» NEW LANDSCAPES IN SCIENCE AND ART «

in focus: teaching Visual Culture

BOOK OF PROCEEDINGS

2017|06|23-24

1. ELTE WORKSHOP FOR ARTS EDUCATION

ELTE UNIVERSITY
FACULTY OF SCIENCE
BUDAPEST

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Introduction to the Book of Abstracts, 1. ELTE Workshop for Arts Education

The arts education community of Eötvös Loránd University (ELTE), welcomes the educators, creators and researchers of *dance, drama and theatre, music and the visual arts*, *child and youth culture, mathematics and the natural sciences*! Participants of the 1. ELTE Workshop for Arts Education have come here to build bridges and walk through existing ones between the intersecting cultures of arts and sciences. The twin event of the Hungarian national conference and the English language workshop will feature more than 120 presentations and symposia, workshops and exhibitions as well as several community events of arts and design.

The 1. ELTE Workshop for Arts Education was conceived to serve as *a catalyst for new encounters*: mutually enriching dialogues between art forms and genres, discussions and new collaborations among artists and scientists, performances that unite us in the enjoyment of art, and presentations that inspire us to embark on new research trajectories and educational practices. During the two-day event, we may gain a broad international perspective of arts education in Finland, Luxemburg, Romania, Scotland, Slovakia and The Netherlands. We may realise the need for arts-based literacies while getting acquainted with the *Common European Framework of Reference for Visual Literacy*, result of an international research project involving 19 countries. We may engage in a Romanian drama workshop, integrate mathematics and art at the exhibition of the International *Experience Workshop and the Bridges Organisation*, and be tempted to join the International Drama and Theatre Education Association *(IDEA)* or the International Association for Polyaesthetic Education *(IGPE)* while listening to their leading representatives.

A wide range of *exhibitions* invite us to explore the past of art education through works selected from the Archives of Dusseldorf University, ELTE's Faculty of Primary and Pre-School Education, the Hungarian national and municipal competitions in art and design, and several innovative educational and art therapy programs. Research reported here is often linked to the Research Program on Discipline Based Educational Practice of the Hungarian Academy of Science (MTA). One of these groups, the Visual Culture Research Group of MTA and ELTE is the organiser of this event.

The workshop is the first event of a series, to be organised each year at one of the *five faculties of ELTE*, where arts education is taught and researched: the Faculty of Education and Psychology, Humanities, Primary and Pre-School Education, Special Education, and the founding host of the event, Faculty of Science. Visual arts education is in the focus of the event this year, with the motto taken from George Kepes: "*The New Landscape in Art and Science*". Visual culture, the name of the Hungarian discipline for education through art from the 1980s, indicates our perspective: to develop flexible and up-to-date visual literacy that involves creative expression, design and scientific visualisation as well, opening new ways for a co-operation of cultures. Our supporters: ELTE, Hungary's oldest research university, the Hungarian Academy of Sciences, the Hungarian Academy of Arts and the Hungarian Association of Teachers of Art indicate the *creative synergy of arts and science* – an idea to which we dedicate this workshop.

We hope that you, visitors of the conference and readers of the proceedings, will find this collection inspiring and inviting, and we may meet you again in 2018, at the *2. ELTE Workshop for Arts education at the Faculty of Arts*!

ANDREA KÁRPÁTI,
Founding Chair of the Workshop
TÜNDE SIMON,
Scientific Secretary of the Workshop

Visual Culture Research Group of the Hungarian Academy of Science and ELTE University

Budapest, 22 June 2017

The Visual Culture Research Group
of the Hungarian Academy of Science
and ELTE University celebrates its member,

EMIL GAUL

internationally recognised art and design educator
and scholar,
on his 70th birthday!

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1.

SCIENCE AND ART

PLENARY LECTURE

Heat up the STEAM! Mathematics and arts learning with hands-on tools and technology in multi- and transdisciplinary context

*KRISTÓF FENYVESI, **
ZSOLT LAVICZA **

* University of Jyväskylä, Finland
** Johannes Kepler University, Austria

The integrated approach to science-, technology-, engineering-, arts- and mathematics-learning–known as STEAM– is becoming increasingly important. Traditional models of accumulating knowledge through direct teaching are being replaced by networked models of learning. The development of collaborative problem-solving skills and enabling students to discover unexpected connections between different aspects of various phenomena are not only effective tools, but also ambitious goals of today's education. Phenomenon-based learning opens schools to become a multi- and transdisciplinary, experience-oriented and collaborative educational environments offering new opportunities for both mathematics and art learning in parallel.

In this presentation, we will introduce the Experience Workshop STEAM movement (**www.experienceworkshop.org**) and its' connections with global initiatives in the field, such as the world's largest math-art-education community the Bridges Organization (**www.bridgesmathart.org**) and the International Symmetry Association (**www.symmetry.hu**). The presentation will also touch upon 'multidisciplinary learning modules' as a part of the Finnish curriculum and show some examples of how it can be implemented in schools and out-of-school settings to enhance mathematics and arts learning. As technology is transforming learning environments and becoming part of learning in the 21st century, it is important to discuss experiments of connecting hands-on and digital modeling in the learning process.

There have been numerous attempts to integrate technology into education systems, but without systematic development and research the success of these attempts have been limited. Recently, together with our colleagues in Hungary, we developed the Geomatech project (**http://geomatech.hu**) to design high-quality teaching and learning materials for all grades in primary and secondary schools in Hungary. In addition to material development, Geomatech offered 60-hour professional development courses – including experience-oriented education and mathematics and arts connections – for more than 2500 teachers in 950 schools in Hungary.

The technology background of the project was offered by GeoGebra (**http://geogebra.org**). All activities of the Geomatech project were assisted and evaluated by a research team offering support for pedagogical resources involving teaching methods based on highly-respected Hungarian Teaching Traditions by

Experience Workshop in the Yeshiva near Jerusalem College of Technology, Jerusalem in 2017 March

Experience Workshop in Cambridge University's Primary School, 2017 March.

Pólya, Lakatos, Varga and Dienes as well as successful technology integration programmes from other countries. In addition, in Geomatech we aimed to involve and collaborate with as many experts and researchers as possible from around the world. We based our work on previously successful projects, collected ideas from the GeoGebra community, and invited colleagues to work with us in Hungary. The Geomatech project became an incubator for future projects and test ground for various ideas. In our talk, we will outline the Geomatech material development and teacher training initiatives; the network building process for involving schools; the directions for software development; the aims of the Geomatech research and evaluation team. We will also give examples on Geometry applications of GeoGebra, and the latest STEAM-related achievements at the University of Jyväskylä and Johannes Kepler University's STEM Center and hope we can discuss possible collaboration opportunities.

EXPERIENCE WORKSHOP
THE EXPERIENCE-CENTERED
MATH/ART MOVEMENT
www.experienceworkshop.org

1.

SCIENCE AND ART

SYMPOSIUM

Experience Workshop's STEAM Space with puzzles, games & learning tools:

4Dframe, caraWonga, ITSPHUN Gondos ScienTiles, Jomili, LogiFaces, LUX, Saxon's PolyUniverse, Zometool and many more!

Eötvös University, Faculty of Natural Sciences,
Gömb Aula
Address: Budapest, Pázmány Péter sétány 1/A.

Play, Interact, Cooperate, Discover, and Experience! The *Experience Workshop – Movement for the Experience-Oriented Education of Mathematics and Arts* has started in 2008 and currently it is most active in Finland and Hungary as a collaborative effort of mathematicians, artists, teachers, parents and children. We have organized various *math-art-education events and interactive exhibitions, workshops, seminars and trainings all over in Europe, Asia and America.* Over the years, more than 30,000 people participated in our events. *Experience Workshop's international network and community* has hundreds of active members like teachers of various subjects, artists, scholars, craftsmen and toymakers from Finland, Hungary and other countries all around the world.

Experience Workshop experiments with various educational approaches to give opportunity to learn mathematics through the arts, and to make art with mathematics. Our aim is to involve the children, teachers, and families into a vibrant and creative dialogue between the mathematical and artistic way of looking at our world. *Experience Workshop's* main research interests involve, but not limited to STEM and STEAM education; inquiry-based, cooperative, playful and experience-oriented mathematics education; connecting problem-solving processes in science and art education; connecting hands-on activities and digital modeling in mathematics, science, art and design education; science&art connections in learning; phenomenon-based learning and co-teaching; inter-, cross- and transdisciplinary management and trans-curricular leadership in education.

