA Conference, we offer the most important topic in giftedness theory and education: **Creativity**. We chose to invite researchers and educators, both national and international, to engage in an intensive in-depth empirically based discussion on creativity and innovation, and how they relate to the theory and education of giftedness. Creativity and innovation are our past, current and future strengths greatly needed in overcoming numerous pressing issues that we encounter daily as developing communities. Creativity results in truth and beauty, as well as their opposites. Ability, competence, expertise, and eminence are involved in creativity, but so is wealth, power, and influence. Creativity may be sweet, refreshing, and positive. At the same time, it may leave a very sour and bitter aftertaste because creative behaviours, both negative and positive, are embedded in human nature.

The specific theme of the conference is creativity. The scientific studies of creativity, its relationship with innovation, and the established field of giftedness studies, are of crucial importance to gifted education and talent support due to the explicitly stated national and international educational objectives specifying creativity as the 21st-century skill to be fully developed in everyone. In order to more adaptively respond to the needs of our communities to educate and support their members to display socially productive creative behaviours and innovation in all walks of life, the findings on creativity must be communicated with the public. This conference aims to provide valuable thematically focused research insights on creativity as the most important topic for the education of the gifted. Three connected conference sub-themes aim to cover the broad social, individual, and educational perspective of creativity in order to provide insight and promote research, as well as best practice based innovations in gifted education. We are interested in your experiences and research regarding the initiation, implementation and continuation of creative, meaningful, and sustainable advancements in gifted education.

The social perspective of creativity research and innovation in gifted education broadly refers to research on social and environmental processes and influences on creativity. These may cover ecological, work and organizational, political, religious, familial, and all other cultural processes in given space and time that individually and jointly influence creativity and its embeddedness within evolving giftedness paradigms. The social perspective also includes

conceptualisations and provisions for the gifted, including networking and other modes of intra- and intercultural sharing of innovations.

The individual perspective of creativity research and innovation in gifted education broadly refers to research on lifelong developmental trends and influences on creativity, the cognitive, affective, motivational, and social characteristics of a creative individual as evident in their personality and cognition, health and clinical research, including research on special populations, as well as the evaluation and measurement, identification, enhancement, and fulfilment of the creative potential.

The educational perspective of creativity research and innovation in gifted education broadly refers to research on learning environments and psychoeducational processes and their influences on creativity via theoretical and administrative gifted education models and practices. The theory of creativity and the nature of creativity, and its relationship with giftedness and gifted education invite us to present research on curricular creation and reform, curriculum planning and development, including content, process, and product modifications, as well as administrative educational procedures of grouping, enrichment, and the acceleration in gifted education, and how they relate to creativity.

It is emerging as a common insight that if we are to preserve the biosphere we have to act now without delay. We have to create more efficiently, with much more modesty, and in full respect of all our resources, including human resources.

The **sun-grown mandarins** in the Dubrovnik area, as an **analogy for creativity and its complex nature**, the conference theme of our first thematic conference, will be ripe for the scheduled conference in 2019, waiting for us to share in the sweet harvest of creativity research, knowledge, know-how, and wisdom, as resources. Though some of that wisdom may be bitter, it will point to much needed positive creativity. The conference that we cordially invite you to attend as an attendee, and to take part in as an author, aims to offer you the opportunity to bring back to your community positive and fresh, innovative approaches to be used in gifted education, for the benefit of us all.

With gratitude for supporting our shared efforts,

Yours sincerely

On behalf of the Organising Committee
Head of the Organising Committee

Conference Chair, **Željko Rački**, Ph.D.
ECHA Specialist in Gifted Education
ECHA National Correspondent

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KEYNOTES

CULTIVATING CREATIVITY, EXPANDING THE POSSIBLE: SOCIOCULTURAL REFLECTIONS

Vlad Glăveanu, Webster University Geneva, Switzerland, glaveanu@webster.ch

Abstract

The proposition I put forward in this talk is that creativity, when conceived from a sociocultural standpoint, has less to do with traditional criteria of novelty, originality, and appropriateness, and much more with the ideas of difference, re-positioning, and perspective taking. At the heart of creativity as a psychosocial and cultural phenomenon is our ability to learn from, reflect on and make use of our interactions with other people and their perspectives. This 'dialogue of perspectives', characteristic for the creative process, opens up new spaces of possibility for our thinking and action in the world and, as such, educating creativity necessarily involves expanding the interactive space of possibility enabled by our social existence. In this talk, I start by outlining the conceptual bases of the sociocultural approach – grounded in the work of Mead, Vygotsky, Bakhtin and Bruner – and consider at length its implications for education. If to create means to engage with what is possible by becoming aware of different perspectives, placing them in dialogue with each other, and exploring the emergent outcomes of this dialogue, then education for creativity requires us to develop what I call here 'pedagogies of the possible'. It is these pedagogies, I argue, that shift our focus, as educators, from individuals to interactions, from achievement to possibility, and from what *is* to what *could be* in the classroom.

Keywords: creativity, sociocultural, possibility, education, pedagogies of the possible

Vlad Glăveanu, Ph.D. is Associate Professor and Head of the Department of Psychology and Professional Counseling at Webster University Geneva, Switzerland. He received his Ph.D. in Social Psychology from the London School of Economics, UK. His work develops the cultural psychology of creativity and has been published in over 100 articles and book chapters. His books include: *Thinking through creativity and culture* (Transaction, 2014), *Distributed creativity* (Springer, 2014), *Rethinking creativity* (Routledge, 2014, co-edited), and *Creativity: A new vocabulary* (Palgrave, 2016, co-edited). He is editor/co-editor of several handbooks, among them the *Palgrave Handbook of Creativity and Culture Research* (Palgrave, 2016), the *Handbook of Imagination and Culture* (Oxford University Press, 2017, co-edited with Tania Zittoun), and the *Cambridge Handbook of Creativity Across Disciplines* (Cambridge University Press, 2017, co-edited with James Kaufman and John Baer). Vlad Glăveanu is co-editing the book series *Creativity and Culture* for Palgrave and is the Editor of *Europe's Journal of Psychology*, an open access journal published by PsychOpen.

FROM DARING TO ACHIEVING: INDIVIDUAL-LEVEL PROCESSES IN CREATIVITY

Zorana Ivčević Pringle, Yale Center for Emotional Intelligence

Abstract

Creativity matters. Creativity, complex problem solving, and cognitive flexibility are all in the top ten workplace skills of the World Economic Forum. Creativity-related skills are increasingly important in era of automation and rising artificial intelligence. From a motivational standpoint, creativity is also important because it makes persistence more likely when encountering challenges (Hoffmann, Ivcevic, Zamora, & Ebert, 2016). In this talk, I describe two key processes that enable creativity, the first related to a decision to be creative and the second concerning transforming creative ideas into actions and creative outcomes. When facing a task, people effectively ask whether the benefits of doing that are greater than the risks. I describe our studies with students that show three kinds of attitudes towards creativity and how they predict motivation and creative behavior: anticipating negative consequences of creativity (social risk), behavioral focus on preventing negative consequences (better be safe than sorry), and welcoming creativity and creative identity. The challenge for the future is shifting the attitudes from those of apprehension to curiosity. To address how creative ideas are transformed into outcomes, I describe adapting social psychological research on self-regulation to define two groups of processes (Ivcevic & Hoffmann, 2019; Ivcevic & Nusbaum, 2017): revising and re-strategizing (including regulating process expectations, adjusting approach, and embracing risk), and sustaining effort (including planning and organization strategies, persistence in the face of obstacles, and managing emotions). Future creators (and those who educate them) need to build self-regulation skills that enable successful work on often long-term projects.

Keywords: creativity, self-regulation skills, revising, sustaining effort

Zorana Ivčević Pringle, Ph.D. is a Research Scientist at the Yale Center for Emotional Intelligence. She completed her undergraduate studies at the University of Zagreb in Croatia, received her doctorate from the University of New Hampshire, and did her postdoctoral work at the Interpersonal Communication and Interaction laboratory at Tufts University. Dr. Ivčević's research interests center around the role of emotion and self-regulation in creativity across domains, as well as self-expression in different contexts of everyday life. She collaborated with colleagues from Denmark, Spain, China, and Croatia and published her research in journals such as *Personality and Social Psychology Bulletin*, *Journal of Personality*, *Applied Cognitive Psychology*, *Creativity Research Journal*, *Journal of Creative Behavior* and others. She is Associate Editor of *Psychology of Aesthetics, Creativity, and the Arts* and the *International Journal of Creativity and Problem Solving*. Dr. Ivčević received the Award for Excellence in Research from the Mensa Education and Research Foundation for her research on emotional intelligence an emotional creativity, as well as the Berlyne Award for Outstanding Early Career Achievement in psychology of aesthetics, creativity, and the arts from Division 10 of the American Psychological Association.

INCREASING STUDENT CREATIVITY: RECENT ADVANCES AND FUTURE DIRECTIONS (CREATIVITY CONFUSES ME: PERPLEXING QUESTIONS ABOUT A COMPLEX CONSTRUCT)

Jonathan A. Plucker, Johns Hopkins University, U.S.A., jplucker@jhu.edu

Abstract

The economy and culture of the 21st century has a tremendous need for creative talent. Whether one works in manufacturing, government, education, or the service industry, there is always a shortage of creatively talented people. Research on creativity, especially on how to foster and assess it, has grown tremendously over the past 30 years, especially in the areas of theory development, assessment, and interventions. Yet this work has also led to new challenges, first among them why all this work has had arguably limited impact on practice. During this talk, I will review these recent developments, identify the “major unknowns” in need of additional attention, and propose a path forward for the field.

Keywords: creativity, innovation, theory, assessment, educational interventions

Jonathan Plucker, Ph.D. is the Julian C. Stanley Endowed Professor of Talent Development at Johns Hopkins University, where he works in the Center for Talented Youth and School of Education. His research examines creativity and intelligence, education policy, and talent development, with over 200 publications to his credit and over \$40 million in external funding to support his work. Recent books include *Excellence Gaps in Education* with Scott Peters (Harvard Ed Press), *Intelligence 101* with Amber Esping (Springer), *Creativity and Innovation* (Prufrock), and *Toward a More Perfect Psychology* with Matt Makel (APA). He is a Fellow of the American Psychological Association, Association for Psychological Science, American Educational Research Association, and American Association for the Advancement of Science. Prof. Plucker is the recipient of the 2012 Arnheim Award for Outstanding Achievement from APA and 2013 Distinguished Scholar Award from the National Association for Gifted Children. He is president-elect of NAGC.

ABSTRACTS

Participation options

The official language of the conference was **English**. All abstracts were submitted in English, and all presentations were given in English.

Authors had these interactive and extensive participation options to choose from:

Poster presentation 

Paper presentation 

Workshop 

Plenum 

These symbols are used to denote the attendee participation option chosen for the submitted abstracts.

Creativity Research and Innovation in Gifted Education:
Social Perspective



THE DYNAMICS OF CREATIVE CAREER BUILDING OF GIFTED MATHEMATICIANS

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Abstract

Despite the fact that research in the field frequently emphasizes how much gifted youth career building is important in certain fields of knowledge, we rarely investigate its long term dynamic processes in real life. In a retrospective case study research (MATEHETSZ EFOP 3.2.1-15-2016-00001) I investigated the social dynamics of a group of exceptional Hungarian young talents in mathematics who as classmates graduated from secondary education more than 50 years ago as the very first special class in Hungary for mathematically gifted students. As part of the semi-structured interviews I carried out with these participants (=26), I asked them about their career choices after their secondary (and later their higher) education and during their lives, and also about their motivation in making their decisions in this respect. The results show a clear tendency of the former classmates towards diverging from each other career-wise. Three exceptional students of the former class – all of them won gold medals at the International Mathematical Olympiads in the 1960-ies – chose mathematics as their field of profession. However, one of them became an internationally acclaimed researcher in mathematics, the other former champion of the class became by far the most influential gifted educator in Hungary in mathematics in the second half of the 20th-21st century, while the third former classmate became a chief official of mathematics competitions, serving in the highest possible international position in this field for a long time. Also, all the other former classmates of this class who became professional mathematicians chose very different fields in mathematics. This pattern shows a creative dynamic process of developing a professional career among the former classmates who competed with each other in the same field, while in the long run they hoped to find the routes to constructive cooperation with each other as well.

Keywords: creative career building, mathematically gifted students, field choices, constructive competition, retrospective case study



T2I - TALENT, INTELLIGENCE, INNOVATION: THE EXPERIMENTAL PROTOCOL STEM PROFILE

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Abstract

The T2i is described as an experimental protocol for gifted and talented students in public school districts. Through its innovative approach, students with high potential in STEM profile, strategic intelligence profile, and those who also show a superior capacity for innovation, interests in sciences, and perseverance are easily identified. Literature indicates that there is a gap in identification of talented and gifted students in gifted programs because of biases. The counterbalance tool for ethnic, linguistic, and gender biases modulates the students' socio-economic situations as well as those already clinically diagnosed as Twice Exceptional. Combining the weighting of standard assessments with selected scientific predictors make the T2i unique. The results are personalized. A different calibration is given to the various sub-tests and in accordance with the student's individual profile. The concept of giftedness protocol measures among others three basic skills: factor (G) natural abilities, section intelligence (GI) and creative (GC). Sub-tests were chosen from a variety of well-known intelligence tests. Furthermore, we used a creativity test, an experimental checklist where we grouped motivation, perseverance, and STEM interests. This protocol works particularly well, since it meets the needs and realities for minimal budgetary and professional investment, with fast access to results, and quick group testing execution. It is quite easy to translate, to adapt to another culture or to those who do not use their native tongue.

Keywords: identification, STEM, protocol, public school, giftedness



GREEK TEACHERS' ATTITUDES AND VALUES TOWARDS THE NOMINATION OF HIGH ABILITY STUDENTS: STUDENTS' POTENTIAL AND RESOURCES AT SCHOOL

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Abstract

This research is “inspired by” the “Actiotope Model” as a holistic approach towards students’ potential of abilities. Three tools were administered to teachers and students of Greek state schools: The Questionnaire of Educational and Learning Capital - QELC (Ziegler & Baker, 2013), administered to 384 primary school students of 10-12 years of age. A questionnaire of attitudes and values towards the gifted education, complemented by the second questionnaire, both created for this study purposes, were completed by 27 primary school teachers who volunteered to participate and nominated 27 students with high potential in their classes. The second questionnaire included four sets of questions that were based on previous research studies in Greece and a number of questions that were inspired by Renzulli’s scales for rating the characteristics of superior students. Cronbach’s α for teachers’ attitudes and their reports on students’ general and specific characteristics, special skills and abilities, and conduct in class ranged from .74 to .83; for the QELC students’ scale α was .92 and for the ten subscales α ranged from .68-.80. The findings present a holistic view of both teachers’ judgments and attitudes towards students with high potential, and students’ reports about the offered resources for education and learning, in state schools. The results are discussed in relation to the teachers’ prior experience, age, gender, and school area, along with the nomination process of student grouping; they are also aimed towards providing enriching resources for all the Greek students, and for those with high potential.

Keywords: Educational and Learning Capital, student potential, teacher nomination

*Note. Did not attend the conference.