Experience Workshop Movement publishes various kind of printed and on-line resources for teachers, parents and students: books, apps, science and art albums, teacher resources and scientific articles. Most of our publications and resources are open-access. *Download one of our latest hand-book for teachers and GeoGebra app-collection from www.vismath.ektf.hu/exercise-book Experience Workshop established International Traveling Exhibitions of Mathematical Art in Hungary and in Finland,* which can travel with *Experience Workshop's* events. The collection includes artworks, scientific modelling tools, math-art puzzles, and other spectacular objects, which have a key-role at *Experience Workshop's* events.

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MATH/ART MOVEMENT
www.experienceworkshop.org

Art and science at the Hungarian Museum of Mathematics

FERENC HOLLÓ-SZABÓ, AND JÓZSEF ANTAL,
Eötvös Loránd University, Faculty of Science

Key words: mathematics, scientific visualisation, visual arts

The Hungarian Museum of Mathematics (HuMa) is the mathematical collection of the Faculty of Science at Eötvös Loránd University. Originally called the Tibor Bakos Mathematical Collection, the museum was founded in the 1990s. Its objectives include the visualisation of mathematics in order to make it more attractive and seek its relationships with other genres of science and the arts. Visual arts provide powerful means of scientific visualisation (for example, artistic puzzles and models constructed from a variety of materials) that make mathematics education more effective and enjoyable, and HuMa explores innovative ways to realise these aims.

The collection includes a large amount of models and objects, games of logic, volumes of studies and journals on mathematics and education as well as task collections of mathematical competitions. Legacies of great mathematicians are often donated to HuMa.

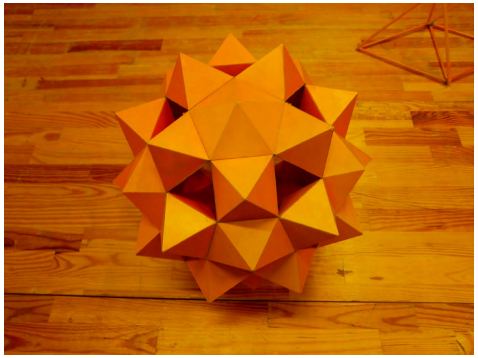
It is one of the major tasks of the museum to find and exhibit models and tools to illustrate and thus explain laws and theorems of mathematics. Several three-dimensional objects are exhibited made of cardboard, polistyrol or even straws. These models are being prepared by staff and students of the university, and thus the collection is enriched collectively. Foreign artists like Magnus Wenninger and Dan Suttin are also included in the collection.

During this event, we organise two workshops and an exhibition, featuring artists whose work can be related to the intersecting realms of art arts and science: János Saxon Szász, Zsuzsa Dárdai, Dániel Erdély, John Hiigli, Ildikó Kökény-Kovács, Éva Richter, Magnus Wenninger, and Sándor Kabai. The exhibition will be opened by Ferenc Holló-Szabó, mathematician, Director of the museum.

During the first workshop, moderated by Zsuzsa Dárdai, art critic, and János Saxon Szász, artist, we introduce the PolyUniverse toy collection (geometric-combinatoric-symmetry skills development puzzles). The second workshop is entitled “Symmetries from the beginnings of human history till the present day”, with Éva Richter, textile artist and Szaniszló Bérczi, physicist, as co-ordinators.

Web page: http://www.cs.elte.hu/~matmuz/

Facebookpage: https://www.facebook.com/ELTE.MaMa/



1.

SCIENCE AND ART

LECTURES

Beauty – game – mathematics

MÓNIKA BAGOTA

Eötvös Loránd University, Faculty of Primary and Pre-School Education

Key words: Methodology; Geometry; Shapes

The process of creation has many functions in the process of teaching: the children collect experience, get information and make thinking operations. During the process of creation they analyse, they look for relations and they make synthesis. The experience during creative activity helps more in the understanding of concepts then the analysis of watching of objects. In this work I would like to show some games and some activities which can be applied successfully both in the methodology of mathematics for pre-school teacher students and in the geometry courses for primary school teacher students.

Roger Burrows: Images – The Ultimate Colouring Experience: in this book on each page we can see plane figures put beside each other in different orders. Our task is to colour freely the network chosen by us. As we colour the figures, new and new pictures appear: there are abstract patterns, there are animals, flowers or a complete picture.

IZZI game (by Thinkfun): there are 64 small tiles of square form. The task is to place the tiles in a way that they should form a big square. There is only one thing to concentrate on: the black and white figures on the tiles should be fitted in such a way that they should touch each other with their own colour. In the IZZI solution we can make a lot of different combinations, we can construct many connected geometric forms. The final result is not only the solution but a beautiful visual formation too.

Poly-universe Game family by János Szász Saxon: the basic forms are: triangle, (almost) circle, square; the colours are: red, yellow, blue, green. Each basic form has further three forms in different colours (we have to half the lines and the diameter (in case of the circle)), thus each basic form consists of red, yellow, blue and green colours. Because of the exact sizes we can put not only similar but different shapes freely beside each other. The first step in forming the game is free creation, during which more and more beautiful formations can be constructed. After the free creation process there can follow the process of formation according one or more conditions or finding the solution under a given condition or finding every solution. Several interesting questions can be raised during the game: Use for example only the circle basic form! Place six circles such that they form a "wavy" chain such that the individual elements are connected in such a way that identically coloured half circles and of the same size are fitted together. How many chains of consisting of six circles can be formed? How many chains of length six are there whose basic colours are the same? Can one form a bigger circle from six such circles, where the basic colours of the circles are the same and the elements are connected at identicaly-ly coloured half circles of the same size? If this can be done how many circles can be formed in such a way?

"If we let the students to find the way to solve a problem then we expect creative activity which will be completely their own, in which they can follow their own way of thinking and they can use the knowledge, the ability and instruments which they possess." (Eszter C. Neményi)

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IZZI game (by Thinkfun)

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Szász Saxon, János: Poly-universe Game family

Everyday creative science in a glass jar: on the boundary of science and art with the help of contemporary art

DORKA KAPOSI

Deák17 Gallery for Children and Youth Art

Key words: integrating science and art in education, interdisciplinarity, museum learning

Contemporary art's use of material and scope of design is innovative, it usually uses new media and quickly adapts to the latest technologies and changes. Its flagship feature is interactivity of the kind that is ever more intertwined with youths' lives. The artist draws the viewer into the process of creation, thus in numerous instances it presents young people with the task of extracting the ideas from a work of art, even with the assistance of a museum pedagogue. The catchphrases of our age, open-mindedness, experimentation, innovation and creativity are characteristic of contemporary art, too, and these competencies are subjects that are "expected" of today's younger generations. We think that the professionalism of museum pedagogy is enriched if, in addition to artistic questions, students flourish in knowledge, be it even of a scientific nature, reflecting the present. For precisely this reason, contemporary art is important for students, and it really speaks to them!

With our exhibitions, we strive to show the work and manner of perception of children and youth. Additionally, we aim to familiarize and endear children and youth with contemporary art. Students that visit us can often encounter contemporary artists and their contemporary works, in a single space at a joint exhibition. In the course of museum pedagogy sessions, students experience and can explore in an active and creative manner the questions, relevant to their own age group, that are raised by the exhibitions. We also pay a great deal of attention to making the given topic experienced in the course of the creative process. The practice of making art is not our only goal in these sessions, rather we see it as an instrument that goes beyond visual education, even sensitizing participants to scientific topics, too. We operate as a kind of extra-curricular school, fostering close ties with schools, art education institutions and teachers. We can adapt to the curriculum, but we can also go beyond it. We complement the knowledge that can be gained in school, we teach the kind of techniques that cannot be acquired by students in the framework of their classes or can only be acquired with great difficulty.

We presented a number of light-themed and light art exhibitions and accompanying programs in 2015 related to the International Year of Light. (The goal of this initiative was to call attention to the importance of the role that light and technologies connected to light play in our lives.) Among them was *LUMINA – Homage to György Kepes* (November 4 – December 31, 2015), our exhibition of contemporary art honoring the work of György Kepes which showed the different forms light can take. Through a number of art works, we looked at the light-shadow effect, reflections, and the differences as well as possible similarities between spiritual and technical light. Another was *Light Facts* (November 14 – December 31) which comprised two- and three-dimensional works showing the roles natural and artificial light play in our lives, as well as its impact on the mundane, celebrations and the world of fantasy. The works were submitted to a contest for primary and secondary school pupils called by the Hungarian Academy of Sciences.