ON THE RELATIONSHIP BETWEEN PARENTING STYLES AND CREATIVE POTENTIAL

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Abstract

Creativity is an essential requirement for personal and global socio-economic growth. Rapid technological evolution and the search for competitive advantages, both vital elements for the world's economic future, demands that individuals be able to think and produce creatively. Hence, stimulating creative abilities in children and adults is becoming an important objective for educational and professional activities. The style of parenting has the key role in the development of creativity. Parenting style refers to the child-rearing practices and interactive behaviours implemented by parents. It is fundamentally related to the development of creative potential as it shapes children's understanding of their environment, enables them to construct a mindset, personal qualities, traits and skills. Parenting styles can be either authoritative, permissive or authoritarian in nature. Authoritative parents favour independence, open communication and encourage autonomy while setting clear standards. Permissive parents have higher tolerance for children's impulses and allow a high degree of self-regulation. The authoritarian style involves directive parental behaviors, restrictions and rejection behaviours. Recent studies on the relationship between parenting style and creativity display controversial and mixed findings. 57 children (ages 6-11) and their parents participated in the study. Self-report instruments and EPoC were used to evaluate parenting styles and creative potential, respectively. The preliminary results demonstrate a relationship between different parenting styles and children's creative potential. Full results and implications for enhancing creative family environments will be discussed.

Keywords: creativity, creative potential, parenting style, family environment, EPoC



USING A CREATIVITY TEST STANDARDIZED ON A HUNGARIAN SAMPLE TO IDENTIFY HIGH ABILITIES IN SOCIALLY DISADVANTAGED LEARNERS

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Abstract

Creativity is an important characteristic of the diversity of giftedness that contains general and domain specific manifestations (An, Runco, 2016). A relevant method of gifted identification based on several instruments is using tests to measure creative abilities (Geiser et al., 2015). Although there is no consensus about the nature of the connection between creativity and divergent thinking, divergent thinking is an important indicator of creative abilities (Runco, Acar, 2012; Said-Metwaly et al., 2017). Although not all learners identified as divergent thinkers will perform creative achievement permanently, if we fail to identify these abilities, we give up on potentially gifted learners whose motivational, self-esteem issues or social disadvantages discourage them from completing creative products (Gagné, 2004). To assess learners' creative abilities with tests, we utilized the principles of the Wallach-Kogan test (Lau, Cheung, 2010) to create a test battery of new subtests. The new test, MONDALK, contains 3 subtests, 2 with verbal, 1 with figural stimuli that were standardized in Hungary on a representative sample of 1200 students between the ages of 7 and 18. In our presentation we analyze the results of a subsample of 142 socially disadvantaged students and discuss if there is a statistically significant difference between the groups of socially disadvantaged and non-disadvantaged learners (Rimm et al, 2008). We examine whether socially disadvantaged students perform better on a figural subtest compared to the verbal ones as suggested in literature, and whether there are subtests that are not biased against students in special situations.

Keywords: divergent thinking, creativity test, high abilities, achievement, socially disadvantaged learners

*Note. Did not attend the conference.



YOUNG TALENTED MUSICIANS UNDER PRESSURE – EMPIRICAL FINDINGS ABOUT CHRONIC STRESS OF HIGHLY MUSICALLY GIFTED ADOLESCENTS

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Abstract

Highly musically gifted children and adolescents in Germany have the possibility – after passing the admission exam – to study music at the Pre-College which runs parallel to their attendance of a regular public school. These young people have to cope not only with this double liability to school and music university (often resulting in time pressure, schedule conflicts, etc.), but also with social stress concerning teachers, family members or peers. Research on chronic stress of young highly gifted musicians is scarce. An empirical study was carried out to identify chronic stressors of young talented musicians considering their social environment. Qualitative and quantitative data were selected from 22 young musical talents (range: 12-19 years; $M=17$; female: $n=12$) and from their significant others, such as parents ($n=12$), siblings ($n=7$) and also music- and school-teachers ($n=6$). Young talented musicians manage an eleven-hour working day (school education, homework, plus deliberate practice), and struggle with bullying by their schoolmates because of their dedication to classical music, their excellent music performances and their outstanding school achievements. Parents are their most important social resources in coping with these stressors. On the one hand, highly musically gifted adolescents show a high stress level which is associated to physical and psychological problems. On the other hand, they receive strong support from their families and experience a high quality of life. The results are discussed with regard to the education of highly gifted young musicians, taking into account their individual needs and health prevention.

Keywords: musical talent, chronic stress, family, social support, musical development

Creativity Research and Innovation in Gifted Education:
Individual Perspective



CREATIVITY AND DECISION MAKING IN GIFTED STUDENTS

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Abstract

Creativity is the ability to re-experience mental representations, the basis of intuitive thinking when constructing images prior to the elaboration of an action plan (Artola & Barraca, 2004). Creativity could be related to some orbitofrontal functions that govern decision making: inhibitory control, risk-benefit evaluation and acceptance of limits-rules, given that they prepare the organism for possible scenarios (Broche-Pérez, Herrera and Omar-Martínez, 2016; Flores, Ostrosky and Lozano, 2014). The question arises about the relationship between creativity and decision making to understand the needs of gifted students. The objective was to analyze the relationship between creativity and decision making in gifted students. A cross-sectional descriptive study was carried out with gifted students (IQ=133) from 8 to 10 years old (n=25). The instruments were the Creative imagination test PIC (Artola and Barraca, 2004) and sub-tests of battery of executive functions and frontal lobes BANFE-2 (Flores, Ostrosky and Lozano, 2014). A Spearman correlation analysis was made between normalized scores of BANFE-2 and centiles of PIC. There were moderate correlations between creative/narrative-flexibility with decision-making/risk-percentage ($r=0.432$, $p\leq 0.05$), and with decision-making/response-effectiveness ($r=0.426$, $p\leq 0.05$); between creativity-graphic/shadow-color with decision-making/response-effectiveness ($r=0.452$, $p\leq 0.05$); and with inhibition ($r=-0.673$, $p\leq 0.01$); moderate negative correlations between inhibition with creativity-graphic/title ($r=-0.570$, $p\leq 0.05$); and with general-creativity-graph ($r=-0.489$, $p\leq 0.05$). Creativity in students with high intellectual capacity is favored by the relationship with orbitofrontal functions. The analysis of risk situations and the effective decision making increase the narrative creation, and a diminished inhibition allows the creative graphic production.

Keywords: creativity, decision making, inhibition, giftedness, limits-rules



CHILD PRODIGIES AND CREATIVITY: EARLY AND CURRENT PERSPECTIVES

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Abstract

This paper analyses the meaning of creativity in research on child prodigies, and explores the link between childhood and adulthood creative giftedness. Taking a historical perspective, it begins investigating early research on prodigies, especially in France. While most studies on gifted children were based on intelligence, prodigies allowed for reflections that went beyond intellectual abilities and where creativity played an important part. While studying musical and mathematical prodigies, Binet (1894) and Richet (1900) associated creativity to invention, originality and improvisational abilities. Other scientists provided similar definitions (Révész, 1925). Prodigies were considered brilliant performers whose creative potential was rarely fulfilled. Creativity appeared as a feature to distinguish a child prodigy from an adult genius. Later research has shed further light into the link between being a prodigy and becoming an outstanding adult creator, or the “Big-C” of creativity (Feldman & Goldsmith, 1991; Winner, 2014). Training, family and differences in the prodigies’ domains are some of the factors involved (Howe, 1999). Shavinina (2009) has provided another explanation using the “sensitive periods” approach. Looking at the prodigies’ education and mental traits, early and contemporary research helped define the importance of identifying and nurturing the creative potential. This paper will compare such findings to detect continuities in the research, and show how those inform us about the meaning of creativity in raising extremely gifted children. This research is funded by the the Marie Curie project ChildPro (793654).

Keywords: child prodigies, history of giftedness, creative potential, genius, creative giftedness



TALENTS, TEACHERS' ATTITUDES AND ENTHUSIASM

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Abstract

“TAFF - Finding and Supporting Talents at the Bavarian Middle School” is a 5-year-project. The so-called “middle school” is the lower secondary school in the tripartite school system of Bavaria/Germany and provides different tracks from 5th to 9th and 5th to 10th grade. TAFF provides a huge variety of initiatives and programs. Some concentrate on the development of realistic-optimistic self-concepts and self-efficacy-beliefs. Others focus on special learning arrangements and the opportunity of providing experiences in fields to which the students had no or little access before. Some measures are implemented as a variety of optional special courses, some concentrate on the improvement of obligatory classes; some are special courses for gifted students. Some projects are finalized as a musical or theatre performance, a talent show or a sports competition. In 2010 Fredricks, Alfeld & Eccles found that the passions of gifted and talented students concentrated more often on non-academic fields like sports and arts than on academic fields. They also made suggestions for increasing students' motivation at schools. The experiences in our project were analysed by the evaluation team of the University of Nuremberg (Valentin/Mahling/Eberle 2018). In view our findings in TAFF, teachers' enthusiasm for the subject of teaching plays a major role in the success of talent development. Teachers' enthusiasm impacts the number of students who regard themselves as gifted and the number of students who find or develop new competences. The results of other research (Barandun 2018; Frenzel / Götz / Pekrun 2008; Keller / Neumann / Fischer 2013; Becker / Götz / Morger / Ranellucci 2014) can be further compared with our findings. Moreover, the analysis of students' and teachers' quantitative surveys showed that both expressly dealing with what being gifted means as well as explicitly identifying specific strengths and talents among students is crucial.

Keywords: attitudes, enthusiasm, talents, strengths, teachers

*Note. Did not attend the conference.



ASSESSMENT OF CHILDREN'S CREATIVE POTENTIAL IN VISUAL AND LITERARY DOMAINS WITHIN THE CROATIAN SOCIO-CULTURAL CONTEXT

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Abstract

Several measures of creativity employ different figural-visual-graphic or verbal-literary tasks, usually within the framework of divergent thinking that Guilford defined as the ability to envision multiple solutions to a problem. Convergent thinking was conceptualised as the tendency to narrow all options to a single solution, and this process is less frequently included in different measures of creativity. In the Guilford Test of Creative Thinking, nine subtests require verbal responses, and four make use of figural content. In Torrance Tests of Creative Thinking, participants draw figures or write questions, possible consequences and different uses for objects. Seldomly, measures provide a balanced approach to the assessment of exploratory-divergent and integrative-convergent thinking across figural-graphic and verbal-literary domains. The main goal of this work is to present an effort to adapt and standardise the measure that takes such a balanced approach with somewhat different operationalisations of classical divergent-convergent thinking constructs. EPoC test of potential creativity in the graphic and verbal domain of creative expression is in the process of adaptation for use with Croatian preschool and elementary school children. The results were obtained from 450 students (4-14 years; 53.33% female) mainly from Croatian schools in Istria and Primorsko-goranska County. Because the normative sample has not been acquired yet, the descriptive statistics on raw scores and standardised T-scores are presented as indicators of exploratory-divergent thinking, integrative-convergent thinking, graphic, verbal and overall creativity. The partializing effect of the participants' age on the relationship between such coefficients is presented, and some evidence of replicability of the factor structure for this measure of potential creativity is provided.

Keywords: potential creativity, EPoC, children, figural-graphic domain, literary-verbal domain

**Note.* Did not attend the conference.



DISCOVERING “MINI-C” CREATIVITY THROUGH PERSONAL INSIGHT JOURNALS

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Abstract

Kaufman and Beghetto (2009) described a life span of creativity through their “Four C Model of Creativity.” Their conceptual framework addressed limitations of the dichotomous “Big C/little c” model by including two additional levels of creativity: a personal and development creativity, or “mini-c,” as less than “little c” creativity, and a “Pro-c” concept as greater than little c creativity but less than “Big C” creativity. This study explored the identification, development, and appreciation of mini-c creativity through a series of three biweekly insight journals written by 25 gifted facilitators and secondary level teachers during a graduate level Creative Teaching and Learning class. Journal One asked students to explore their creative roots through the influences of individuals, events and/or ideas. In Journal Two, students recorded patterns and trends observed in the creative productivity. In Journal Three, they evaluated creative strengths related to specific talent domains. While journaling students read textbook assignments about assessing creativity and creativity training during Journal One; making sense of creativity and the creative process in Journal Two; and encouraging and enhancing creativity for Journal Three. The study analysed three biweekly journals for indications, expressions, and acknowledgments of mini-c creativity in their personal and/or professional lives throughout the journaling process. The study noted if students (a) identified mini-c in their journals, (b) developed awareness of mini-c productivity, and (c) increased appreciation of mini-c in specific domain(s). Implications from the study found that teachers who identify, develop, and appreciate mini-c creativity seemed better equipped to promote creativity in their classrooms.

Keywords: creativity, inspiration, illumination, imagery, journaling



ASSESSING CREATIVE GIFTEDNESS WITH EPoC

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Abstract

This workshop will present a battery to assess creative potential in children and adolescents. Research over the past 25 years has led to the EPoC assessment – Evaluation of Potential for Creativity (Lubart, Besançon & Barbot, 2011). EPoC measures the ability to engage two main processes involved in creative thinking, divergent-exploratory (DE) and convergent-integrative (CI) thinking. The measure is organized according to a domain, with DE and CI tasks concerning visual-graphic, verbal-literary, social, mathematics, science, music, and body-action domains. An overview of the theoretical approach and the assessment procedures will be presented. Workshop participants will experience hands-on activities with items from the battery to illustrate testing and scoring. Key psychometric results with EPoC, and research relating to intelligence scores, school grades and creativity training will be presented. EPoC was originally conceived in French, and versions in several other languages are under development (Arabic, Chinese, Croatian, English, German, Polish, Portuguese, Slovenian, Turkish, etc.). EPoC provides a measure of creative potential for children and adolescents, informing how a person is situated with respect to others as well as their personal profile across assessment domains. It can be useful for detection of creative potential (including detection of creative giftedness), as an indicator for guidance counselling, as well as a pre-test/ post-test measure of the development of creativity through educational activities.

Keywords: creative potential, EPoC, assessment, identification, profile



MEASURING CREATIVE POTENTIAL IN CROATIA AND SLOVENIA

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Abstract

This plenum aims to discuss issues in measuring creative potential in students in Croatia and Slovenia. It will present an outline of the initial activities on the Croatian adaptation of EPoC test, and the organised workshops that followed the test adaptation. Darko Lončarić will present the organisational framework for data collection used in Croatia and provide brief information on the preliminary results. The test was applied in different creative domains: Graphic and Verbal domain (450 children between 5 to 14 years of age), Science domain (172 children between 6 to 13 years of age), and Social domain (136 children between ages 6-13). Darko Lončarić will also present the current stage and prospects for the adaptation of the Mathematical creativity test with an initiative for further regional and international collaboration. Jasna Arrigoni will present the activities of standardization of the potential creativity test of EPoC launched in Croatia, organized by the Center for Gifted Children, Rijeka. She will discuss various stages in the process, from a publishing contract, organizing teacher education in different cities, popularizing tests and presentations to professional conferences. Mojca Jurišević will present individual Differences in Children's Creativity Measured by the EPoC Test: Empirical Findings from the Slovenian Educational Context, acknowledging the collaboration with these colleagues: Nataša Fabjančič, Tatjana Grad Grošelj, Manca Kavčič, Nada Liplin, Nina Mesner, Anja Milekšič, Judita Slabe, Božena Stritih, Nena Weithauser Plesničar, Maruša Zabukovec, Polona Zupan, Urška Žerak, and Todd Lubart. The presentation is based on the validation study performed with the EPoC test (form A) in eight Slovenian elementary schools and one preschool institution. Specifically, the sample included 723 children aged 5 to 12 in the Slovenian educational context ($M_{age} = 9$, $SD_{age} = 1.8$; 51% females), who had to solve eight tasks in two creativity domains, the graphic-artistic and verbal-literary, including two thinking processes, convergent-integrative and divergent-exploratory. The results show that EPoC is invariant by sex. However, the differences related to age and identified giftedness were found. Namely, the older students showed statistically and practically more creative solutions than the younger ones on integrative tasks ($t_{IG}(704) = -8.53$, $p_{IG} < 0.001$, $d_{IG} = 0.64$; $t_{IV}(721) = -9.33$, $p_{IV} < 0.001$, $d_{IV} = 0.69$), while on divergent tasks their answers were similar. Furthermore, the identified gifted students performed better on the integrative tasks ($t_{IG}(360) = 2.57$, $p_{IG} = 0.01$, $d_{IG} = 0.38$; $t_{IV}(360) = 3.15$, $p_{IV} = 0.002$, $d_{IV} = 0.46$) as well as on the divergent-graphic tasks ($t_{DG}(360) = 2.86$, $p_{DG} = 0.005$, $d_{DG} = 0.43$), compared to their peers. On the other hand, the answers on divergent-verbal tasks were similar regardless of giftedness identification. The results will be discussed from the developmental perspective in the framework of Slovenian educational context.