The reception and processing of these contemporary works presented the students with both a challenge and an opportunity for discovery. For example, light is not only the namesake of Tamás Szvet: in order to understand his work, the active involvement of the students was necessary as well as the application of a basic understanding of refractivity. The works of Erik Mátrai (*Baptismal Fount*, 2012 and *Bowl*, 2012) feature the use of everyday materials available to everybody. Visitors were dazzled by the sheer beauty of these light works and light experiences.

In connection with the International Year of Light and our light-themed exhibitions, we created a museum pedagogical activity in which equal stress is placed on art and science. In this way, we could recommend an innovative program in the framework of which we could get to know the natural sciences as well as the artistic side of light with the help of the works in our exhibitions at the time. The students used a simple glass jar and special, but easily obtainable, fluorescent paint to make their own personal creation. The students were told the topic, the possibilities and the initial steps of the activity, but they further developed the method on several occasions, establishing new techniques with the help of the tools available. The structure of the activity was suitable, too, for adaptation to various classes' curriculums or special needs. In this way, an opportunity was created for exposure to unconventional topics, such as the ancient Egyptian cult of the sun, bioluminescence or the physiology of sight with the help of light art.

On the basis of feedback, all ages are in great need of museum pedagogical sessions. With the help of the aforementioned activity, not only did the students successfully learn something, they could repeat the activity and further process the artistic "experiment" they made in the surroundings of their own homes or schools, and all without the help of special equipment or a laboratory environment, rather with simple, easily obtainable, everyday materials. We can also expose disadvantaged or disabled children to an abstract, somewhat complex topic that may be deemed too scientific for the classroom. The activities work well with integrated groups, too. After getting to know the topic of the exhibition and the individual works, the students can process the universal problems and questions projected on their personal world with their own creations.

We think that the arts and the sciences do not necessarily have to be separated, not even in the area of museum pedagogy. Children interested in the humanities and the sciences can discover together messages and knowledge at the same exhibition. It increases the proximity of this often segregated approach.

When selecting contemporary works, we strive to include innovative points of view, topics or techniques in our exhibitions, and by displaying children's and contemporary works reflecting on the same topic, side by side, we highlight the similarities or differences between the thinking and world views of the different generations.

The active reception of contemporary art (and with it, for example, scientific findings) and the interpretation of its messages develops students' ability to form opinions, analytical skills and participatory behavior. They will become more open to the world and to new situations, which increases their ability to adapt. In the artwork is concealed the opportunity to construct oneself, to develop personality.

Be STEAM!
The city as a classroom

DÓRA KOMPORDAY[1], AND ANDREA KOVÁCS[2]

[1] MOME Digital Craft Lab

[2] Let it Be! art agency

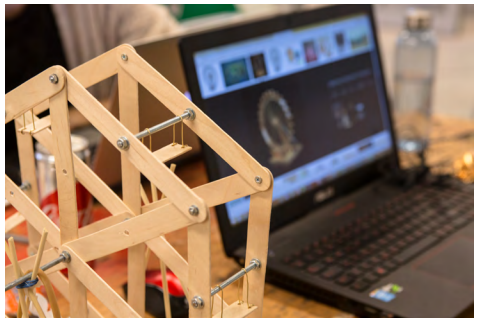
Innovation and creative, collaborative problem-solving are core skills for the 21st century's education, and the development of these skills requires new tools and methods. The innovative, multi-disciplinary material and technology research laboratory of *MOME Digital Craft Lab* and *Let it Be! art agency* are looking for intersections between the digital and analogue world, reacting to the challenges offered by the information technology society of our days, and emphasizing the importance of knowledge that can be employed successfully day by day.

THE STEAM METHODOLOGY

The purpose of the *'Be STEAM! / Budapest – The city is a classroom'* project is the development of an open-source methodology, based on knowledge fusion and sharing, that can be integrated in public education, and which is freely available for everybody. This methodology opens up new ways towards modern strategies of skills development both in content and aesthetics of appearance by adding *Art & Craft & Design* (A) to the *Science – Technology – Engineering* (STEM) methodology. The focal topics of the STEAM program are using experience-based and horizontal thinking to join different knowledge areas both in theory and practice, thus demonstrating the combination possibilities of manual and digital designing through the steps of crafting the prototype of a functional item (or set of items)

COOPERATION NETWORK

The program plan of *MOME DC Lab* is strongly connected to the development of the *Moholy-Nagy University of Art and Design Campus – Creative Innovation and Knowledge Pool,* both in content and infrastructure design. The goal of the DC Lab projects is to create a Research & Development lab which is unique in Hungary with its activity and is also cutting edge in a European context and which ensures free flow of ideas and practices between the institutes of the university and the different institutions of public education, such as elementary schools, secondary schools,



leaving it open towards Hungarian and international research laboratories. Our cooperating partners are both rural and foreign higher education institutions, 3D-printing firms, innovation labs and manufacturers.

DIGITAL THEME WEEK

In the frame of *Digital Theme Week 2017* we set the goal of implementing a pilot project that could demonstrate our assumptions in real educational situations, and that enabled the teachers and students to map the constantly changing world surrounding them based on the problem solving methods of STEAM methodology. The project does not adapt new technologies to the existing methodology of education, but wants to demonstrate a radically new educational way, based on learning by doing with innovative technologies. Students learn science, engineering and art by creating inventions to solve real-world problems, and by designing scientific experiments to examine their own theories about nature, culture, urban studies and the world of objects.

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'My Little Beton' https://vimeo.com/129707378
'Add to Cart Jewellery' https://vimeo.com/97411696

More information

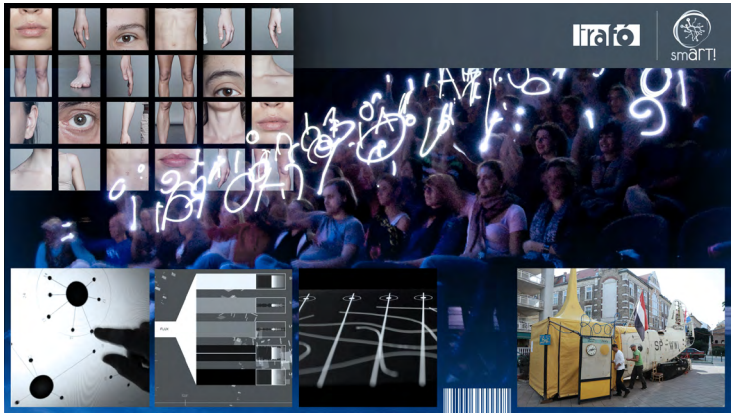
MOME http://mome.hu
MOME Digital Craft Lab http://digitalcraftlab.mome.hu
Digital Theme Week http://digitalistemahet.hu
Let it Be! art agency http://letitbeartagency.com

Trafó House of Contemporary Arts: smART! PROGRAM

ANDREA KOVÁCS
Trafó House of Contemporary Arts

Trafó House of Contemporary Arts is a unique venue in Budapest that promotes and represents today's international arts and culture scene. The programme of Trafó offers a great variety of genres including theatre, dance, circus, music, and visual arts. All of the events are presented with creative authenticity. The main objectives are to address social issues in the context of arts and culture and to exhibit art projects that are inspired by the latest technological innovations. In doing so, the cultural institute aims to follow international trends. It is unlike any other arts venues in the Hungarian capital: here one can gain a global perspective.

In the autumn of 2014 *Trafó* launched the *smART! Program* to introduce new productions that experiment with technological innovations to a wider audience. These shows incorporate low-tech and high-tech solutions, technological developments and performative genres like theatre, music, and circus. In addi-



tion to international partnerships, there are several Hungarian examples of such interdisciplinary co-operations that create bridges between various creative fields. *Trafóklub* creates a forum where innovators and artists can meet and share their work, disseminate and expand their knowledge and learn about user friendly and available innovations.

Events of the *smART! XTRA* interactive presentation series provide a platform for three artists per night, who present their current art projects and future plans. Also, the audience is involved in a moderated discussion. They can even test the previously installed devices, applications, and handheld interactive tools in order to gain some impression of what experience based learning really means. All the invited guests are outstanding representatives of their professions. Coming from different directions to this intersection of arts and technology, the presenters together can help us understand what media labs, start-up ventures, and design workshops with digital thinking actually do to expand their profiles.

The *Gondolat Generator* theatre in education program generates a dialogue between secondary school students and contemporary artists. It is a complex educational package that can be integrated into the autumn or spring semester learning programs of schools. In recent years, schools have been able to compose their own curricular timetable, add events before or after the regular lesson hours, based on individual choices of their student groups and elaborate on topics which are currently affecting them.