Keywords: multifaceted creativity, creative potential, EPoC test, individual differences

**Note.* Did not attend the conference.

Creativity Research and Innovation in Gifted Education
Educational Perspective



ENCOURAGING CREATIVITY THROUGH MAKERSPACES

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Abstract

Community makerspaces, fablabs or hackerspaces have grown up around the world to provide resources and tools, supporting community members as they gather to create. Makerspaces have begun moving from the community into schools in the U.S. In many American schools, the focus on testing in reading and math has guided how teachers spend their days. In some cases, the prescribed curriculum allows little time spent on other subjects. A makerspace is one of the few places in a school where students can explore their own interests and engage in activities that encourage curiosity and creative problem solving. Librarians have begun creating makerspaces and maker programs to support student exploration, tinkering, and innovation, going beyond their traditional roles supporting reading and information literacy skills. How can concepts of gifted education and research on creativity be used to create an environment where children are free to delve into topics of interest in greater depth and creatively solve problems that they discover? What skills do makerspace facilitators need to support this? This poster will examine work done in a class for school librarians in training as they create this environment. It will look at how they can encourage creative thinking by moving beyond projects and empowering students to control their learning process.

Keywords: makerspaces, creative thinking, libraries, schools



A CASE STUDY OF OPEN-INQUIRY PROJECTS THAT EMPHASIZE PROBLEM FINDING FOR SCIENCE-GIFTED STUDENTS (SGS)

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Abstract

The science education in Korea is mainly focused on teaching how to solve a problem in a scientific manner. However, as Einstein said, finding a problem is often more difficult and essential than its solution. Even the SGS, having excellent problem-solving capabilities, have difficulties in the process of discovering a problem creatively, and most of them suggest only conventional and typical inquiry problems. How can the SGS be helped to address original and creative problems? This study reviews the process of scientific inquiry projects carried out by the students who participated in the chemistry mentorship program of the Science Education Institute for the Gifted at the Seoul National University for three years. Our study, spanning from the session “Discovery of Everyday Life” to winning the award at the national contest, summarizes the features of the projects, and proposes a new direction for open-inquiry education for the SGS. The results show that the SGS performed an exploratory experiment without a hypothesis in the process of reproducing discoveries that had given them the impression, “Something unusual is here.” In the exploratory process, the SGS discovered various “interesting” problems divergently. The teachers who were more familiar with the culture and language of the sciences guided the students towards choosing the problem that was academically significant for further exploration. In addition, the continued interaction between the divergent observation by the students and the convergent guidance by the teachers made the exploration more original and creative.

Keywords: gifted education, mentorship program, open-inquiry, problem finding, creativity



STUDENTS' VIEWS ON INTELLIGENCE : IMPACT ON THEIR ATTITUDES IN SCHOOL

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Abstract

Early adolescent years are a very critical stage of individuals' development because many changes happen during this time, and the way of dealing with these changes has major implications for their academic futures (Blackwell, Trzensniewski, & Dweck, 2007). To understand the psychological mechanisms that allow students to overcome challenges that they face, researchers have studied beliefs about the nature of intelligence. Regression was conducted to explore relationships between predictors and dependent variables. The results of the study indicated that of the multiple regression analysis for predicting attitude toward school, academic self-perceptions, attitude toward teachers and classes, goal valuation, and motivation and self-regulation from students' implicit beliefs about their intelligence factors were found to be statistically significant ($R = .29$ and $R^2 = .08$, $R = .42$ and $R^2 = .18$, $R = .25$ and $R^2 = .06$, $R = .30$ and $R^2 = .09$, $R = .29$ and $R^2 = .08$). That is, when implicit beliefs about intelligence were used as predictors, about 8%, 18%, 6%, 9%, and 8% of the variance in the students' attitude in school could be predicted. This poster presentation will examine the role of beliefs on their intelligence in the context of implicit theories on shaping gifted students' attitudes in schools and discuss the implications of the results for counselors, educators, and parents.

Keywords: gifted students, attitudes in school, beliefs on intelligence, early adolescence, psychology of gifted students



EDUCATIONAL NEUROSCIENCE AND CREATIVITY

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Abstract

What happens in the brain during creative thinking and creative behaviour? The neuroscience of creativity includes the neural and cognitive bases of creative thinking and related constructs, and for many scholars it also includes applications to education, health, and other areas of human wellbeing (Vartanian et al., 2016; Society for the Neuroscience of Creativity, <https://tsfnc.org>). This proposed talk will focus on the educational applications of neuroscience research to the identification and nurturing of creative behaviour, with an emphasis on how this field connects with gifted education. Neuroimaging studies provide fewer clear implications for creativity than they do for intelligence (Jaušovec & Jaušovec, 2011). The purpose of this project is to organize the research thematically: not to provide a systematic review of the technical aspects of neuroscience research on creativity, such as locus and speed of processing, but to discuss its implications for practitioners in a way that distinguishes research with near-future applicability from research that has interesting long-term potential for practice, but no supportable immediate application. It combines the individual developmental perspective on creativity with the educational perspective. The over-application of brain research to education practice is a well-documented problem (Fischer, 2009). However, there are neuroscience implications for the motivation to engage in creative acts, and there is global interest in educational neuroscience and creativity. This presentation will provide some direction for practitioners, but will also suggest practitioner-generated research questions for neuroscientists.

Keywords: creativity, neuroscience, motivation, cognition, education



CREATIVE POTENTIAL OF ARTISTICALLY GIFTED CHILDREN

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Abstract

Art giftedness is associated with abilities in art, motivation, aesthetic relation to the world, authorial position, and creativity. To test the latter, the Test for Creative Thinking and Drawing Production (TCT-DP) was applied as an additional tool to identify creative potentials as well as to recognize individuals with undeveloped abilities during their enrolment to Moscow Academic Art College in May 2018 and half a year after in November 2018. 50 children of 9 – 12 years of age participated in the study. 17 out of 50 participated in both sessions (in May and November). Urban TCT-DP was performed according to the standard instructions. Among 17 participants, 2 participants improved their results from average to above average, 9 participants impaired their results from average to below average and from extremely above average to average or above average, and 6 participants remained within the same average status. The study showed that the majority of the children enrolled in 5th form impaired their results, although 6 kept the same results in both sessions. The results show average abilities to creative and non-stereotypical thinking. Further research on the abilities of the participants is necessary to see the trajectories of creativity development. The research will be combined with other creativity tests. In parallel, the achievements in main art disciplines and teacher observation of the children will be considered.

Keywords: artistic creativity, gifted children, creative potential



THE ATTITUDES OF PRIMARY EDUCATION STUDENTS TOWARDS PROMOTING CREATIVITY WHILE WORKING WITH GIFTED PUPILS IN CROATIA AND SLOVENIA

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Abstract

A creative teacher is a central factor in creating a creative teaching and educational setting. A teacher with positive attitudes toward giftedness and creativity helps to ensure a positive and supportive environment for gifted students in school. It is important to encourage primary education students to do creative work with gifted pupils so that in the future they can become teachers who will encourage creativeness in everyday classroom communication. The aim of this study was to examine the attitudes of primary education students in Croatia and Slovenia towards gifted students, their knowledge on certain subjects of giftedness and encouraging creativity in teaching for gifted pupils, with a special emphasis on giftedness in natural sciences. 198 students participated in the research. The students' attitudes were assessed by using (adapted and validated) Gagné and Nadeau questionnaire (1991) about gifted students and their education. The results of the research showed that students from Croatia and Slovenia share the same positive attitudes towards giftedness, that during their studies they did not get enough information about gifted students and they did not have strong attitudes towards the approaches on encouraging creativity among the gifted. There were no differences in the knowledge acquired during their studies and attitudes towards giftedness in promoting creativity with regard to the study program. The obtained results pointed to the need for more intensive education of primary education students in Croatia and Slovenia in the field of natural giftedness and creativity to enable them to identify and stimulate creative work through different forms of work at school.

Keywords: gifted students, creativity, attitudes, natural giftedness, primary education students

*Note. Did not attend the conference.



TALENT DEVELOPMENT IN HUNGARIAN SCHOOLS

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Abstract

New Generation Centre made a large-scale research among 10% of Hungarian schools in the autumn of 2017. Its goal was to get a comprehensive picture of the school conditions and the results of talent management. We asked the headmasters and teachers to fill in the questionnaires, and the research was supplemented with a parental sample as well. According to the statements of the headmasters, the majority of schools organize extracurricular lessons for talents in the fields of sports, mathematics, foreign languages, fine arts and natural sciences regularly. Out of these, sport is the area where more support is needed. In order to sum up the answers of the respondents, we will highlight three important statements. First of all, there are fewer extracurricular lessons in schools with a higher proportion of students with social disadvantages, and in schools without trained talent fostering teachers. Secondly, the overload of teachers and students is a bigger problem in schools than the lack of equipment or the non-efficient infrastructure. Finally, the teachers consider it an effective solution to detect the best students, offering them a personalized, separate and supporting environment necessary for their development, and often do extra work for this purpose too. Talent management is impacted by traditional attitudes with a strong connection to regular instruction. Both school officials and parents agreed on the need for collaboration between them in order to succeed at talent management. On the one hand, the special programs generate a greater degree of cooperation between parents and schools, and on the other hand, the existing processes become more conscious and manifest. In recent years, the headmasters have seen an upward trend in parent involvement, frequency of contact, and parenting awareness.

Keywords: large-scale research, human resources, tool resources, school climate, parental involvement



CREATIVITY OF STUDENTS AND CLASS TEACHERS IN EXTRACURRICULAR ACTIVITIES

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Abstract

The open curriculum of extracurricular activities enables creativity, initiative, adaptability and flexibility of students and teachers. Extracurricular activities are the area of quality and pedagogically organized students' free time, and a place for developing the entire personality of a student. Students can, via extracurricular activities, develop personal creativity, create new ideas, concepts, and solve problems. A positive pedagogical culture in extracurricular activities emphasizes the importance of upbringing in relation to education, and the function of teachers to transfer not only knowledge, but ethical values, positive values and beliefs, appreciation of students' interests and abilities, the development of independence and encouragement of students' creativity as key competencies for lifelong learning. In this way, students and creative and flexible teachers co-construct the instruction, develop multiple intelligences, social competences, talents, creativity and critical thinking. Teachers' competencies, personality and affinity are the key factors that can liberate and stimulate students' enthusiasm, encourage creativity, and self-perpetuation. By participating in the development of the curriculum of extracurricular activities, students and teachers are motivated to work, as it encourages intrinsic motivation, enthusiasm, creativity and self-realization. The aim of the paper is to present the co-construction of two extracurricular activities and the model of creative teaching and learning in the literary and robotic extracurricular activities of a Croatian elementary school in the Osijek-Baranja County. A systematic observation during the four initial school years reveals the features of creative teachers, creative teaching models and creative thinking techniques used in extracurricular activities.

Keywords: curriculum co-construction, extracurricular activities, teachers, students



THE COMPETENCES OF KINDERGARTEN TEACHERS IN THE RECOGNITION OF MUSICALLY GIFTED CHILDREN – STUDENT OPINIONS

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Abstract

Musical giftedness is a set of competencies and abilities that can be recognized early in childhood. Scholars agree that early recognition of a musically gifted child can be vital for one's further music development. Recognizing musical giftedness in a child is mostly left to parents themselves, although kindergarten teachers should be able to do it as well. The aim of our research is to determine how a child manifests his/her musical giftedness, and what set of skills is required from a kindergarten teacher in order to recognize such a child. We will also conduct a survey among the sophomore students of early and pre-school education at Josip Juraj Strossmayer University of Osijek, Faculty of Education. In this survey, we will examine what students think is a musically gifted child, what competencies should a kindergarten teacher have, in order to recognize a musically gifted child, and do they find themselves competent enough to recognize such a child. This paper will present the findings and suggest improvements in education of future kindergarten teachers in order to improve their competencies in this field.

Keywords: musically gifted child, competencies of kindergarten teachers, early and preschool education, recognizing musical giftedness, student opinions

**Note.* Did not attend the conference.



THE GLAGOLIC SCRIPT AND POTENTIALLY TALENTED CHILDREN

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Abstract

The aim of this paper is to get acquainted with potentially gifted children in kindergarten with the Slavic letter Glagolitic. The method I used in this paper is the demonstration method, both verbal and visual. The children have successfully used the letters of the Glagolitic script to spell their name, noting the similarity and differences between the Latin alphabet and the Glagolitic alphabet. Potentially talented children learned how to write their name correctly, developed fine motor skills, and have acquired the development of attention, memory and operational thinking. Working with potentially gifted children lasted while their interest in the cabinet for potentially gifted children lasted.

Keywords: potential giftedness, fine motor skills, preschool education



EXPLORING DIVERSITY IN MUSICAL CREATIVITY, EXPERTISE ACQUISITION, AND MUSICAL DEVELOPMENT

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Abstract

Musical talent is a multidimensional construct, but few authors have studied the variety of musical talents (Kries, 1926; McPherson & Williamon, 2016). Gembris (2018) argues that music has changed dramatically in the course of music history, and in interaction with the emergence of new forms of musical creativity the phenotypes of musical giftedness and talents have expanded. However, the scientific conceptions of musical giftedness mostly have remained in the scientific discussion of European-Western music of the 19th century. The purpose of the present project is to describe phenomenologically new phenotypes of musical creativity and talents in the age of digital media technologies and heterogeneous music cultures based on empirical data. The methodological approach is to develop a phenomenology of musical creativity in contemporary music cultures and of the ways of acquiring musical expertise in these fields. Study I used qualitative interviews with DJs and examined the characteristics of DJ creativity and the acquisition of musical expertise in this genre (Heye, Gebert, & Gembris, 2019). The results show the emergence of new phenotypes of musical creativity, talents, skills and learning processes in the interaction with the development of new musical genres and techniques. Study II (Menze & Gembris, 2019) examined the differences in the acquisition of musical expertise between musicians in the field of classical music and pop musicians ($N = 807$). The results reveal clear differences in musical learning processes related to different musical genres. Both studies show the need to rethink and to expand previous theories of musical giftedness and talent.

Keywords: Musical creativity, musical talent, music culture, pop music

*Note. Did not attend the conference.