More information

www.trafo.hu
http://letitbeartagency.com

A Study on STEAM Education in Korea

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Key words: STEAM education in Korea, future society, frame of criteria, self-directed learning

STEAM education in Korea has originally begun to solve problems caused by the evasion of science and mathematics. STEAM in Korea has originally begun in 2011 to improve problems of science and mathematics education (The Korea Foundation for the Advancement of Science and Creativity, 2015). The starting point of STEAM education in Korea includes the 1st engineer training support basic plan, reinforcement of convergence education in 2009 revised curriculum, and the 2nd scientific & technical labor force training support basic plan (Lee & Yang, 2013).

With the establishment of the Ministry of Education, Science, and Technology in 2008, 'the 1st engineer training support basic plan' from 2006 to 2010 played a huge role in the generation of STEAM. As the class hours of arts secondary education were reduced, the necessity of integrated education has been rising as its coping measures (Lee, 2007). 'The 2009 revised curriculum' is emphasizing that convergence education should be reinforced to cultivate highly-advanced creativity and character required by the future society (The Ministry of Education, Science, and Technology, 2009; Revised Curriculum, 2009).

In 2011, 'the 2nd scientific & technical labor force training support basic plan ('11-'15)' applying to the stage of elementary/secondary education, was established. Initially including the reinforcement of elementary/secondary mathematics & science education as the first step to foster scientific/technical labor force, it became a direct background to begin Korean-style STEAM, added with arts (A) element. 'The 2nd scientific & tech-

nical labor force training support basic plan' aimed to foster creative scientific & technical manpower for the creation of added value and national talent cultivation in order to cope with rapidly changing society.

From 2013, the Ministry of Education encourages to establish plans like curriculum and teachers training to practice STEAM, and also requests to reflect STEAM contents to school curriculum plan and school education plan. According to the 2014 statistics, 120 tasks of STEAM R&E have been secured. Supporting 280 R&E schools, total 32 future-type science classes were operated. Also, 180 experience-class operating schools were supported. Based on the support of professional institutes, around 800 research staffs developing programs and 21 outreach institutes were supported. According to the 2014 statistics, total 184 STEAM leader schools and 577 STEAM teachers' research groups were selected and supported. Supporting 2900 teachers of teachers' research groups, around 100,000 teachers have completed the teachers training (The Ministry of Education, The Korea Foundation for the Advancement of Science and Creativity, 2015). Also, teachers' workshops, STEAM R&E festivals, symposia, and performance presentations are supported.

The Korea Foundation for the Advancement of Science and Creativity has announced the learning criteria as a frame of smooth STEAM education for teachers. As elements of STEAM education and the frame of criteria, the presentation of situation, creative design, and emotional experience have been suggested.

In order to inspire students' creativity, imagination, and interest in science, thus, the subject of arts is applied to STEAM classes. Also through the introduction of learning by applying arts to difficult mathematics and science, it has educational effects to encourage students to passionately challenge new problems and also to establish opportunities to motivate for the next challenge based on the pleasure of success through arts activities when having opportunities to do self-directed learning (Lee, 2007).

The aim of this study is to examine the STEAM education in Korea, and to conduct research on application of arts through the criteria of STEAM course.

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The unity of ornamental art and mathematics in a pattern group originated from prehistory, demonstrated by a pattern-generating cylinder)

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Key words: modularity, cognitive processes, symmetry phenomena

A basic geometrical pattern group was born in the Stone Age (at the end of the Palaeolithic) and has become widespread since that time. Its origin can be traced back to plaiting basketry technology. The earliest motifs and religious symbols of our global cultural history, such as the zig-zag, triangle, square and the forms based on the meander hook (meander and swastika) belong to this pattern group. The question arises: what kind of phenomena may be behind this „universal" occurrence?

The extensive temporal and spatial spread of this pattern group is due to the geometrical rules of plaiting technology, and the cognitive processes of the human brain. In all probability, these two factors together resulted in and determined the development of the same patterns in different cultures, regardless of their location and their historical age. The patterns are repetitive in nature and constructed of diagonal line groups, that are arranged symmetrically in square or rectangular modules. The number and direction of the lines in the modules and the modules relative positions determine the patterns they compose.

Module boundaries are part of the background structure and can be geometrical operation axes (mirror, glide and rotation). When plaiting the patterns or constructing them on the surface of different objects, it is helpful to know the hidden (discrete) geometric underlying structure, to recognise visible symmetric arrangements and – as a basic criterion- to employ counting.

In this pattern group, form creation is based on geometric transformations and counting, so mathematical thinking is clearly manifested. The development of these patterns can be demonstrated within a technological/geometrical evolution system, in which the particular patterns evolve from only one simple structure step by step after minor structural changes. A pattern-generating cylinder has been invented to show this evolutionary process in three dimensions. It has rotatable rings on its surface to create the most ancient geometric forms and patterns using different series of combinations that is algorithms. The "cylinder of symmetry" is a playful, practical method to demonstrate the basic geometrical and mathematical relationships of the pattern group that correspond to the mathematical knowledge of Grade 5 and 6 in primary school.

In this way, harmonic form structures can be used to demonstrate basic arithmetical operations, involution, geometric transformations, the use of coordinates, ratios and to examine the properties the triangles, especially the relationship between the right-angled triangle and the square. Patterns originaly created in plaited structures from vegetal raw materials, were abstracted into decorative patterns, and because of their aesthetic power, and formed an important role in ornamental art. Moreover, they are able to illustrate basic mathematical phenomena due to their inherent geometric and arithmetic rules.

VISUAL ARTS AND DESIGN EDUCATION

2.

PLENARY LECTURES

Contemporary arts education in the Netherlands: who owns the curriculum?

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Netherlands Institute for Curriculum Development (SLO)

INTRODUCTION

Changes and developments in society demand a re-orientation on knowledge and skills that need to get attention in education in general, and specifically in arts and cultural education.

In the Netherlands a debate is going on about the rational, aims and objectives of future-oriented education. The results will also have implications for arts and cultural education. The debate started in 2014 with a national brainstorm about the question which knowledge and what skills pupils in primary and secondary education should obtain in order to be prepared for their future. The debate was followed by a broad societal dialogue organised by a commission that was installed by the Ministry of Education, Culture and Science. This commission published its advisory report at the beginning of 2016. Central in this report are the three key functions of education: the development of knowledge, personal development and social development. Apart from subject-oriented education the coherence between subjects and subject-transcending skills are also considered essential. Furthermore, students should be given more freedom of choice. This rational was presented to groups of stakeholders, such as teachers and subject councils, in order to find out whether it could rely on their support. Pupils and parents considered it to be time for a curriculum revision. School leaders, teachers, subject commissions and teacher trainers supported the advice to a certain extend. Teachers came up with the question of ownership of the curriculum. In the meantime many new reports have been published, and discussions are being held between groups and institutions with conflicting results. In March 2017, the Netherlands elected a new parliament and are in the process of forming a new government and the policies it will persue including the curriculum reform. Awaiting this decision the entire curriculum is being reconsidered, including arts and cultural education.

This integral curriculum reform offers opportunities to lever several problems in the curriculum for arts and cultural education for 4 - 18 years old pupils. This paper contains an overall picture of present arts and cultural education in the Netherlands, of the most pressing sector-transcending issues, and of recent developments.

1. CHARACTERISTICS OF ARTS AND CULTURAL EDUCATION IN THE NETHERLANDS

One of the characteristics of arts and cultural education in the Netherlands is its great variety in rational, content, subjects, terminology, aims and objectives, and their interpretations in educational practice. There is a permanent debate about how ‘arts’, ‘culture’, and ‘cultural education’ should be defined.

Table 1: Variety in statutory provision per educational sector

Primary education	The government has formulated three global attainment targets for the subject area cultural orientation (arts orientation), referring to the fields of expression, reflection and cultural heritage. Pupils are allowed to create, live and experience things in the broad field of arts and culture.
Special primary and secondary education	The limited amount of attainment targets are subdivided into the subjects drawing, arts and crafts, music, play and movement. The attainment targets in secondary special education are ordered in several graduate profiles, depending on the pupil’s future perspective.
Lower secondary education	The subject area arts and culture has five global attainment targets which aim at a broad orientation on arts and culture. These five attainment targets emphasize both the common and separate aspects of the various artistic disciplines and can be defined as skills. Pupils learn how to produce, draw, act, dance, and make music.
lower secondary vocational education	‚Arts subjects 1’ is compulsory in the common part of the four learning pathways. Students participate actively in at least four cultural and artistic activities and produce and present their own work. At the two highest levels of the learning pathways students can take an exam in an arts subject if the school does offer one. Examination programmes exist for visual arts, music, dance, and drama. With the renewed vocational programmes students may choose craft programmes from the school-specific curriculum.

Upper secondary education	The subject 'cultural and artistic education' is compulsory for all students in upper secondary education. The arts subjects chosen are divided into two systems: examination subjects old style and new style. Old style arts subjects are music, and drawing, arts and crafts and textile. New style arts subjects are (general) arts, combined with visual arts, dance, drama and music.

The differences in arts and cultural education between and within schools can partly be explained by the variety in statutory regulations for the several educational sectors (see table 1). The regulations for primary and lower secondary education are based upon global attainment targets. Schools have the autonomy to decide on what they offer to students concerning enriching (broadening or deepening) activities, by a mono-, multi- or interdisciplinary approach.

Example of one of the five attainment targets for the subject area arts and culture in lower secondary education:

By using elementary skills the student learns to examine the expressiveness of various artistic art disciplines and learns how to apply these skills in order to express own feelings, to keep experiences, to shape imagination, and to realize communication.

In upper secondary education two systems function side by side. Schools can choose between the provision of examination subjects 'old style' and 'new style'. The new-style arts subjects are called new because they were introduced at the end of the 20th century next to the existing ones. The old-style arts subjects emphasize the theory and the practise of the subject (drawing, arts and crafts, textile and music). New style is a combination of a multi-disciplinary theoretical approach with a practical part of one subject: visual arts, music, dance, or drama.
In upper secondary education students may choose one arts subject from the school-specific curriculum as an examination subject. The practical subjects are being charged with conducting a school exam, whereas the theory of the arts subjects are charged with a national central examination. The content of the subjects are determined by the exams.

Primary education shows big differences amongst schools regarding arts and cultural education, often due to individual qualities of general educated teachers. In order to strengthen the subject expertise of teachers in primary education in the field of artistic orientation several professional development courses are being organized. This has resulted in a small increase of subject-related teachers in primary education. Secondary education schools have arts classes or cultural related streams. So called 'culture profile schools' pay much attention to arts and culture and aim for integration of arts and culture in other subjects, too. Teacher education institutes for arts subject teachers are available. Teachers can follow a master program on 'arts education'.

The autonomy of Dutch schools with respect to art and cultural education has resulted in variations of teaching and learning art and cultural education in the Netherlands: learning with arts, learning from arts and learning through arts. Schools decide upon their ambitions with respect to arts and cultural education. The level of artistic orientation varies, so does the attention that is given to it. The further students' progress in their school career, the more demanding examinations become and this has consequences for the way students experience arts and cultural education.

2. SECTOR TRANSCENDING ISSUES

The expected curriculum reform provides chances for levering the following issues that occur roughly in all educational sectors.

An imperfect common basis

The lack of a clear conceptual framework, the various visions and interpretations, (examination) programmes on the one hand, and the autonomy of schools on the other hand, do challenge teachers in creating a common basis for art and cultural education. Even more so because teachers should also keep their teaching up to date, decrease overload, create a coherent programme and develop curricular strands within and between educational sectors. In general, teachers do not have much experience in developing school-based curricula. Another dilemma is the fact that Dutch teachers do not have enough time for curriculum development at the school level.

Limited coherence and curricular strands

It appears to be difficult to develop a coherent and continuous programme from primary up to secondary education. Table 1 shows the considerable gaps between the global attain-

ment targets in primary education and those in lower secondary education for arts and culture. Also gaps are apparent between the global attainment targets for lower secondary education and the specific attainment targets for upper secondary education. Furthermore, the choice of a school for an arts subject 'old style' or 'new style' influences the development of curricular strands. During the past few years most of the attention was paid to developments within the sector and less to the development of curricular strands. This means that not all students have a comparable basis for the transition from one sector to another.

New conceptions demand an update of the attainment targets

Except from the examination programme for cultural and artistic education in upper secondary education, since 2006, the attainment targets have hardly or not at all been revised. Yet, the world of arts and culture is constantly on the move, also because of technological developments. This results in new conceptions of art and new (mixed) forms of art which on their turn influence the production and consumption of arts and culture and its function in society. It is possible to take a virtual tour in a museum, or to get acquainted with the cultural heritage and entertainment. Festivals and the experience culture receive great interest. This strongly visual composed society demands other skills. Nowadays, students come into contact with increasingly complex means of audio visual media and visual means of expression, already at a young age. Apart from that, there is an increasing interest in the development of creativity and the way in which art and culture education can contribute to that. This raises the question if, to what extent and in which way the current curriculum for arts and culture should be updated.

3. RECENT DEVELOPMENTS

The impression might be that within the arts and cultural education only the essential maintenance is done at the moment. There are definitely committed efforts in different areas. For instance, in order to improve the quality of cultural education in primary education the attainment targets have been elaborated in an exemplary curriculum framework. For music a so-called impulse arrangement was introduced with the name 'More music in the classroom'. Within the structure of the new examination programmes in lower secondary vocational education it is possible to offer craft programmes like photography, illustration, fashion and design. The examination programme cultural and artistic education for upper secondary education has been revised.

However, as stated before, the activities between the educational sectors have been insufficiently adjusted to one another. The question is what initiatives will need to be adjusted in favour of creating a more robust curricular strand.

Some lessons from the curriculum change process so far can be drawn. The advisory report did not only focus on the rational of education (what should students learn in contemporary education?), but also focussed on the content and position of specific subjects. It was suggested that the existing structure of subjects needed to be changed into knowledge domains in order to emphasize the coherence between subjects. Thus, all arts and cultural subjects were ranked among the domain 'Language and Culture', which led to confusion and discussion in the field. Subject unions and teachers could not relate to this proposal and felt they were consulted insufficiently. The main lesson from the curriculum reform so far is to involve teachers as early as possible in the process of curriculum reform on a national level. Dutch teachers have emphasized that they want to be the owners of this process and are willing to take up this role.

In April 2017, after the debate in government about the direction for and approach of the integral curriculum reform, the decision was made to start the revision with a limited number of subjects or learning areas. Concerning arts education, the government has requested whether or not a renewal of the curriculum is indeed necessary. In case the answer is yes, the arts education will be included in the set of selected subjects. At the time of writing this article, it is uncertain what the follow-up will be.

The Common European Framework of Reference for Visual Literacy

Structure, content and its potentials for other fields of aesthetic education

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WHY A 'EUROPEAN FRAMEWORK OF REFERENCE' FOR THE SUBJECT 'VISUAL ART'?

We face a discrepancy between the importance of the art subjects (music, dance, drama, visual art) and their marginal position in educational systems, e.g. when it comes to resources for good curriculum development. This calls for a combined effort. Therefore the '*European Network for Visual Literacy' (ENViL)* was founded in 2010, initially by curriculum developers. (In the meantime ENViL connects more than 50 teachers, researchers and teacher trainers from fifteen European countries.) To support the work not only of curriculum specialist but also of all players in the filed the network began a bottom-up process for the development of a "Common Framework of Reference for Visual Literacy" (*CEFR-VL*). This framework aims to be a tool for daily work on various levels. It can serve as a possible blueprint for the other art subjects as well.

ENViL defines Visual Literacy as a group of acquired competencies for production and reception of images and objects as well as for the reflection on these processes (figure 2).

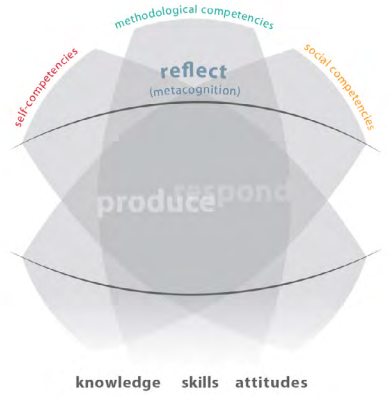
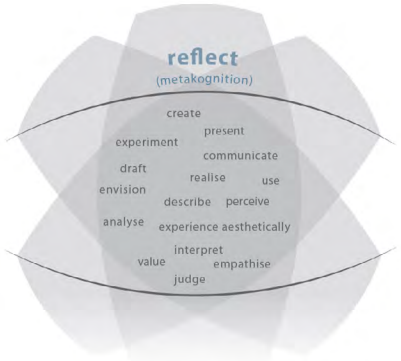


Figure 1 and 2: Basic dimensions of Visual Literacy / Differentiation of sub-competencies

The model shown in figure 1 explains the context of visual literacy in general education.