CREATIVITY COMPOSURE: REASONABLE IDENTIFICATION AND PRACTICES, REASONABLY APPLIED

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Abstract

The main goal of this session considers and provides resources towards the methodology and pedagogy behind the identification of creativity relative to gifted learners, evaluates the constraints associated with programming for creativity-identified gifted learners, and discusses the advancement of practices that enhance creative productivity for gifted learners. Different models of giftedness/talent evolve and coexist. Identification of gifted learners in the field of creativity should be based on methodology and pedagogy while allowing multiple pathways for identification and inclusivity. The constraints exist in the identification, practices, and programming for gifted students exhibiting high performance in the areas of creativity. The methodology included the procedures used in one school district to design the programming options for creativity identified gifted learners and the rationale for the application of specific techniques used to identify, select, process, and analyse information applied in programming options for creativity programming. The data was collected from multiple formative and summative data sets as well as qualitative teacher input. The data was then analysed to evaluate the aptitudes, interests, and readiness of creativity identified gifted learners. From this data collection and analysis, the results were used to design programming options for creativity identified gifted learners based on multiple pathways for identification and inclusivity. Creative productivity requires both volition by gifted learners and the support of that creative stamina and will power to be supported within the context of the local gifted program. For that support at the local level to be capacity building, identification, practices, and programming should establish reasonable constraints, reasonably applied with fidelity and equity.

Keywords: creativity, identification, constraints, programming, practices



THE EFFECTS OF DIDACTIC PLAY ON CREATIVE THINKING SKILLS IN GIFTED STUDENTS

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Abstract

Both creativity and creative thinking have been a topic of numerous debates and studies in the last several decades. One of the main questions was the possibility of fostering creative thinking in students in curricular and extracurricular education. This research examines the effects of creative thinking training sessions on creative thinking skills in gifted students. The participants were 117 gifted fourth grade students from 18 elementary schools in Croatia. The research was conducted in test-retest design where the participants took part in a creative thinking training program (workshops) based on didactic play and play-like activities specifically focused on ideation (fluency, flexibility, originality and elaboration of ideas). This study was part of a larger project of fostering creativity in gifted students through extracurricular activities in schools. The students were tested at the beginning and after the workshop program on 8 verbal and 8 nonverbal measures. The results showed significant differences in 4 verbal and 4 nonverbal measures. The results support previous research, therefore, it can be concluded that creative thinking training programs can improve some specific aspects of creativity.

Keywords: creativity, gifted education, creative thinking, ideation

**Note.* Did not attend the conference.



PARADIGMS OF RESEARCHING GIFTEDNESS: LEARNING AND DEVELOPMENT, CREATIVE PRACTICES

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Abstract

The key role of contemporary schools is to provide high quality education for gifted and other students. It is closely related to student-teacher interaction, and communication which places emphasis on the humanization of relationships in schools. The goals of contemporary schools are based on scientific approaches to learning and development, the optimal student development, the educational system changes, and the changing of the position of students and teachers in schools. The research by Krneta, Lj. (2010) for which the sample of 1155 students from primary and secondary schools in Bosnia and Herzegovina was used, has revealed different perceptions of students regarding their teachers' activities, now and in the future. Also, the results suggest that students' psychological characteristics (intellectual skills, emotional intelligence, motivation and general self-efficiency) and socio-experiential features, on the one hand, and the perception of their teachers' efficiency as "they are" and as they "should be", on the other hand, are important resources on differences among successful teachers. The results of the research on emotional competence of gifted and other students (Krneta & Simunić, 2014) for which the sample of 480 students from BiH and Croatia was used, have shown the good reception of the non-violent communication model among gifted and other students in schools. The enriched non-violent communication program, using representation channels, has revealed that girls compared to boys display a larger number of perceived emotions, but are more likely to ask for someone else's help in regulating them. Boys tend to sort out their piled emotions through exercise and sport. Therefore, sex was the decisive variable in recognizing, understanding and regulating emotions. The creative products of student-teacher communication shaped the process of interactive learning used for native language lessons and class meetings. Non-violent communication is an example of the creative approach in stimulating gifted and other students' emotional competence in schools.

Keywords: interactive learning, students, creative practices



MAWHIBA NATIONAL OLYMPIAD FOR SCIENTIFIC CREATIVITY TO FOSTER GIFTED STUDENTS' CREATIVITY

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Abstract

Mawhiba Foundation identifies and nurtures gifted students through well-established programs. One flagship program is the National Olympiad for Scientific Creativity (Ibdaa'), an Annual Science Competition that was established in 2011 in collaboration with the Ministry of Education. This competition is the main platform for scientific research for all gifted students in general education in Saudi Arabia and is considered the largest pre-college science competition that targets gifted students in grades 7-12. This program helps maximise students' potential, enhances research skills and encourages learning and self-development through science fairs that provide a competitive environment to challenge students' interests and abilities. It prepares students to conduct research projects that address and tackle real-world challenges. Grand awards winners are then selected to participate in the world's largest youth competition; Intel International Science and Engineering Fair. Since 2007, Mawhiba students in Intel ISEF have obtained 43 grand awards and 24 special awards in total. As a result, 8 of the students received patents for their innovative ideas and the Linear program in collaboration with MIT's Lincoln Lab and NASA, and named 3 asteroids after Mawhiba students in recognition of their efforts and excellence in research projects. This paper will describe the methodology and phases of this Annual Science Competition and the impact that it has in empowering the next generation who will make a significant contribution to humanity.

Keywords: giftedness, creativity, research, competition, science



TALENT DEVELOPMENT AND CREATIVITY IN THE CLASSROOM FRAMEWORK: FROM THEORY TO PRACTICE

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Abstract

Nowadays, unlimited access to information and communication that is free of any restrictions have incurred enormous changes to students' beliefs about school and its role in their life. As professional educators, we must direct our efforts towards creating schools that will intermittently cultivate talents and skills, and foster personal interest, in other words, promote creativity. To wit, we are proposing a school of talent. Cognitive psychology has produced a lot of descriptions and conclusions about talent development and its connection to creativity, and our task is to transform this knowledge into action. This, in turn, will provide us with the opportunity to map talents, to observe the way that they are manifested in everyday life and establish methods of recognition in order to help the general population of students take advantage of programs that develop skills, awaken talents and highlight creativity as indispensable tools for future citizens. Under this prism, Psychico College has established a club of Entrepreneurship with all students as participants, encouraging talented students to undertake special roles according to their personal talent. During the creation process from zero point to a fully functional start-up company, there are a lot of skills that must be developed, and many different talents may emerge. The outcome is assessed for its uniqueness as well as its inspiration and implementation, which are all elements of creativity. As the project is well underway, we interview, observe, and collect data to reach conclusions about the correlation between creativity, talent and other factors.

Keywords: talent development, creativity

**Note.* Did not attend the conference.



GIFTED STUDENTS' SPECIAL EDUCATIONAL NEEDS IN FRANCE: THE CASE OF MIDDLE SCHOOLS PROPOSING EDUCATIONAL PROGRAMS FOR THE GIFTED

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Abstract

In France, gifted (i.e., with an IQ ≥ 130 , cf. the criterion of the World Health Organization) students represent approximately 2.3% of 6-to-16-year-old children and adolescents, i.e., about 200,000 students of whom nearly 77,000 attend middle school. Despite a high intellectual potential, these students may show low levels of academic performance and/or have difficulties in psychosocial adjustment (Pereira-Fradin & Jouffray, 2006). The Delaubier (2002) report was the first official document of the French Ministry of Education to address this issue, and its publication marked a turning point in the consideration of these students' special educational needs (SEN) in France. A series of regulatory texts have been published since 2002, inviting schools to set up educational programs providing gifted students with facilities (e.g., curriculum acceleration, enrichment, pull-out programs, individual support, extracurricular activities) meeting their SEN. Within this context, our aim was to verify whether the educational programs for gifted students deployed in French middle schools put emphasis on the same SEN. To our knowledge, there exists no previous research on this issue. Seven French public middle schools proposing educational programs for gifted students participated in the present study. A semi-structured interview was conducted with the headmaster of each middle school, in order to determine the gifted students' needs as perceived by the institution. The results revealed that while several needs (e.g., students' discomfort and difficulties in peer relationships) were cited by all the interviewees, others (e.g., non-adaptive behaviour, graphomotor difficulties) were evoked only once. In other words, despite the same name and apparent homogeneity of the population, these "educational programs for the gifted" do not all put emphasis on the same SEN. Moreover, headmasters have diverse perceptions about gifted students' special educational needs. The implications of these results for the schooling of gifted students will be discussed.

Keywords: gifted student, middle school, perceptions, specific educational programs, special educational needs, evaluation



SUPPORTING TEACHERS' WORK WITH GIFTED STUDENTS IN SERBIA

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Abstract

The aim of the paper is to explore the missing types of support to teachers and professional associates working with gifted students in educational institutions in Serbia. Research shows that educational employees have neither enough knowledge, nor experience to work with gifted children and students. Educational laws guarantee some forms of support to gifted children and students, but do not mention the support for the work of teachers and professional associates. The research we carried out included a total of 231 respondents from 10 schools across Serbia and was conducted in March 2019. The research is one of the activities of the new Government project aimed at improving the competencies of teachers and professional associates who work with gifted students. The survey was conducted using a questionnaire about the support to employees that work in schools, and the support that is missing. The vast majority of the respondents (90.9% of the teachers and 95.7% of the professional associates) expressed the need for support in their work with gifted students. The most requested forms of support are professional training, special materials for working with gifted students, exchange of experiences with experienced teachers, expert advice, and professional literature in the field of work with the gifted. The results were also marked by the disagreement of the groups of the respondents regarding the need to educate gifted students in special classes, which was supported more by the teachers than the professional associates.

Keywords: support, teachers, professional associates, gifted students



GIFTED STUDENTS IN NATURAL SCIENCES – THE LUMEN PROJECT

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Abstract

The LUMEN project, whose applicant is the Krapina-Zagorje County, is part of the Operational Programme "Effective Human Resources" 2014 - 2020, facilitating work with gifted children and students at the pre-tertiary level. The project is implemented in the duration of two years from 28 June 2017 until 27 June 2019, in five elementary schools and four high schools, in collaboration with the Zagorje Development Agency d.o.o. The total value of LUMEN project is €127.261,80. The aim of this project is to educate 400 professors and professional associates about ability. 113 professors - members of working groups, are additionally being educated on 5 thematic areas (social - humanistic - linguistic, mathematical - computer science - technical, artistic, natural science and classroom teaching) and developing innovative content for working with (potentially) gifted students. The project is being piloted with 160 elementary school and high school students in schools which will become centres of excellence as soon as the project has been completed. The professors - members of working groups in natural sciences (biology, chemistry, physics and geography) are being educated about ability in general, ability in natural sciences, natural sciences literacy, and critical thinking in natural sciences. Based on real life examples and guidelines, they are expected to create the pilot programme materials. Those materials will be integrated into two handbooks containing the theoretical and practical sections entitled "We are sailing on and exploring the waters of Croatian Zagorje" (for elementary schools) and "Project teaching - exploring water" (for high schools), both of which will be publicly available on the project website. Natural sciences teaching requires students to become familiar with natural methods and methods of detecting and scientifically comprehending the subject matter, all with the aim of being independent in their environmental awareness. For these reasons, the project and problem type of materials in these handbooks are intended for gifted students.

Keywords: natural sciences, eco-schools, project LUMEN, educational materials

*Note. Did not attend the conference.



KNOWLEDGE, CURIOSITY AND POPULARITY AMONG PRESCHOOLERS

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Abstract

Children regarded as competent to produce new ideas and display creativity and wittiness are found to be popular among their peers due to these characteristics (Lau, Li and Chu, 2004). Some studies found that there is a correlation between curiosity about a particular object and the social curiosity of preschoolers (Bumpass, 2009). A nine-year longitudinal study on children between four and twelve years of age has shown that a high score on intelligence tests is linked to social competence in the peer group (Asendorpf and Aken, 1994). Bearing in mind the results of the studies which indicate the relationship between curiosity, knowledge and popularity of preschoolers, the aim of this study was to determine whether children who are seen as popular by their peers are also judged to be the smartest and the most curious. The research included 52 children selected from two kindergarten groups of one kindergarten in the Osijek-Baranja County. The children were asked to determine which child in their kindergarten group knows the most, is asking most questions and with whom out of all of them they like to play the most. The children's answers revealed three distinctive patterns. These distinctive categories of answers were knowledge, curiosity and popularity. The results indicate that 34,6 % of the children who were chosen for their knowledge were picked for their popularity also, while only 7.6% of the children who were chosen for their popularity were not chosen for their knowledge. With respect to curiosity, 30.7% of children that were chosen for their curiosity were also selected for their popularity, while 15% of children who were chosen for their popularity were not chosen for their curiosity. The findings are presented for both groups of clustering results.

Keywords: knowledge, curiosity, popularity, preschoolers, peers

*Note. Did not attend the conference.



SYSTEMATIC REVIEWS IN CREATIVITY RESEARCH: WHAT IS NOVEL AND USEFUL IN EDUCATIONAL BEST PRACTICE?

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Abstract

Numerous countries have moved to increase the focus in their educational practices on creative learning outcomes and to develop creativity among students in primary and secondary schools. We propose the research synthesis model of systematic review as a tool to bridge the research-to-practice gap between what researchers do and what educators of children and adolescents need. A systematic review aims to analyze the existing data across multiple studies using explicit, accountable, and rigorous research methods (Gough et al., 2017). Our session focuses on recent systematic reviews on research topics related to describing creativity (Kupers et al., 2019), fostering creativity in the classroom (Davies et al., 2013; Sawyer, 2017), characterizing creativity intervention studies (Kupers et al., 2019), measuring creativity (Said-Metwaly, Kyndt, & Van den Noortgate, 2017) and understanding the nature and impact of teachers' beliefs about creativity (Bereczki & Karpatis, 2018; Mullet et al., 2016). The goal of our session is to synthesize across recent systematic reviews which examined the educational practices related to creative outcomes for students, to creativity assessment practices, and to teacher beliefs that increase or inhibit the creative performance of their students. The lessons learned from the systematic reviews on creativity will be presented, as well as the methods we employed to locate and aggregate across the reviews. Participants will be provided with a practical research and resource summary of evidence-based educational practices that encourage creativity in educational settings. The session will also include an example systematic review search protocol for creativity that could be used by educators and researchers.

Keywords: student outcomes, teacher beliefs, educational best practices, systematic reviews, classroom conditions for creativity



BRIDGING BEST PRACTICE IN GIFTED EDUCATION AND ENGLISH AS A FOREIGN LANGUAGE IN PORTUGAL

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Abstract

Differentiating the curriculum, differentiating instruction as well as assessment are pedagogical 'musts' if we aim to embrace the diversity of our most able students in this era of great accountability. There has to be, as suggested by experts, a match between 'who', 'what' and 'how' we teach to result in student engagement. It is of great importance that educational systems embrace more delineated strategies of differentiation in order to cater for the needs of the heterogeneous population of gifted and talented learners present in our classrooms. This study, comprised of both a quantitative and qualitative design, gathered data from 110 public and private school teachers of English; the teachers reported the strategies being implemented in their classrooms. Further information was collected from classroom observations as well as semi-structured interviews. It was found that based on the sample of teachers of English as a Foreign Language that participated in this study, little or no differentiation that caters for the gifted is taking place in Portuguese classrooms. To help lessen the achievement gap in what could be and what is, and to rectify the inattention so far towards this subpopulation of learners, an overview of differentiation strategies that can be used in an English as a Foreign Language setting is suggested, alluding additionally to the idea that some practices are effective with all learners and are synonymous to driving up standards for all.