Produce and respond to images/objects and reflect on production and response

WHAT IS THE CEFR-VL GOOD FOR AND HOW CAN IT BE USED?

Scales of levels

The CEFR_VL delivers for each sub-competency a scale of levels. Such scales can be used to determine a specific performance of a pupil. The competency level achieved by an individual describes her or his ability to deal with a specific challenge in a specific situation on a specific level. Therefore the set of scales can be used as an instrument to assess learners' achievements. The levels described refer above all to independence of the solution, the scope of the repertoire and the quality of the relationship between form and content.

Table 1: Example of a scale of two levels for the sub-competency create

Level	Description
Elementary	Can select familiar motifs and topics for a draft or realisation that are appropriate for his/her intention and use pre-set artistic means. Can apply rules and principles, as well as the results of experimentation when producing an appropriate form.
Competent	Can use a range of contents, motifs and topics and give them an adequate form under consideration of the intended effect. Can use methods and strategies purposefully and in a targeted manner or experimentally in order to enhance his/her artistic expression. Can reflect critically on rules and conventions with regard to a specific effect and consider them when producing (follow or break them).

SITUATIONS IN WHICH VISUAL COMPETENCIES ARE NEEDED

Visual Literacy becomes apparent in specific situations in which individuals act. Thus the CEFR_VL offers a collection of relevant, existing and future situations where Visual Literacy is required. The choice of domains that learners are to be prepared for has far-reaching effects on educational decisions. We consider the following categories as relevant for visual literate European citizens: the personal domain (home life, life with friends or holidays, buying goods, decorating a room or practising a hobby), the public domain in which a person acts as part the general public or a public organisation, the occupational domain in which a person works and organised learning in and outside of educational institutions. As an example, table 2 shows a few situations, within the personal domain. Teachers can use the collection for formulating assignments.

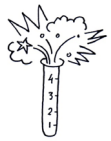
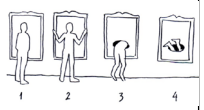
Table 2: Example of a table of situations (personal domain)

Action	Images, objects, genres, media	Places	Core competencies, topics
designing one's own private space	interior design, design, images, textiles, furniture, plants, lighting	home, garden	lifestyle, creativity, cultural identity, self-confidence, ability to express oneself with visual means, personal fulfilment
using visual media for leisure activities	TV, digital and interactive media, video, computer games, music video	online, on a screen, TV, home	cultural identity, integrated personality, critical thinking, openness, curiosity, lifestyle
observing foreign customs and rituals and understanding their aesthetic forms	rites - multimodal	travel, urban space	intercultural awareness, critical thinking, openness, curiosity, empathy, appreciation, exchange, active dialogue with the world
consuming	consumer products, advertisement, presentation, staging, packaging	supermarket, shops, online on a screen	critical thinking, reflective thinking, ability to act, lifestyle

FORMS OF ASSESSMENT

Assessing is always a complex challenge. However, teachers need to say which results of learning are expected and need to monitor student learning (formative assessment) and to evaluate student learning after completing assignments (summative assessment). The CEFR-VL delivers rubrics as an instrument suited for teacher, peer, and self-assessment. A rubric is a scoring guide, which contains criteria of evaluation as well as definitions of levels of achievement. The criteria are stated in several different levels of competence. Rubrics are transparent for students. Rubrics can be used for scoring and explaining scores. A *rubric* is mostly in a table format. A disadvantage can be its textual character, which is not very appealing for students. Therefore a combination with a visual rubric is better. Table 3 shows two examples: a rubric of a sub-competency of producing (*experimenting*) and a rubric of a sub-competency of responding (*analysing*).

Table 3: Example of two rubrics

Sub-competencies	Levels			
	1	2	3	4
Experimenting 	You started directly to produce your final product. You did not try out new things.	You spent some time experimenting. You tried out some media, techniques, methods or applications.	You spent time experimenting. You tried out several media, techniques, methods or applications.	You used quite some time to experiment. You tried many different media, techniques, methods or applications. The experimentation resulted in discoveries which were used in the final product.
 **Analysing**	You hardly made any connections between form, content, function, and context of the visual products. The connections you made were not elaborated.	You made some connections between form, content, function, and context of the visual products. The connections you made were somewhat elaborated.	You made several connections between form, content, function, and context of the visual products. The connections you made were elaborated and understandable.	You made many connections between form, content, function, and context of the visual products. The connections you made were well elaborated and understandable (explained thoroughly and/or illustrated with references to sources)

CONCLUSION

The CEFR-VL is a reference document that can be consulted as a foundation for school curricula development, for the development of teaching and learning materials and assignments for students. At the same time, it is an instrument that can be used to observe, describe and assess the visual competencies of learners. It facilitates the dialogue between the teacher and the learner. Its aim is to advise, not to standardise.

Comparing the model with corresponding models in dance, music or drama we can find similar ways to conceptualize the work. Thus an exchange between the art-specific subjects is needed.

VISUAL ARTS AND DESIGN EDUCATION

2.

LECTURES

Professional identity of the art teacher

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Key words: Art education, Art teacher, professional identity

Rapid changes in the educational environment result in an increased complexity of professional life have affected perspectives and identity across every profession. This development necessitated the redefinition of roles and professional characteristics for their successful fulfilment. The art education field is not indifferent to this wave of identity definition. The concept of art education needs to be revisited to unveil any possible denotative and connotative understanding of the fast changing trend and conceptualization of this field of education. This calls for re-examining the motivation of art teachers with misinterpreted identity traits to work towards achieving excellence and recognition within the teaching confraternity.

From a series of focus group and individual interviews conducted in October and November I Budapest, at the Community of Master Teachers of Art and Design, with a 10 female art teachers regarding their professional portfolio and their educational environment, it became exigent to address the issues concerning the redefinition of professional identity of art educators. The issue of marginalization of art teachers as professional "underdogs" among other professionals within the educational sector and society at large calls for a review of literature on this important topic. In fact, artists, by nature, are well-known for their liberal attitudes towards life. Their dissatisfaction with their professional recognition was repeatedly emphasized in their interviews.

Most of the interviewees suggested that an artist teacher is primarily an artist by and spreads the art component of his/her professional identity across any activity. Additionally, the interviews suggest that there is no strict division between the role of a teacher or an artist when pursuing the art teaching career – both roles are needed to be authentic and effective in art and design education. However, whenever the question of identity comes up, the artist always keeps referring to him/herself first as an artist and then as a teacher. As such, Hatfield et al (2006, p. 46) postulates that "most art educators valued recognition as an artist and teacher, both inside and outside the school".

Artist teachers often feel restricted in their creative potentials by professional regulations and obligations to follow a career path with multiple milestones requiring educational examinations. They find it difficult to describe their art education objectives and methodology in the framework and through the terminology provided. Conflicting roles and the changing atmosphere of work as an artist and art teacher is challenging. These two professional roles should be balanced.

The multi-faceted identity struggle is quite intensive and shrewd in character. Nonetheless, teachers including art teachers understand that competent use of complex pedagogical strategies to engage students in acquiring skills, attitudes and knowledge make them professionals, accepted by society. Thus, teaching art is not different from teaching biology even though they might not weight the same in the academic community. It is against this backdrop that a theoretical analysis of teachers as artist teachers or art teachers is of interest.

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Children‘s Drawings: Ideas of the World

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The topic of the contribution is a presentation of children’s drawings as testimonies of their cultural heritage. In addition to this paper we present an exposition of some children’s drawings from the collection of the Academy of Arts at Dusseldorf.

This archive is part of a newly founded International Research Network for studies in children’s and young people’s drawings initiated by J. Ströter-Bender. Till now there are about. ten institutions taking part in the network, f. e. the UNESCO Research Institute of Paderborn University, the UNESCO-Chair of ELTE University (Andrea Kárpáti), Institute of international pedagogical research Berlin, Pestalozzianum Zurich, Historical Museum Moscow, Musée National de l’éducation Rouen etc. An important aim of the network is to incorporate children’s and youth drawing archives into the UNESCO World Documentary Memory (Memory of the World Programme).

The Memory of the World Programme is a world-wide digital network with selected till now 348 out-standing documents from all over the world, but there are still no documents in the register that have been created directly by children and which will contribute to the future memory of mankind as a valuable cultural heritage.

The collection of the Academy of Arts in Dusseldorf includes nearly 4000 drawings by young people of various ages dating back to the beginning of the 20th century. These

drawings show the individual development of skills, but also the pedagogical conceptions since the beginning of modern art education during the 1920s after the former monotonous copying models: The drawings show the various materials used in art education in different times. Furthermore the drawings concern not only the visible world and its reproduction, more important are the possibilities of articulation the existential orientation of the adolescents.

We like to present aspects of the ideas of the world represented by children's drawings. Most important is to concern war and peace. The examples show the ruins of Dusseldorf after World War II seen by young people in 1946. Eight years later they show how they live in the reconstructed city, within their family or even on the beach. „War and Peace" is also a main topic in the researches of the starting International Research Network. F. e. the Moscow Historical Museum and the Musée National de Rouen hold large collections of children's drawings from the time of World War I.

It is often a problem for young people finding out their own identity – drawings may show the steps of getting an idea of themselves. Masquerades can help to get distance to the everyday life. Furthermore drawings can visualize dreams, fantasies, and imaginations as preparation of of future acts. A case study will show how pupils in the age of 15 make fundamental experiences in articulation of their emotions in a non-representational artistic language based on colours and forms.

Drawings may also help to understand other cultures – some examples of the 1950s demonstrate how children saw other cultures on the eve of the post-colonial époque. The drawings are testimonies of an exotic view in the world, resulting from still existing colonial ideas: Arabs are riding on horseback through the desert, Native Americans appear with full war painting, and black magicians are acting in the jungle.

Furthermore, young people make important steps understanding fundamental aspects of actual art by own experiments. We demonstrate this with the help of some examples from divergent decades and various techniques. Here you can find various possibilities to make studies in non-representational art even with very young pupils who often oppose modern art.

Illustrations:

1. Destructions after World War II – Dusseldorf – 1946 – aged 9
2. Masks – Aquaforte – ca. 1980 – aged 17
3. Non-representational composition – ca. 1990 – aged 14.

All images belong to the Archives of the Academy of Arts – Dusseldorf.

Visuality in history of childhood - a case study

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Kulcsszavak: Visual analyses; Iconography; History of Childhood

According to Jan Assmann, visual was primary then textual followed (Assmann 2011). Human brain could build a visual reference earlier; textual references were invented lately. We need visual references to understand textual, these visual references are based on our experiences and mental images (Nyíri 2016). Based on these theoretical statements we consider to focus on visuality rather than textual documents while teaching our students at Faculty of Pre-school and Primary Education Eötvös Loránd University while teaching the history of childhood and the history of education.

The aim of the presentation is to introduce visual methods we constantly use and themes of this course while teaching our students. What kind of topics seem to interest the young generation of the 21st century? We should discuss about the emancipation of the Hungarian woman, history of the family, parental guidance books, history of toys and changes of the conceptions of childhood from the Medieval to nowadays. This generation seem to be very sensible visually, also they would like to understand quickly the connection between theory and practice. In the last five years, we use several ideas to catch their interest. The presentation will focus on the following methods: mind map, role play, and iconography; in the other hand, it will introduce some ideas how to motivate students to join the assignments.

As a new branch of educational disciplines, we shall introduce iconography in childhood studies, iconography in education and the core problems of the history of childhood is dealing with, such as continuity - discontinuity and social history of children. We state our agreement with Kristóf Nyíri, that pictures have the capacity to convey the information that cannot be coded in any other way (Nyíri 2009), in the other hand we need contemporary works from each period which we would like to study. What kind of images can we use for the analysis in the classroom environment? Visual analysis can help researchers to understand information and social relations encoded in images (Kress and Leuween 2006) but what to do with those students whom had no art classes in the secondary school?

The presentation will have examples of students' works and will share ideas how to deal with the difference of their knowledge about art, art history and visual analyses itself. It will introduce a simple analyses method; students can rely on their intuitions with the guidance of the teacher as a facilitator.

Design education – how do we think about it nowadays?

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Key words: art education, visual culture in education; design education, design Theory

In a current research project about Visual Culture Education of lower and higher secondary school level, our team is dealing with the topic of Design Education. Our goal is to convey up to date knowledge, so among others, we investigated present day design theory, what academic people thinks and write about it. In this presentation we shall give a short survey of design as process and objects, buildings as a result of design process. The theoretical framework of the survey linked to the periodicals of Design Studies, Computer-Aided Design, on the topic of design theory, the creative process in design activity (John E. Gero), and articles about artificial intelligence. Our method was survey of the relevant literature, analysis of views coming from the articles, and draft selected ideas.

We have found a transitional state of design practice: while the design process, the production of material, and the construction is made on computer, the design principles, the thinking of designers is still belonging to the former paradigm (the industrial society). The educational importance of the research is that by teaching material made on the basis of this survey could narrow the gap between the world of work and everyday built environment, and the picture conveyed of it in schools.

The paper discusses the content of design, environmental design, participating design, analysis and construction of space, and the impact of computer on design process, and thinking. As architectural design has the most sophisticated theory, we used many sources of it. Architectural design, manufacturing and constructing needs many information from people, their habits, tastes, construction material, economy, and so one. The quality of result depends on the effectivity of the data process. Les loss, more answered needs, so the information process plays key role in design and building.

In the industrial society design manufacturing and construction sharply divided from each other, and a hierarchy of different professionals, legal and financial rules assured the required quality. The offer of computing for architecture, like CAD, CAM, and CAD-CAM systems changed the former conventions, as drawings, and related information is stored in the memory of the computer. Not only the architect can access of it, but engineers, manufacturers, workers, and even end user people as well. So they can contribute to all phase of the design. Which means, e.g. not only architect gives the form of the building, and from this point not one person the author, but a group.

This possibility led to the practice of modern cooperative and participating design. It has many advantages, for example all contributors identify him or herself with the work going on, and the best idea will be carried out, regardless of the person's qualification. Shared information led to abolish rigid hierarchy, and the common agreement slowly replaces former pyramid of decision making. This features makes possible participants, to form a human community of the job.

The process of building becoming more adaptive started with heating regulation, security systems, and door openers. Nowadays computerized, remote controlled services spread in the whole of rooms composed a system and created the conception of Smart Building. Computing has another contribution to design that is Cyberspace, a spatial illusion which occurs on Internet. As far as Cyberspace was not created according to architectural standards "as a consequence of it there is not any impact on those cultural, economic, or educational activity for what we use Internet" states Yehuda Kallay (2006).

Many practitioners and theoreticians observed design as creation, and the link between design process, and computing. According John E. Gero drawing plays crucial role in design process in two reason:1. Drafts, sketches give concrete, physical form for a cognitive problem2. Drawing is a "short time memory" as we place out a sum information of our head. Computer aided design is very helpful in a realisation of an idea in a construction plan, but in the phase of invention computer is not fle-

xible enough at present. So handmade sketches and writings are adequate form put on initial ideas.

Summary

From educational view traditional values of design world are till important, like manual activity, intellectual frame of work, aesthetic, algorithm, do something for others, connection to everyday environment, and so on. Our survey gave special emphasis on cooperative or team work, share information, use computer in its place, and the importance of cultural context.

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From representation to expression: visual language development in Kindergarten

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Key words: kindergarten art education, visual literacy, authentic assessment

Research reported here is part of a series of studies aimed at redefining the development of visual literacy of children and young adults aged 3-18 years. *Situational drawing tasks* that contextualise themes in everyday life events may inspire visual expression reveal knowledge, skills and attitudes at the same time and thus go beyond the description of developmental stages towards decoding visual languages with individual, cultural and general, human traits.

RESEARCH METHOD AND SAMPLE

In a study executed in 2015-16, we *collected child art in traditional and virtual media from Kindergarten to lower primary level* (ISCED 0 and 1, ages 3-10 years). The tasks evaluated children's visualisations of four concepts in narrative contexts for easier interpretation. In this paper, we report results on *opposing emotions* represented through garments, and / or facial expressions and / or body language ("Draw yourself in your favourite dress in happy mood / most disliked garment in a sad mood"). 332 children aged 3-6 years completed these tasks, in traditional 2D media (coloured crayon, felt-tipped pen or pencil drawings on A4 size, white paper).