Keywords: curricular modifications, English as a Foreign Language, gifted and talented, inclusion, instructional modifications



TEACHING FOR CREATIVITY IN TECHNOLOGY-INTEGRATED LEARNING ENVIRONMENTS ACROSS THE HIGH SCHOOL CURRICULUM: AN EXPLORATORY STUDY

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Abstract

Creativity has benefits both for an individual and the society, and thus fostering students' creative capacities has justifiably received significant policy, professional and research attention in recent years. In addition to creativity, technology is also an important aspect of today's classrooms and, if paired with certain pedagogical approaches, digital tools have been shown to increase student learning. Furthermore, the affordances of educational technology to promote creativity in schools are also often cited in the literature, yet empirical studies exploring the relationships between learning, creativity, and technology are surprisingly scarce. In our presentation, we review the literature on stimulating creativity in technology-integrated environments as well as share the results of our exploratory study seeking to contribute to the growth of this knowledge base. Applying a case study design, we examined 12 Hungarian digital pedagogy expert teachers' beliefs and experiences of nurturing creativity in technology-enhanced learning environments across 6 subject areas of the curriculum: arts, EFL, Hungarian language and literature, maths, science, social studies. By analysing the data drawn from individual teacher interviews, classroom observations, and document analysis, we have identified several themes for future research with direct relevance to real-world classroom practice as well as examples of domain specific use of technology to stimulate creativity that could also serve other classrooms and teachers.

Keywords: creativity, technology-enhanced learning, teachers' beliefs and experience, multiple case study



NEEDLES IN A HAYSTACK – VOICES OF WOMEN IN SCIENCE

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Abstract

Science is considered a discipline that is not affected by what people think about it, what their personal views are, what they believe in as truth and what gender they belong to. This utopian belief in science is far from reality and strong influences of society and gender are seen in its practice. Gender may be a societal construct but is not *only* that. It has its tentacles dug deep into the existence, experience, expression and practice of all disciplines, and that does not exclude science. Globally, women scientists are only a small percentage. In engineering and mathematics, the percentage is abysmal. Despite a sizeable number of female science students in higher education worldwide, the “leaky pipeline” of science education and practice sees a majority of women either leaving science altogether or taking on lower level science jobs. The few that forge ahead must have to face a considerable uphill task against century old prejudices and stereotypes to reach their optimum potential and be recognized for their work. These factors have affected the careers of young gifted girls in a number of ways and their voices have been thwarted over generations. This presentation will focus on insights into how women view and practice science. It will also lend a voice to their perceptions about a career in science and what intrinsic and extrinsic influences shape their decision to pursue science. Referring to more than 2000 women scientists from all over the world, this talk will throw light upon what young girls and women in science must have to make them feel gender equal.

Keywords: science, women, gender



INCREASING EQUAL OPPORTUNITIES IN EDUCATION IN TRANSCARPATHIA: TALENT DEVELOPMENT PROGRAMMES ORGANIZED BY THE "GENIUS" CHARITY FUND

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Abstract

The essential condition for the economic evolution at Transcarpathia is the assistance for young researchers, finding young talents, supporting their development as well as finding young people with outstanding achievements and appropriate knowledge. Searching for, identifying and developing young people with outstanding abilities is the determining factor of the competitiveness of a given region; in such work the prominent role is given to different educational institutions and talent agencies. For this reason, the "GENIUS" Charitable Foundation was established in 2011. It carries out a wide range of talent management, talent development and research among school children, students and young researchers. Our aim is to create an integrated system of talent support programs, to assure equal access in promoting talents, and increase the talented youth's social responsibility. The Foundation, among many others, organizes the Conference of Young Researchers, as well as the Conference of Scientific Students, operates across 8 Talent Points where nearly 2000 children, 300 qualified teachers, and 90 schools take part. It organizes the so-called Talent Days and, additionally, various camps during summer. The Foundation also focuses on children who are gifted in different arts, like drawing, painting, sculpture, folk music or sports. They have the opportunity to take part in our arts competition "The nightingale sings!", the Folk music and dance talent show, Jenő Buzánszky Football Cup, József Zupkó Memorial International Handball Tournament, etc.

In my presentation I intend to speak about our programs, the implemented methods, our achievements, and examples of best practice.

Keywords: talent development, equal opportunities, best practice, talent management, diversity management



A PROJECT FOR GIFTED STUDENTS: BAROQUE IN GLOCAL POSTMODERN APPROACH AT THE EUROPEAN SCHOOLNET ACADEMY

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Abstract

The topic *Baroque in Glocal Postmodern Approach* is an interdisciplinary lesson for the *Cultural History Heritage* subject in the Secondary Crafts School (3rd graders - 17-year-old students) and for *English Language* subject in the Advanced group (5th graders – 11-year-old students and one 8th grader – 13-year-old) of the Primary school Ivan Goran Kovacic (Slavonski Brod, Croatia), designed by Vesna Srnić. While analyzing the project at the *Media Culture* lecture at the Faculty of Education in Osijek, it was defined as *Vertical Education* as well as a *Glocal (Global+Local)* integral and innovative approach to curriculum. The lecture *Baroque in Glocal Postmodern Approach* fits perfectly into our Croatian national curriculum, because it analyzes all relevant styles in the Art History as well as the Art of the 17th and 18th centuries. The topic is convenient for correlation with other subjects (Sociology, History and, in this case, the English Language) as Project-Based and Performance-Based Learning. Concerning the Advanced English Language group in the Primary school Ivan Goran Kovacic, Art was a splendid topic for the synesthetic approach to experimentation with classical Baroque style and a Postmodern digital transformation in Art by mobile phones as well as an excellent context for digitalization and Mobile Learning. The project was created for The European Schoolnet Academy in Bruxelles after two months of managing the Learning Scenario or Diary.

Keywords: glocal, postmodern, gifted students, performance art, digitalization

**Note. Did not attend the conference.*



THE ROLE OF KINDERGARTEN TEACHERS IN ENCOURAGING CREATIVITY IN CHILDREN OF EARLY AND PRESCHOOL AGE

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Abstract

Kindergarten teachers play a key role in creating a stimulating and creative environment for the development of the potential and creative expression of a child. They need to possess good professional knowledge and competence, critical thinking, and willingness to experiment and introduce innovations. In this article, we have analyzed professional approaches based on an integrated holistic curriculum, and the role of kindergarten teachers in encouraging children's inventiveness and creativity. Teachers have no dominant role in this approach, but instead they create the conditions for interactive activities. The analysis and overview refers to the relevant research sources, which discuss the topic of encouraging children's creativity in early childhood and preschool educational institutions. Kindergarten teachers, along with parents, are persons who have been given care of early childhood education and with whom children spend most of their active time during the day. Therefore, their role is considered to be one of the most important in a child's life. Apart from implementing the content, the plan and program of work envisaged by the curriculum, kindergarten teachers, among other things, need to explore their own practices and, thus, an additional incentive to offer optimal opportunities to children. Teachers as reflective practitioners who monitor and evaluate their own achievements contribute to the creation of their own educational curricula. By monitoring and recording the features of child development and detecting one's individual needs, they can offer optimal opportunities tailor-made for a specific child, and encourage the development of their abilities.

Keywords: child, creativity, development, kindergarten teacher, potential



PRESCHOOL TEACHERS' ASSESSMENTS IN EARLY IDENTIFICATION OF CREATIVE-PRODUCTIVE GIFTEDNESS

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Abstract

This research focuses on the concept of creative-productive giftedness (CPG), which is operationalized through outstanding child products. The aims were to: (1) identify which indicators in the early identification of CPG are given the greatest importance by preschool teachers; (2) identify the differences in preschool teachers' assessments of outstanding products and child's characteristics expressed in them; (3) compare preschool teachers' estimates with estimates of preschool psychologists. In the pre-research, CAT was used to select the outstanding products that deviated from normative development and to collect detailed descriptions of products as a base for constructing the questionnaire. In the main research, 103 preschool teachers evaluated 10 outstanding products via a structured questionnaire. The results indicate that preschool teachers attribute greater importance to products and passionate children's interests than to other indicators in the early identification. Ingenuity was valued as a dominant feature of the outstanding products, followed by the level of detail, complexity, meaningfulness, expression of unusual ideas, and demonstration of knowledge above the chronological age of the child. Statistically significant differences were obtained for the estimates of the creative and technical features of the products and the child's characteristics expressed in them. A high degree of agreement between the preschool teachers and psychologists in the assessment of creativity and the expressiveness of the distinguished features in the products were found. The research findings suggest that the focus may be put on outstanding child products and that teachers can be valid assessors in the process of early identification of CPG.

Keywords: preschool child, outstanding product, product-based assessment, preschool teacher, creativity



THE PERCEPTION OF THE COMPETITIVE AND CREATIVE SCHOOL CLIMATE AND ITS RELATIONSHIP TO MENTAL AND SOMATIC HEALTH OF THE ACADEMICALLY GIFTED

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Abstract

The study which will be presented encompasses 323 students from five of the very best highly competitive academic high schools in the country, among them a great number of academic contest winners. The students' perception of the competitive/non-competitive school climate was investigated by means of the School Competitive Climate Questionnaire (Fülöp, 2018) and the Class Goal Structure Questionnaire (Fejes et al, 2015). The perceived creative climate of the school was measured by means of the School Creative Climate Questionnaire (Péter-Szarka, 2015). The students' mental and somatic health was measured by using a number of questionnaires measuring generalized anxiety, school burnout, perceived stress, benign and malicious perfectionism, competition anxiety, positivity, grit, resilience, and health. It was found that the perceived competitive climate had mostly no relationship with mental and somatic health, however, the perceived competition among students correlated positively with generalized anxiety, cognitive competitive anxiety and benign perfectionism, while the teachers perceived that encouragement of competition correlated positively with the students' resilience, self-confidence and self-efficacy. The positive group climate subscale of the Creative School Climate Questionnaire correlated positively with most of the mental health indicators and somatic health indicators. Interestingly enough, the academically gifted students of highly contest oriented high schools perceived a strong positive relationship between teachers' encouragement of competition and the creative school climate, indicating that these may not be contradictory, but can co-exist and overlap effectively and contribute to students' wellbeing.

Keywords: creative school climate, competitive school climate, academically gifted, mental health, somatic health

**Note.* Did not attend the conference.



THE CREATIVE PRODUCTIVITY MODEL FOR PRODUCTIVE GIFTEDNESS: A NEW STRATEGY FROM THE UNIVERSITY OF JEDDAH

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Abstract

In light with Saudi Arabia's Vision 2030, the University of Jeddah (UJ) established the program of Attracting and Nurturing Gifted Youth, which is the unprecedented program for educating gifted students at Saudi Arabian universities. The theoretical and pedagogical framework of this program was underpinned by three principles; human capital, the sustainability of learning products, and creative productivity. The main purpose of this presentation is to present the UJ strategy for giftedness, creativity, innovation, and how the Creative Productivity Model (CPM) was originally derived. It is the operational model for designing productive enrichment programs for nurturing gifted students at the UJ. The model bridges the gap between talents and productivity, and aims to empower young gifted students to transfer their talents to high levels of creative productivity. The underlying assumption of the model is to support gifted students to become producers of knowledge and have an influential role in developing innovative initiatives and research projects. The presentation will demonstrate eight essential components for designing an effective enrichment program for enhancing creative productivity. The presentation will offer evidence on how the gifted students applied the new skills of creative productivity through a community action project. Recommendations and educational implications for developing creative productivity programs will be discussed.

Keywords: UJ, strategy, creative productivity, sustainability, enrichment



INTRODUCING COUNSELLING AS A PRIVILEGE FOR THE UNDERPRIVILEGED GIFTED STUDENTS IN RURAL AND TRIBAL INDIA: FINDINGS, IMPLICATIONS AND RECOMMENDATIONS

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Abstract

Counselling is a privilege, especially in rural India where education for girls is still a challenge. A counselling unit is an integral part of the Tribal Mensa Nurturing Program (TMNP). Rural girls face innumerable hurdles and adversities that hinder their progress, especially when they are gifted. To ensure that each girl's problems are addressed, along with nurturing, individual counselling has been introduced in TMNP. This present research (N=175, age group 14-16 years) focuses on 1) The need for counselling and 2) Developing the brief counselling method.

The brief counselling method was adopted to understand the problem areas and concerns and to further divide them into 2 broad spectra - 1) academic performance and 2) family relations based issues. The paper addresses the problems, gives recommendations and input at the policy and strategy level.

Keywords: counselling, gifted students, underprivileged students, India



DESIGNING A TOOL TO ASSESS AN INDIGENOUSLY DEVELOPED NON-ACADEMIC NURTURING PROGRAM FOR UNDERPRIVILEGED GIFTED ADOLESCENTS OF RURAL INDIA

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Abstract

Tribal Mensa Nurturing Program (TMNP) conducts a nurturing program for underprivileged gifted students in rural and tribal areas of Maharashtra, India, since 2002. TMNP has developed an indigenous, non-academic human nurturing model based on Panchakosha (Five Sheaths of Human Being) from the Vedic scriptures. The present study aims to develop a tool to assess the impact of nurturing on gifted students. The tool is comprised of a questionnaire and an interview. The unique composite structure has been developed on the principle of five koshas and three shaktis (energies). To study the efficacy of the assessment tool, its impact was analysed on a sample size (N = 50) of underprivileged gifted adolescents. The results have been discussed and a new model of giftedness assessment for nurturing is being proposed.

Keywords: underprivileged, gifted, nurturing, Panchakosha, India

**Note.* Did not attend the conference.



NEW OUTLOOK ON NURTURING PROGRAMS FOR THE UNDERPRIVILEGED GIFTED: DESIGN AND ITS IMPACT

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Abstract

Tribal Mensa Nurturing Program (TMNP) works with underprivileged gifted students of rural and tribal India. TMNP focuses on giftedness nurturing. Its nurturing program is a “Pull Out Program” which consists of 12 day workshops for 4 hours each. It was observed that these workshops were insufficient and less impactful. The reasons were logistics, coordination, human resources and workshop deliverables. To overcome these shortcomings, an “Overnight nurturing workshop” based on “TMNP Nurturing Web Model” is proposed. This paper will discuss the Overnight nurturing workshop and “TMNP Nurturing Web Model” in detail. The TMNP Nurturing Web Model focuses on five major areas; awareness, skills, participation, knowledge, and attitude. The study includes a total of (N=172) gifted girls that participated in the 4 overnight workshops. The impact was analysed by means of feedback forms, the output of activities, and self-assessment. It was concluded that the overnight nurturing programs based on “TMNP Nurturing Web” were significantly higher in meeting the nurturing objectives.

Keywords: underprivileged, gifted, Overnight Giftedness Nurturing Program, TMNP Nurturing Web, India

*Note. Did not attend the conference.



CREATIVITY IN EARLY CHILDHOOD EDUCATION: PRESCHOOL TEACHERS' BELIEFS ABOUT CREATIVE APPROACHES

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Abstract

Contemporary theories on the development of creativity emphasize the importance of cultivating the creative potential in young children through supportive educational settings. Preschool teachers have a key role in establishing an appropriate context for fostering creativity by providing enough time and encouragement to enhance exploration and experimentation in children's learning. The focus of the present study is, therefore, to examine preschool teachers' beliefs about the nature and role of creative approaches in early childhood education. The sample included a national-wide participation of preschool teachers from 24 preschool institutions, located in different statistical regions of Slovenia. The participants filled out the Early Childhood Creative Pedagogy Questionnaire, measuring four different domains of creative pedagogy: self-initiated pursuits, interpersonal exchanges, possibility thinking, and teacher-oriented pursuits. The preliminary study results showed that preschool teachers held similar beliefs about the vital aspects of teaching approaches (i.e., asking open-ended questions, providing time to develop ideas, giving choice) that promote children's creative thinking. The presentation will focus on methodological and content issues of understanding teachers' beliefs about creative practices for the development of professional programs that will cultivate creativity in children more systematically in early childhood education.

Keywords: creativity, preschool teachers' beliefs, early childhood education, creative approaches, creative development

*Note. Did not attend the conference.



CLASSROOM CLIMATE AS AN INDICATOR FOR STIMULATING CREATIVITY: A COMPARISON BETWEEN THE REGULAR AND ENRICHED CURRICULUM OF VISUAL ARTS

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Abstract

A significant element that determines the development of students' creative potential is a creative classroom climate which provides a platform for the artistic development of gifted students. The purpose of the study was to determine the 5th to 8th-grade students' perception about the creative classroom climate ($N = 142$) by using the adapted version of Péter-Szarka's et al. questionnaire of five dimensions. Specifically, the aim was twofold: (1) to compare the gifted students' perception of two programmes (the regular and enriched curricula of visual arts), and (2) to compare the gifted students' perception of the regular curriculum with their non-gifted classmates' perception. The results of inferential statistics were supplemented with a content analysis of the responses to the additional open question. They imply that: (1) gifted students perceive a higher level of creative climate in the enriched curriculum than in the regular one, (2) in the overall assessment, the perception of creative climate in the regular curriculum is similar among the artistically gifted students and their non-gifted classmates, although (3) the gifted students perceive a statistically significant lower level of openness and appreciation of autonomy and diversity, and a higher level of challenges and interest, than their non-gifted classmates. These findings provide an insight into students' framework of a creative classroom climate in programmes within the field of visual arts (e.g., the provisions for gifted students during regular classes) and have implications for broader issues regarding the needs of gifted education (e.g., the factors supporting the development of creative-productive ideas).

Keywords: creativity, creative climate, artistically gifted students, visual arts, enriched curriculum



MATHEMATICALLY CREATIVE STUDENTS' PROFILES OF CREATIVE PROBLEM SOLVING ATTRIBUTES

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Abstract

The main goal of this study is to investigate the relationship between creative problem solving attributes and mathematical creativity. A total of 305 middle school students in Viet Nam were tested using the Mathematical creative problem solving test and surveyed with creative problem solving attributes. The students with similar profiles of creative problem solving attributes were clustered and their performances in mathematical creativity were compared. The hierarchical cluster analysis was conducted based on their profile of creative problem solving attributes, namely divergent thinking, convergent thinking, mathematical knowledge and skills, general knowledge and skills, motivation, and environment. The hierarchical cluster analysis revealed the existence of three clusters named Superior, Moderate and Poor Attributes groups of students. The ANOVA analyses confirmed that the three clusters are significantly different in all six attributes. The Scheffé tests revealed no significant difference between the Superior and Moderate Attributes Clusters in mathematical knowledge and skills, but significant differences in all the other attributes. The Moderate and Poor Attributes groups were significantly different in all attributes. ANOVA and Welch's F tests, followed by Games Howell and Scheffé tests, confirmed that these three clusters were also different significantly in their mathematical creativity. The findings highlighted the commensurate/predictive relationship between the students' creative problem solving attributes and their performance in the mathematical creative problem solving ability test. Additionally, a chi square analysis with standardized residual method showed that the female students were significantly better in mathematical creativity than the male students. Based on the findings of the study, implications for cultivating students' mathematical creativity and future research goals were discussed.

Keywords: cluster analysis, creative problem solving attributes, gifted student, mathematical creativity, middle school

*Note. Did not attend the conference.



THE JOURNEY FROM A "CREATIVE TEACHER" TO A TEACHER WHO ENHANCES THE CREATIVITY OF HIS STUDENTS

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Abstract

One of the main goals of the division for gifted and outstanding students is enhancing creativity as a way of life. Prof. Csikszentmihalyi and other researchers indicated the 4 levels of the trajectory of creativity (The four C's): Mini C - the interpretive creativity, Little C - everyday creativity, Pro C - expert creativity and Big C - eminent creativity (James C. Kaufman, Ronald A. Beghetto, 2009). In this presentation I will show how we implement the 4 c's throughout our programs and develop creativity in line with the students' age and achievements. Israel is one of the few countries in the world which has innovative nationwide programs for gifted and outstanding elementary and secondary school students. We create unique opportunities to develop creativity in national programs, and pull out magnet centres and special classes for gifted students. The participants will have the opportunity to get acquainted with special programs and models such as: the mentoring program, the regional responsibility program, and the "flow".

Keywords: creativity, gifted, mentoring, special programs

*Note. Did not attend the conference.



CREATIVITY-RELATED DIGITAL COMPETENCIES IN GIFTED AND AVERAGE STUDENTS

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Abstract

The aim of the present study was to compare gifted and average students on measures of perceived digital competencies related to creativity (digital content creation and problem solving) before and after the implementation of the “e-Schools” project in Croatia (“e-Schools: Establishing a System for Developing Digitally Mature Schools (pilot project)”. Additionally, it was explored whether the use of information and communication technologies (ICT) in everyday and school-related activities predicted creativity-related digital competencies (after controlling for the initial levels of those competencies). The information about the gifted students in 7th and 8th grade was obtained from 11 elementary schools participating in the project (N=79). Their results were compared to average students selected randomly from their classes, excluding students with difficulties (N=171). The students were assessed by means of an online questionnaire. The results showed that the students reported the intermediate level of creativity-related digital competencies, but an increase was noted from the first to the second measurement point. The gifted and average students showed similar levels of creativity-related digital competencies in both measurement points. Interestingly, although the use of ICT activities accounted for a significant proportion of creativity-related digital competencies in both samples, school-related ICT activities predicted creativity-related digital competencies in the gifted, but not in the average students. These results suggest that encouraging the use of school-related ICT activities might foster creativity-related digital competencies in gifted students.

Keywords: digital competencies, ICT use, creativity, gifted students

*Note. Did not attend the conference.



NURTURING YOUNG GIFTED CHILDREN'S CREATIVE EXPRESSION: THE EARLY CHILDHOOD EDUCATOR AS A 'CREATIVE ENABLER' IN AN EMERGENT APPROACH TO THE CURRICULUM

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Abstract

Early childhood educators play a significant role in creating learning environments that foster young children's creativity and search for meaning as they seek to develop their play ideas and make connections between prior experiences and new knowledge. An emergent approach to curriculum in the early years takes into account children's interests, needs and curiosities and uses them as a basis upon which projects are developed and explored. This results in more responsive and creative ways to honor the reality of high potential and giftedness in the heterogeneous early years' classrooms where high ability, gifts and talents may still be flourishing. Inclusive pedagogies and practices such as the emergent curriculum approach may benefit the cognitive, social and emotional needs of highly able learners, providing them with opportunities for an enriching learning experience that nurtures their creative expression and values their individuality and giftedness. In this paper, the potential and opportunity of such an approach to provide challenges and extend children's learning will be discussed. Moreover, it explores the ways in which early childhood educators may become 'creative enablers' who encourage the exploration and discovery learning through their own creative and innovative pedagogical approaches. Furthermore, using elements from cultural-historical activity theory (CHAT), the powerful connections and interactions amongst adults, children and artefacts in the environment will be highlighted as a means to discuss the dynamic interplay between educators and young gifted children as well as the inevitable impact on each other's experiences, performance and identities.

Keywords: early childhood education and care, creative expression, emergent curriculum responsive teaching, inclusive pedagogies



SOCIAL ENVIRONMENTAL FACTORS AND PERSONAL MOTIVATIONAL FACTORS ASSOCIATED WITH CREATIVITY ACHIEVEMENT: A CROSS-CULTURAL PERSPECTIVE

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Abstract

Although the theory of the socio-cultural approach to creativity is gaining steam, empirical studies are lagging behind. To address the gap of empirical studies integrating individual, socio-environmental and cultural factors, we examined how motivational factors and environmental responsiveness jointly affect college students' creativity achievement in different nations. The participants were university students from nine culturally and geographically diverse regions: Argentina, Austria, Chile, China, India, Kosovo, Russia, Saudi Arabia, and Turkey ($N = 3734$, female = 73.7%, $M_{age} = 20.79$; $SD_{age} = 1.94$). Overall, the results paint a generally positive picture of the impact of environmental responsiveness on motivational factors and creativity achievement. By employing SEM and MGSEM methods, the results partially supported the mediation role of motivational factors between environmental responsiveness and creativity achievement. In addition, we observed more consistent parental effects of environmental responsiveness, either on motivational factors or creativity achievement, than we did the lecturer effects. This holds true across all the participating countries, indicating that parents impose a dominant influence on children regardless of national origin, whereas lecturers exploit their influence on students relative to the cultural organizational circumstances. As the first large-scale empirical study with a socio-cultural approach, we invite further discussion and propose building on our results through future

cross-cultural research of this kind. Implications for researchers and practitioners are addressed.

Keywords: socio-cultural, creativity, motivational factors, parental responsiveness, lecturer responsiveness, creativity achievement

**Note.* Did not attend the conference.



EDUCATING INNOVATORS: HOW TO MOTIVATE, ENGAGE, AND DEVELOP TALENT

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Abstract

Our schools today have a talent development crisis. Even the best are not producing the creative problem solvers needed in this competitive global economy. A focus on standardized testing for accountability has narrowed the curriculum and left our students unmotivated, disengaged, and underachieving. The greatest crisis is among poor and minority students who lack equitable opportunities to discover and develop their talents. This presentation demonstrates a sound new approach for *educating innovators*, students prepared to apply their unique talents to create new ideas, processes and products to improve our world. In the *Talent-Targeted Teaching Model*, the purpose for learning shifts from short-term content and skill acquisition to long-term aims for developing the 12 aptitudes of innovators; cognitive and “soft skills” such as creativity, insight, persistence, logical reasoning, empathy, and metacognition. Educators learn how to transform their required curriculum objectives into long-term talent development goals which motivate students as they self-assess and document their progress on a continuum. Using the *Design for Innovation* essential strategies, teachers can create authentic product-based learning to engage students in deep understanding while developing the aptitudes of innovators. Talent-Targeted Teaching and Learning applies the psychology of motivation, engagement, and achievement in practical tools that educators can use to focus on talent development. The Talent-Targeted Teaching model can be used with gifted students to extend and refine their talents, with grade-level students to support growth, and with at-risk students to discover and develop emerging talents.

Key Words: creative curriculum, talent development, motivation, engagement, innovation



USING CREATIVITY AS A TOOL FOR ACTIVE STUDENT ENGAGEMENT: A TEACHER TRAINING WORKSHOP

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Abstract

Educators and teachers use many instructional strategies in order to engage students in the learning process. This workshop aims to expand the repertoire of active instructional strategies that any teacher could adopt in their classroom in order to enhance motivation and support learning, particularly in terms of promoting students' creative thinking skills and thinking outside the box. The strategies have stemmed from a wide range of activities focused on developing creativity that are frequently employed in CTY-Greece's educational programs for highly able students. During the workshop, educators will have the chance to experience hands-on student-centered activities, which will broaden their knowledge regarding the importance of promoting creative teaching and developing creativity in their classrooms. Additionally, participants will acquire tools that could engage and motivate their students to learn, regardless of their academic abilities. Finally, participants will have the opportunity to exchange good teaching practices and discuss challenges in incorporating activities aimed at promoting creativity in their curriculum with fellow colleagues and the workshop trainers.

Keywords: instructional strategies, creativity, active engagement, motivation, hands-on activities



LEARNING WHILE GAMING – THE EDUCATIONAL POTENTIAL OF ROLE PLAYING GAMES

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Abstract

Learning while gaming is an experimental afterschool program, currently being developed by a team of psychologists from "Wind at The Back" NGO. Using a custom made role playing game, the program offers 12-year old students a chance to play a fun group game, while at the same time introducing concepts and materials that are not part of the regular school curriculum. The goal of the program is to determine how well the students respond to this method, in order to make it a permanent program. Supervised by two future ECHA gifted education specialists, students gather each week for a game session, playing a game set in a custom made science fiction environment. As the game progresses, they encounter different problems and in order to solve them, they need to learn about different topics in physics, astronomy and foreign languages. The students gather knowledge about subjects that are unfamiliar to them, but in order to progress in the game, they need to learn. They work as a group in order to find solutions to various problems and they advance through the game based on their decisions. Role playing games have been tested in the past for educational purposes, but not so often in Croatia. It is the opinion of the authors that this method is ideal for working with small groups of gifted students.

Keywords: RPG, gifted students, gaming, learning, problem solving



FOSTERING CREATIVE THINKING IN CHILDREN

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Abstract

Creativity is the ability that children can display in their unusual and original questions and answers, in unusual, wise statements, their inexhaustible imagination and inventiveness, the sense of improvisation and original problem solving, and the courage to express these ideas (Koren 1989). E. Fromm said, "Creativity requires courage to let go of certainties." In today's changing world, the most sought-after competences are: ability to solve problems, critical thinking, creativity and social skills. The American psychologist Sternberg believes that creativity should be developed as a lifestyle that will permeate every segment of our activity. In order to develop a creative attitude towards the world, it is important to encourage internal and external autonomy, nurture curiosity and the natural initiative of the child to explore, question and create new ideas. The programme “Sparks” is carried out through workshops at the NGO “Wind at the back” (European Talent Point), organized for children from 4 to 14 years that have been detected as potentially gifted. We provide gifted children with the activities that satisfy their needs and interests (especially the STEAM field), develop their potential, encourage creativity, (self)presentation skills, develop emotional intelligence, and learning skills. This workshop will give a short summary of some activities that can be used to support divergent and creative thinking and problem solving. We will demonstrate how we use associative cards, “creative movement”, thinking tools by E. de Bono, WCR model of creativity by A. Antonietti and some other techniques to support creativity in daily teaching and during workshops.

Keywords: gifted education, creativity, divergent thinking, problem solving, risk taking



SUPPORTING EMOTIONAL NEEDS OF GIFTED CHILDREN: AN EXAMPLE OF GOOD PRACTICE IN GIFTED EDUCATION

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Abstract

Emotional and social needs of gifted children are often overlooked in institutional education. Nevertheless, synchronised cognitive and emotional development is the key for developing a balanced and well-adjusted personality. Asynchrony in the development of gifted students is a common phenomenon and it can be the source of different problems that can result in academic underachievement, behavioral problems, emotional distress and social maladjustment. This workshop will present “Sidro” (eng. Anchor), a programme of emotional support for gifted children. The programme is focused on developing emotional competencies as well as social and communication skills in gifted children. The presentation will include the description of scientific and practical fundamentals of the programme, aims and goals of the workshops, techniques, strategies and activities used in the workshops and the programme's outcomes. Also, examples of useful techniques will be demonstrated. The final part of the workshop will be open for questions, suggestions, debate and experience exchange between participants.

Keywords: social and emotional development, gifted education, emotional intelligence

*Note. Did not attend the conference.



THE MEANING OF MEDIATION AND CREATIVITY IN GIFTED CHILDREN'S EDUCATION

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Abstract

Creative behavior refers to any action or achievement judged by oneself or others as original and meeting task constraints (Karwowsky & Beghetto, 2018). Mediated learning is one of the key factors influencing the cognitive ability and learning potential. The Mediated learning experience (MLE) is the quality of interaction between a child and the mediator. The main mediation Categories are Intentionality & Reciprocity, Mediation of Meaning and Mediation for Transcendence (where else). This combination between creativity and mediation will lead to meaningful learning for gifted children. The aim of the workshop is to enrich the theoretical and practical knowledge concerning the education for gifted children in the context of the mediated learning experience theory and creativity. This workshop is based on three workshops that were given to 20 teachers and psychologists working at the Center for gifted children in Croatia "Wind at the back". The Center provides enrichment for gifted children who are 4-14 years old. The workshop impact is on the theoretical and practical knowledge of mediated learning experience theory and creativity. During this workshop, participants will practice during one activity of "problem based learning", setting goals and providing appropriate mediation for creativity mediation concerns: Mediation for meaning: why creativity is important and transcendence-where else, we will use creative thinking. Mediation for meaning and transcendence-where else according to the goals that this knowledge will serve the child. At the end, we will give examples from fieldwork with gifted children and staff at the Center for the gifted "Wind at the back".

Keywords: creativity, mediated learning, gifted education, problem solving, meaning

*Note. Did not attend the conference.



PROVIDING CREATIVE ENVIRONMENTS FOR YOUNG MINT TALENTS' RESEARCH PROJECTS

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Abstract

Extracurricular MINT [Mathematics, Information and Computer Science, Natural Sciences and Technology] talent support plays a major role in strengthening the self-efficacy expectations of young people and stimulating their epistemic interest in the MINT disciplines. Typical examples are long-term out of school programs and the so-called student labs located at research facilities. Providing hands-on experiments, they verifiably stimulate students' interest in science and technology. The DLR_School_Lab Oberpfaffenhofen, operated by the German Aerospace Center DLR, is one of these student labs with long-term experience in the field of MINT talent support which cooperates with numerous institutions fostering talents. School student research projects bring young talents in close contact with state of the art research and development. Key factors for the success of such projects are, among others, creative educators bringing innovative research ideas to young MINT talents inspiring environments such as aerospace research centers. This contribution presents examples for typical aerospace-related school student research projects, including their basic conception, the practical preparation and implementation, and the development of technological spin-off products. The examples of such projects are remote sensing of vegetation from stratospheric balloons in comparison with satellite data the "Space Box", a command and control unit for performing experiments with and on water rockets. This workshop explains, on the one hand, the key role of teachers for initiating innovative research activities and, on the other hand, the inspiring ambience of an aerospace research center. Furthermore, it offers the opportunity to develop new ideas for innovative school student research projects based on the participant's specific interests.

Keywords: MINT, talent support, aerospace research, innovation, teacher education

*Note. Did not attend the conference.



ECHA SPECIALISTS IN GIFTED EDUCATION MAKE A DIFFERENCE: RITHA STUDENTS TELL YOU HOW

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Abstract

Who are gifted students and what defines them? What are the different ways in which their needs can be served? How do you know if the gifted programme for your students is of high quality? How can you influence policy in gifted education in your country? At the Radboud International High Ability Training Programme (RITHA), it is our goal to increase the knowledge and experience of those who identify, educate and counsel gifted students in primary, secondary and higher education all over the world. We believe that well-trained professionals can make a valuable contribution to improved education for all students, including those who are most talented. The Radboud International Training on High Ability (RITHA) is a postgraduate, research based training programme that offers the opportunity to become an ECHA Specialist in Gifted Education. Twenty-five years after the start of the first ECHA training in Nijmegen, the blended form of this same training (RITHA) started for the first time. Students from Croatia, Malta, The Netherlands, Portugal, Hong Kong, and Germany are now joining this new ECHA training. During this symposium, they will show you what they learned and how they apply this in their daily practice. Doing this, they will ask for the collaboration of the audience, who will get a first glance of how we work together in RITHA.

Keywords: RITHA, gifted education, ECHA Specialist in Gifted Education



THE FOUR CREATIVE LEARNING MINDSETS: HOW TO RECOGNIZE, AFFIRM, AND NURTURE INDIVIDUAL TALENTS

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Abstract

This presentation introduces the Four Learning Mindsets, cognitive patterns of perception and judgement based on Carl Jung's psychological type theory. Learning Mindsets are inherent, but influenced by the environment; constant throughout life, but developmental. We use all Four, but not with equal effectiveness. The Learning Mindsets of Play, Practice, Problem Solving, and Personal Growth characterize the goals and interests that motivate and engage individuals' unique aptitudes. In addition, each Learning Mindset has a unique "creative bent" or identity which motivates creative pursuits and innovation styles. When there is a mismatch between the learning environment and individuals' Learning Mindsets and creative identities, this puts them at-risk of underachievement. Fortunately, when all Four Learning Mindsets are understood, it is easy to create a balanced environment which honors the diversity of styles that will be present in any school, family, or workplace. The presentation guides educators and parents through the process of how to recognize, not resist, a child's unique Learning Mindset; how to affirm and not conform the individual's strengths; and how to nurture, not stifle, inherent talent aptitudes.

Keywords: creative teaching, motivation, talent development, learning styles



THE IMPLEMENTATION OF THE RISE MODEL OF CREATIVE EDUCATION

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Abstract

Creativity, as a core skill for the future, must be encouraged and fostered among students from an early age. The RISE Model brings the latest research from the field of creativity and applies it to the educational environment. RISE incorporates four components: result or product, investigation or creative process, a student or a person who is creative, and physical and social components of the creative environment. There are features in every one of the four components, which together help foster creativity in educational settings. In order to have creative students and creative products, it is necessary to have creative education. That is why it is essential to know what the current status on creative education in a specific institution is, and what can be done to improve it. That is why we implemented the RISE Model in two Croatian institutions for early and preschool education. We evaluated the creative educational setting and used the information to improve all of the RISE components in everyday work. The result is the development of a simple to use evaluation tool in the creative education setting, which can easily be applied to evaluate creativity in other settings as well.

Keywords: creativity, RISE Model, early and preschool education, evaluation tool



CREATIVE COLLABORATION THROUGH UNIVERSITY-BASED SATURDAY ENRICHMENT CAMPS

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Abstract

High ability and creative children require rich learning experiences in supportive environments that develop their giftedness and talents. While many PreK-12 schools offer formalized instructional programs designed for gifted children, these children also benefit from enriched experiences outside the regular classroom. University and college campuses possess amazing resources that can effectively address the cognitive and affective needs of diverse PreK-12 gifted learners through one day Saturday Enrichment Camps in specialized high interest topics. When university faculty share their professional expertise, college campuses open classroom doors, and enrichment specialists provide instructional guidance, high impact experiences emerge for diverse gifted learners with minimal cost, time, and effort. Saturday Enrichment Camps might occur as a morning or afternoon experience of several hours, as a cluster of consecutive Saturdays, or expanded into Saturday/Sunday weekend camp. University administration might provide classroom space at low cost in order to attract campers as potential new students. Enrichment Camp topics many range from second language learning to STEM-based investigations to theatre games within a real world setting. This workshop discusses and provides hands-on activities from three university based Saturday Enrichment Camps: Molecular Gastronomy, Crime Scene Investigators (CSI), and Young Entrepreneurs. The presenter will share tips and guidelines to promote creative collaboration between university faculty, gifted facilitators, and families with gifted children. Workshop attendees will learn how to plan a Saturday Enrichment Camp, recruit faculty to work outside their comfort zone, market the event within the university community, and create a rich learning environment outside the classroom for diverse gifted learners.

Keywords: enrichment, giftedness, creativity, talents, collaboration



CREATIVITY: A KEY EXPECTATION FOR PRODUCTS

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Abstract

Creativity must be encouraged and expected as students develop products at all levels of education (K-12). The Developing and Assessing Product (DAP) Tool is a protocol for products (kinesthetic, oral, technological, visual, and written) and includes creativity as one of four components for all products. The DAP Tool has three unique features: three tiers for ready differentiation, a performance scale that goes beyond advanced levels, and four consistent components. The DAP Tool provides three tiers to allow differentiation based on students' previous experience and expertise with that specific product. Having three tiers for each DAP Tool allows teachers to readily differentiate without writing numerous rubrics. Creativity is one of four components of all DAP Tools along with content, presentation, and reflection; and creativity is expected for the content and the presentation. The expectation that the product will look at the content in a new way and the presentation will include a unique perspective conveys an important message for students as they develop products to communicate learning. Presentation is the only component that changes from product to product as the attributes for a research paper differ from those of a podcast or a mural. The use of the DAP Tool counters the trend to overlook creativity in the classroom, often due to perceived lack of time. The protocol has undergone a content validity assessment, and the results will be shared.

Keywords: product, protocol, differentiation, reflection, advanced



STATES OF CONSCIOUSNESS, AWARENESS AND MINDFULNESS IN TALENT CARE

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Abstract

According to Thich Nhat Hanh - who is one of the most authentic spiritual leaders of our times - nurturing means providing examples of happiness. Despite this fact, only few educational practices focusing on happiness can be found. In the context of education and talent development we more frequently encounter concepts like achievement, success and failure, high expectations, hard work, difficulties, compliance, desire or anxiety, rather than the concepts of joy, happiness, love, a sense of completeness, or integrity. Our question is whether talent care can mean giving examples of happiness through our activities? This workshop introduces a theoretical and a practical approach which proposes that achievement is not necessarily the ultimate goal of talent care, it is rather a side effect of a highly conscious, qualitative work and the wellbeing of the individual and their social environment. At the center of this holistic approach we find awareness, mindfulness and different states of consciousness. According to this approach, the dissolution of the obstacles in the mind and of the negative beliefs and emotions together with understanding, experiencing and enhancing optimal states of consciousness in learning and performing can help unfold potential, creativity and talent. By using examples from research, psychological work with top athletes and talented students, the workshop presents how mindfulness and different mental contents influence the unfolding of inner potentials. We do believe that future education needs to turn towards the issues of consciousness, awareness, mindfulness, and positive contents of mind for the wellbeing of humanity.

Keywords: awareness, consciousness, mindfulness, happiness, achievement



CREATIVITY AND EDUCATIONAL RESPONSE FOR STUDENTS WITH HIGH INTELLECTUAL ABILITIES

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Abstract

Development of creativity is one of the most important challenges to reach in the present educational framework. However, there are small attempts and great barriers for interventions aimed to enhance creativity at schools. That is why in this plenary we address creativity as the guiding thread of our research carried out in Mexico and Spain, which is linked to the assessment and intervention of students with high intellectual abilities at different levels and educational contexts. Regarding the evaluation, we are interested in knowing the effects of grouping creativity in children with high capacities who study in the 4th and 6th grade in a public school for high abilities children in Jalisco, Mexico. Likewise, we are interested in exploring how barriers to the development of creativity in teacher training of university students are perceived in the Basque Country, Spain. With respect to intervention, we are interested in finding out the effects of the application of a psychoeducational program focused on contemporary art and creativity in high school students with high intellectual abilities in an area of high marginalization in Mexico City, as well as the evaluation of the art projects elaborated by children participating in an extracurricular program in Tenerife, Spain, and the first assessment of the Athena program, pioneer and innovator in the attention of college students with high abilities of the University of La Laguna, Spain, to increase their motivation and scientific vocations.

Keywords: assessment, creativity, educational response, high ability, barriers, school

*Note. Did not attend the conference.

Creativity Research and Innovation in Gifted Education:
General issues



VOICES OVER TIME: LISTENING TO OUR MOST ABLE STUDENTS

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Abstract

The “superkids,” a group of highly gifted young adolescents, were first portrayed in a documentary film in 2004. The film focused on their decisions regarding secondary school programs, particularly whether or not to pursue a program designed to facilitate early university entrance. Now, in response to the question of what happened to these young people, a question asked by many who viewed the film, the second documentary was produced. This second film is focused on the dynamic, complex nature of these young people’s lives, their retrospective insights about their identification as gifted learners, their educational choices, and their reflections on their early adulthood and career trajectories. The transcripts of filmed interviews were analysed using The Listening Guide (Gilligan, 2015), a qualitative method that provides a framework for understanding and interpreting voice. The researchers responded to the participants’ narratives and created “I Poems” which highlighted first-person voices that may not have been apparent in interviews. This information was used to identify contrapuntal voices among the participants that reflected their views on the meaning of giftedness and their experience of studying in segregated gifted programs. These voices provided a foundation for understanding a variety of pathways to accomplishment, the meaning of gifted label, and the purpose of education at large. The “superkids” perspectives have much to teach us in the contemporary educational context of rethinking how we define and support giftedness.

Keywords: acceleration, adolescence, identification, labelling, documentary

*Note. Did not attend the conference.



LINKING SELF-KNOWLEDGE AND LABELING PRACTICES: A CASE STUDY ON MINI-SCHOOLERS

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Abstract

Recent studies explore an enabling perspective of educational labeling, namely labels can trigger a meaning-generating process that results in gradually formed self-knowledge that can positively impact students' learning outcomes. Our study aimed to explore the link between labeling practices and the formation of self-knowledge. Using a case study method, we interviewed twelve grade 10 - 12 students enrolled in a Mini School, a public gifted education program in Vancouver. Nine interviewees reported having a single educational label (Gifted, G), while three reported having additional labels (Gifted and other Special Learning Needs, G/SLN). Our results revealed that those with a single G label spoke of a disconnection between their label and their self-knowledge due to a perceived social mythology around giftedness that led to the pressure to perform, anxiety, and internal dissonance around what it means to "be gifted". They expressed a desire for more direct support around their G label. In marked contrast, students with multiple labels articulated a strong sense of self-knowledge with regard to their SLN. They spoke of explicit, personalized educational and social-emotional support provided by adults with specialized knowledge. This research illuminates a disparity in the support provided to students based on different educational labels. We propose that several pedagogical changes be in place: specialized training in gifted education will enable educators to understand and support the special learning needs of this population and inclusive education practices that celebrate diversity and nourish all learners will help to break down the mythology surrounding educational labels.

Keywords: labeling, self-knowledge, gifted education, inclusive education, case study

**Note.* Did not attend the conference.



COGNITIVE COMPLEXITY AS A COPING MECHANISM: A CASE STUDY OF SELF-ACCEPTANCE AMONG GIFTED LGBTQ+ STUDENTS

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Abstract

Lesbian, Gay, Bisexual, Transgender, Queer, and other sexual and gender minority students (LGBTQ+) reportedly have a high prevalence of anxiety, suicide, and school dropouts due to some societal stressors, such as bullying, discrimination, and microaggressions. The stressors are so ubiquitous that many LGBTQ+ persons have internalized homophobia even if they believe in equality and anti-discrimination. While LGBTQ+ mental health literature has primarily focused on mental health outcomes per se, an enabling pre-step, self-acceptance, has been largely ignored. Since self-acceptance requires complex philosophical thinking, sensitivity to one's own sociocultural context, and an ability to articulate thoughts, we conducted in-depth interviews (approximately 2.5 hr long each) with a sample of 8 gifted international students from a conservative Middle-Eastern country enrolled in post-secondary programs (range between undergraduate and PhD programs) in North America. Our analysis focused on highlighting their learning experiences in a school designed for gifted students in their home country. Sensitized by Meyer's (2003) minority stress model, Bandura's (1986) social learning theory, and Lo's (2014) LINK Model of self-knowledge, our thematic analysis suggests that certain ways of thinking are helpful for the development of self-acceptance: (1) being flexible with value systems, (2) separating identities from identity labels, (3) willing to entertain complexity and avoiding making hasty conclusions, and (4) thinking extensively about thinking. These are partly engendered by (1) liberal classroom teachers, (2) supportive heterosexual peers, and (3) good English skills that enabled students to seek LGBTQ information from the Western media. Implications are discussed for both educators and mental health workers.

Keywords: LGBTQ, gifted, self-acceptance, twice-exceptionality, advocacy, thematic analysis

*Note. Did not attend the conference.



RELATIONSHIP BETWEEN CREATIVITY AND INTELLIGENCE IN ADOLESCENTS WITH AND WITHOUT HIGH INTELLECTUAL CAPACITY

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Abstract

The relationship between creativity and intelligence has been widely discussed, but remains the topic of debate. Renzulli (1986) mentions that creative people show an Intellectual Quotient (IQ) above 120, while Simonton (1994) suggests that high IQ can inhibit creativity. On the other hand, Preckel, Holling and Wiese (2006) propose that there is no relationship between intelligence and creativity. The aim of the present work was to analyze the relationship between creativity and intelligence of adolescents grouped according to their intellectual capacity. The participants of the study were ninety-six students enrolled from the first to third year in public high schools, which were grouped into three groups: 1 (CI 125-160), 2 (CI 93-115) and 3 (116-123). The Creative Imagination Test for Young People (PIC-J) and the Wechsler Scale for primary level (WISC-IV) were used. Correlations were found in some variables, with low correlations in group 1, while for group 2 and 3 the correlations were moderate. The scores obtained in both tests were compared between the groups, the Student t-test for independent samples did not indicate significant differences between the groups. The results are discussed in terms of the relationship between these two constructs.

Keywords: adolescent, intelligence, creativity, school, high abilities

**Note.* Did not attend the conference.



A CROSS-CULTURAL EXPLORATION OF OPENNESS TO EXPERIENCE AMONG GIFTED STUDENTS

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Abstract

The personality factor openness to experience (OE) has been identified as a strong contributor to creative production. OE reflects individuals' preference for more or less varied experiences. A high OE is associated with greater curiosity and desire for novelty, contrasted with low OE's preference for routine and tradition. In this cross-cultural study, we examined OE among two Irish secondary student groups, one highly gifted ($n = 493$) and one moderately gifted ($n = 351$), and an Indian secondary student group ($n = 503$) scoring in the top 5th percentile on national examinations. The students in each group with the highest third of OE scores were compared with the students in the bottom third of OE scores on a variety of psychological measures. *T*-tests identified within-group differences between high and low OE. The moderately gifted Irish students had the fewest statistically significant differences, with high OE more confident in extracurricular abilities, more ignored by peers, and more extraverted than low OE. High OE highly gifted Irish students were more extraverted, agreeable, and less likely than low OE counterparts to believe that personality is fixed. They were more confident in their academic and extracurricular abilities, social skills, and assertiveness. The Indian high OE students had a greater "growth mindset" than low OE counterparts and were more extraverted, agreeable and conscientious. They were more confident in their academic abilities and self-regulation, ability to resist peer pressure and be assertive. The heterogeneity in these psychological constructs has cultural and academic implications, which will be further explored in the session.

Keywords: personality, openness to experience, cross-cultural, self-efficacy, implicit theory

*Note. Did not attend the conference.



USING AUTHENTIC RESEARCH PROJECTS TO ENCOURAGE CREATIVE THINKING IN HIGH SCHOOL STUDENTS

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Abstract

The Gatton Academy of Mathematics and Science in Kentucky is a residential school for students completing their junior and senior years of high school and who have a high interest in Science, Technology, Engineering, and Math (STEM). The school is located on the campus of Western Kentucky University (WKU), where students take only university courses, graduating from high school with a minimum of 60 college credits. A unique opportunity for students enrolled in The Gatton Academy is the ability to engage in research with professors at WKU. Though it is not a requirement, 90% of students choose to work with at least one research project in various fields including chemistry, mathematics, biology, engineering, among others. Most students present their research at university, state, regional, national, and international conferences. A few of them publish their research in professional journals. This presentation will highlight student research engagement and how it can be used to help students think creatively about topics about which they are passionate.

Keywords: student research, undergraduate research, STEM schools



NATIONAL MODEL FOR GIFTED EDUCATION – SLOVENIAN STRUGGLES WITH CREATIVITY AND INNOVATION

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Abstract

In this paper we will present the case of Slovenia in terms of gifted education. Slovenia had a very elaborate system of detecting, supporting and monitoring gifted children, but with time these processes were reduced to what have become the values of modern society (success at competitions and total freedom). However, Slovenia still detects giftedness in the whole population of 9-year-olds and awards scholarships to ca. 6500 gifted pupils at secondary schools and students. Furthermore, Slovenia has national guidelines for working with gifted children and an article that defines how much work school staff should dedicate to a gifted pupil. Additionally, it has started two 3-year projects that should create centres for talented youth (aged 14 to 18) respectively, a model for gifted education in the future. However, the Slovenian system for gifted education does not work. The detection system is blamed to find far too many gifted in the population (up to 25%) and, therefore, neglected when it comes to designing activities targeted to these children at a later age and awarding them scholarships. The scholarship money is given directly to pupils/students and there is no data and control on what they are spent. The two projects invest a vast part of manpower to meet the administrative requirements of its financers, the EU/ESF and Ministry for Education, instead of developing a working system/new model. There are already existing documented ideas and functioning solutions to the described problems which will be altogether presented at the conference and in the study.

Keywords: detection, scholarships, financing, CTY



BACK TO THE (HUMAN FIGURE) DRAWING BOARD AGAIN: GETTING TO THE POINT

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Abstract

The present study is part of two studies within 'POINT'; a research project of the Netherlands Initiative for Education Research, in which researchers and teachers collaborate in narrowing the gap between science and (educational) practice. The aim of this project is to improve the identification procedure for gifted children, by analyzing human figure drawings (HFDs). In previous studies, the drawings of gifted children and non-gifted children were compared, in order to find and validate items that were considered 'exceptional' and possible indicators for giftedness. The POINT studies are aimed at identifying exceptional items in HFDs that are drawn by children in a general population sample, in order to shine a new light on exceptionality expressed in drawings. The present study is focused on 'emotional indicators' (EIs); items that could indicate social and emotional difficulties. We examined HFDs of 206 children aged 4 to 6 years, receiving regular education. The drawings were analyzed blindly and independently by two researchers on 30 EIs. Per EI, the percentage of children drawing the item was calculated. The EIs drawn by the minority (<15%) and by the majority of the children (≥15%) will be presented. The findings will be compared to the results of the previous studies in this line of research. The continuation of this line of research should result in a well-founded diagnostic screening instrument; a stepwise scoring system of exceptional items in HFDs, with which gifted children can be more easily detected in diagnostic assessment at an early age.

Keywords: gifted children, identification, human figure drawings, emotional indicators

*Note. Did not attend the conference.



TALENTTILES: THE DEVELOPMENT OF A NEW TALENT IDENTIFICATION INSTRUMENT BASED ON TEACHERS' RATINGS

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Abstract

Talent identification on multiple criteria is a common way of considering students for gifted education services. Teacher input is highly valuable in this process, so teacher judgment and test score information are the two most commonly used sources of information when identifying students (Westberg, 2011). As part of the nationwide talent identification programme led by UNK (New Generation Centre, Hungary of Talents Program 2016-2020) we had the task of providing an online rating tool by which teachers could indicate the talent areas of their students. Through several iterations – involving the translation, application and analysis of Scales for Rating the Behavioral Characteristics of Superior Students (SRBCSS, Renzulli et al, 2009) questionnaire and a custom-made normative questionnaire - a matrix style competency rating instrument, called Talent-Tiles was developed. The primary aim of the instrument was to collect reliable and valid data about students through teacher-ratings in a user-friendly way. The Hungarian version of the Renzulli Scale (n=500) showed a high level of intercorrelation (average $r = 0.63$) between the 14 scales of the questionnaire, and the factor analysis of the instrument suggested only a single factor. Considering also the qualitative feedback of the teachers about the SRBCSS questionnaire, a new online instrument was developed, with the following attributes: (1) it takes a relatively short time – less than 5 minutes per student – to fill in the questionnaire, (2) it focuses on the behavioural characteristics, (3) measures school-related areas, (4) uses a forced-choice format and (5) addresses general competencies (eg. ability, motivation) in a domain-specific way. After the first pilot tests the *TalentTiles* seems to be an innovative, reliable and user friendly way of collecting teachers' opinions about school-related gifted behaviour.

Keywords: identification, questionnaire, teacher rating, online measure, TalentTiles



CREATIVITY AND INTELLIGENCE OF ELEMENTARY SCHOOL STUDENTS

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Abstract

The aim of this research was to examine whether there is a relation between intelligence and creativity and whether there are gender and age differences concerning the intelligence and creativity of the participants, who were elementary school students. It was also examined if the educational level and occupational differences of the participants' parents influence the intelligence and creativity of the participants in this research. 1363 students participated in the first study (691 boys, 672 girls, 743 fifth graders, 660 sixth graders). The participants were issued the *Raven's Coloured Matrices* in order to determine their IQ. The students were then divided into three groups according to their IQ level. The first group was comprised of the students with their IQ above 115, the second group included the students with IQ between 85 and 115 and the third group included the students with IQ below 85. The final study included 130 students (73 boys, 57 girls, 62 fifth graders and 86 sixth graders). They were given the Greek version of *Torrance Tests of Creative Thinking* (*Torrance Tests of Creative Thinking, TTCT*, Torrance, 2008) and the Greek Wisc - III (Georgas, Paraskevopoulos, Bezevegis & Giannitsas, 1997). In general, the results confirmed the research hypothesis. Initially, the characteristics of verbal creativity were related to the characteristics of figural creativity and the subscales of verbal intelligence were related to the subscales of practical intelligence. In addition, it was found that verbal intelligence was related to verbal and figural creativity as well as that practical intelligence was related to verbal and figural creativity. Moreover, there were gender and age differences and differences between mothers' and fathers' occupation which were not statistically significant. On the other hand, there were significant differences between the parents' educational level. Finally, there were differences between the students' creativity according to their IQ level. It was found that students with higher IQ levels scored higher on the Creativity tests and students with lower IQ levels had lower scores on the Creativity tests.

Keywords: creativity, intelligence, primary education



DOES COUNSELLING OF UNDERPRIVILEGED GIFTED STUDENTS ELICIT THEIR ACADEMIC CONCERNS?

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Abstract

The Tribal Mensa Nurturing Program (TMNP) conducts an indigenous, non-academic nurturing program for underprivileged gifted students in tribal and rural areas. It is based on the Panchakosha philosophy of human development. Counselling is an integral part of the TMNP nurturing program. However, the protocols and templates for counselling underprivileged gifted students in India are underdeveloped. The present pilot study will discuss the effect of counselling on the academic concerns and the performance of underprivileged gifted students. Counselling was conducted for 63 gifted girls at Maharshi Karve Stree Shikshan Sanstha Pune, India. The focus of the study was to understand the academic concerns of the underprivileged gifted students. The researchers observed that the main academic concerns were: fear of certain subjects, pressure from parents and teachers to achieve high grades, peer pressure, underachievement and perfectionism. To observe the effect of counselling, the academic performance of the students pre- nurturing workshop and post-nurturing workshop was analysed.

Keywords: counselling, gifted, underprivileged, Panchakosha, India

*Note. Did not attend the conference.



GIFTEDNESS IS A STATE OF BEING: FROM INTELLIGENCE TO AWARENESS

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Abstract

Education for G&T needs a broadened definition of Giftedness. Giftedness defined as an IQ of 130+ does not cover all aspects of the gifted personality. As long as the definition for Giftedness is not properly extended many problems related to Giftedness will not be met adequately; many G&T will not develop their potential or will even experience their Giftedness as a tragic gift, with all well-known consequences such as depression, burnout or even suicide. So far, we know one-dimensional and many multi-dimensional theories and models to understand what it means to be Gifted, with their consecutive approaches for teaching. Nevertheless do teachers still meet students who can perform and those who cannot. An alternative view of the state of Giftedness is the so-called heightened awareness with its 'light-incarnation'. A state-of-being which is less dense or loosely-woven with the physical aspects of our body. The consequences of this state-of-being could e.g. explain the problems in executive functions some gifted demonstrate. The inns and outs of this state-of-being will be discussed, and also its consequences for education of the Gifted.

Keywords: giftedness, definition of, awareness



ETSN – A PLATFORM FOR CREATIVITY

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Abstract

The European Talent Support Network (ETSN) was founded in 2015 as a means of connecting organisations that work with high ability students and adults. The ETSN now has over 20 Talent Centres and over 400 points worldwide, and is a continuously transforming and developing system. This plenum will allow three experts from the ETSN to introduce various aspects of creativity that the network has helped to promote. In his contribution, Albert Ziegler of the University of Erlangen-Nuremberg will point out the chances and pitfalls of networks, which can have equally positive and negative effects on creativity. Csilla Fuszek of the Budapest Talent Centre will give examples of cooperation across the ETSN which fostered creativity across Europe and beyond. Finally, Mojca Jurisevic of the University of Ljubljana will highlight the CRSN, a centre in Slovenia, as an example of social innovation and will chart the development of the CRSN in designing the tools that enhance the creative processes and have been effective at both the national and international level. Following the presentations there will be an opportunity for participants to share their own practice in this field and develop new and meaningful cooperation in the future.

Keywords: ETSN, talent support, networking

*Note. Did not attend the conference.



PROMOTING THE DEVELOPMENT OF POTENTIALLY GIFTED CHILDREN IN THE KINDERGARTEN CONTEXT

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ABSTRACT

The purpose of the educational process is to encourage the development of every child, including children with special abilities and potentials, the early identification of potentials also has a significant influence on the child's further development. Healthy socio-emotional development and appropriate educational support in the systematic approach and positive culture of the institution are essential factors for developing potentials. Quality inclusion provides an individualized approach to the child and development according to the child's needs and is carried out in cooperation of the community and a team of experts who make the educational practice more complete and better. The problem of support may arise when the institution does not have a professional development team. Action research with elements of the ethnographic approach sought an appropriate way to encourage potentials in a child. Changes were made in the environment, approach and the cooperation of parents and the social community. The research was conducted in one kindergarten in Osijek over two years. Potential of the boy M. was recognized and developed by the educators while at the same time it began improving, and the psychologist confirmed the assessment of the teacher by observing and testing. The aim of the paper is to illustrate the appropriate encouragement of personality development, specific interests and abilities of a potentially gifted child in the kindergarten context. Methods of work are systematic observation and documentation of the educational process that follows the principles of differentiation and individualization. The methodology of respecting specific interests was followed, encouraging and expanding experience and knowledge, skills and abilities, with learning style that best suits the child. Special attention was paid to influencing the development of meta-cognitive skills, more complex activities were organized in terms of abstract thinking and higher levels of thought processes, higher expectations were set, enough time was provided, stimulating creative thinking and leadership skills. A potentially gifted child has exhibited expanded knowledge, experience and abilities, expressed creativity and developed qualities. The collected documentation is systematically guided by the child portfolio.

Keywords: gifted child, potential development, documentation, educators, kindergarten

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