Two external expert judges undertook scoring. General assessment criteria (used for all the four Situational Drawing Tasks) involved five subcompetences: 1) *Task centeredness*, 2) *Emergence of forms*,3) *Usage of signs and symbols,* 4) *Expressive use of colour,* 5) *Composition* (intentional arrangement of pictorial elements). These characteristics proved to be reliable criteria for assessment (Cronbach-α=0,924). As this task involved figure drawing, further evaluation criteria were added: 6) *Differentiation* (representing details of objects and figures); 7) *Proportions* (conscientious efforts to represent lifelike or theme-oriented, expressive proportions of the human body); 8) *Figure types* (from tadpoles to figures with differentiated body parts and facial expressions); 9) *Motion representation types* (from tadpoles to figures with moving body parts and dynamic environment); 10) *Representing space* and plasticity. Including these criteria in the assessment, reliability of the task was further improved (Cronbach-α=0,938).

Validity of the task and its evaluation criteria was assured through expert agreement. A group of art teachers experienced in educational assessment discussed the four Situational Drawing Tasks and found that they were in conformity with the Hungarian curriculum for the discipline for at education called "Visual culture". The four tasks were also tested by graduating art therapy students of the University of Pécs, Hungary and Task 3 discussed here was found especially *useful for detecting problems concerning body image and self-appreciation*.

Drawings were collected in 13 Kindergartens of different sociocultural milieu. The average age of children was 4,95 years. Boys constituted 52,3 %, and girls 47,7% of the sample. Children with special needs constituted 7,53 % of our sample.

DISCUSSION

We used Pearson linear correlation for identifying the *cohesion of assessment criteria* and found strong correlation among performance in all of them and the final score. The most relevant indicator of performance was task centeredness – the ability to focus on a chosen theme (r=0,954). Every performance according to assessment criteria 0-4 (maximum score per criterion: 4)

Three performance levels were revealed a) children under 4 years of age, average score: 5, maximum score attained only by 2,7 % of the group; b) ages between 4-6 years, average score: 13, and 10 % attaining maximum score; c) age above 6 years: a halt in performance and larger differences among children, with 8 % achieving maximum score and average score ranging from 8-18.

Age related results indicated that the most significant increase in performance occurs at around age 4-6, and development in age 6 is not so pronounced. A homogeneity analysis showed that there were no significant differences between the two older age groups: 4-6 and over 6 years-olds. However, if we perform an analysis of variance and correlate drawing level and years spent in Kindergarten, we can identify four distinct groups with significantly different performance related to the *time spent in Kindergarten* ($F=23,004$; $p<0,05$; $x1=7,2090$; $x2=10,6739$; $x3=14,0187$; $x4=13,5313$). Those who spent between 2-3 years or more than 3 years show faster development in task centeredness, representation of shapes and composition.

Another distribution of our sample also shows the *importance of the length of Kindergarten education*. Those children who attended Kindergarten for a longer time, are more advanced in task centeredness, representing shapes instead of scribbles and the use of signs and symbols. As these subcompetences of visual literacy are important for a wide range of visualisation activities later, efforts should be made to offer Kindergarten education for as many children as possible. A current study of the American National Endowment for the Arts reveals another important benefit of early art education: social and emotional benefits of arts participation (National Endowment for the Arts, 2015).

Summary

Kindergarten education seems to have successfully developed important subcompetences of visual literacy. The correlation value between age and performance level is r=0,343. The coefficient of determination is R=0,117649, that is, 12 % of the results may be explained by age. Kindergarten education has a much larger coefficient of determination value (R=0,322436). This result indicates that 32 % of drawing performance is explained by the time spent in Kindergarten education. Consequently, *art education in an institution has three times as much effect on the development of visual language than maturation.*

Drawing performance seems to have accelerated today, in the age of increased imaging. In comparison to classic studies, (e. g. Löwenfeld,1963 / 2013, Arnheim, 1969), significant areas of development (emergence of shapes from scribbles, usage of symbolic forms, representational and symbolic use of colour) already occurs between in Kindergarten, between 4-5, 11 years of age, not in primary school, between 6.5 and 7.11 years of age, as previously supposed (Kárpáti, A., and Simon, T., 2014). These results support the findings of Annette Wiegelmann-Bals (Wiegelmann-Bals, A., 2009) who compared drawings from 1970s with those produced in the first years of the 21th century, and found an earlier onset of stages of development.

Our results show that *the big change in drawing performance occurs between 4-6 years of age*. This period is characterised by the dominance of shapes over scribbles, and the appearance of major components of the visual language: the intentional use of colours and compositional arrangements. Accelerated drawing literacy development should lead to offering more complex, expressive tasks at earlier ages. If early development is provided, *visual language* that is increasingly utilised in social media, could develop into a more sophisticated form of expression in primary school and *may beneficially affect social and emotional competence*.

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Visual arts education and second language acquisition – theoretical background and research of subject integration

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Key words: Bauhaus, The Grounded Theory, "the language of art", subject integration

The paper presents the disposition of Visual Arts Education to be integrated with the Foreign Language Acquisition as conceived in the contemporary context of the Czech elementary education. It investigates Visual Arts Education´s modernistic premises formulated in Bauhaus and discusses the Bauhaus concept of „the language of art". This concept penetrates a surprisingly wide scale of themes of theory and didactics of Visual Arts Education. We argue that the concept of integrating work of artists and craftsmen in a „total artwork" through the „language of art" as used by W. Gropius in the early stage of Bauhaus (Gropius, 1923) has its reflections in today´s Czech Visual Arts Curricula. We develop discussion on the conditions under which the conception of „the language of art" can be employed in subject integration of Visual Arts Education and Second Language Acquisition while keeping the subject matter of the Visual Arts Education relevant and adequately represented in the integrated subject.

We further develop the discussion about the role of the concept of the „language of art" and its role in the modernistic attempts of integrating disciplines, we investigate this Bauhaus conception of the utilization of the art language in creating a „total artwork" and we show how this idea was intertwined with the then contemporary discussions about the theory of science. We thematise the connectedness of Bauhaus teachers with some members of the Vienna Circle of Logical Empiricism. We discuss how the discussions between these people have finally prepared ground for today´s research methods in the humanities and in pedagogical research. The concept of developing an original understanding (both artistic and scientific) penetrated via personal links to American theoreticians of science, who have formulated the concept of the Grounded Theory (Glaser, Strauss, 1965). The ideas underlying the emergence of the Grounded Theory are influential also in today´s Visual Arts Education.

Reflecting the above mentioned issues, we argue that the problematics of integrating Second Language Acquisition and Visual Art´s Education is an opportunity that can potentiate but also dismiss the ability of children to develop their original understanding both in the field of the visual and in any original thinking in general.

The paper presents some results of empirical research targeted at elementary school teachers´ conceptions of the integration of Visual Arts Education with Second Language Acquisition and it investigates the potentialities of the integrated subject in the research sample. It uses the above mentioned concepts and the method of the Grounded Theory.

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Art based interventions

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Key words: art based methods; art education; art therapy

In my paper I present the palette of art based educational and therapeutic methods/interventions, its theoretical and methodological sorting on the basis of my PhD research, besides I show some examples. Education though art, art therapy and art psychotherapy ("art as therapy", art in therapy"), art educational therapy, community art, art based meditation, arts based learning and research, and other arts based methods are using art as a tool in supporting. All fields are combining art facilitation with their special professionality (educational, psychotherapeutic, social, spiritual, art) background. Art based intervention can have different levels of professional competence in the artistic or educational/therapeutic areas.

In my model, art-based work has two types of special target groups beside the general 'normal' (not specifically described, ordinary) category:

- Various 'impacted' and minority groups/people, (disabled, disadvantaged, handicapped people, migrants etc.)
- Professionals (professional self-knowledge, supervision, team-building for professional groups, training, etc.).
- As regards their character and aims, art-based intervention methods fall into the following categories:
- Study: arts based learning and research
- Developing skills through art: sensitivity of sensation, attention and focus, creativity, problem solving, stimulation and experience, control, imagination, communicational and other skills,
- Team/community building, cooperation and socialization, social integration and inclusion through art: developing of social competencies, socialization, community art,
- Personal support of autonomy and mental health through art: self-knowledge, self-sensation, self-strengthening, empowering, flow experience, vitalization, energization, stress relief, work with emotions,
- Direct work with traumas through art (art-psychotherapy).
- Art-psychotherapy, which requires special professional skills and frames, differs clearly from the other fields/levels. I analyse with this model the features of certain art based intervention forms (education through art, sociotherapy and artistic work in special education), and illustrate with two examples the aspects and features of arts based interventions in the special educational field.
- I present two examples of art based methodology in practise: through a visual task, in which I detail, what kind of focuses are possible
- through a film-example.

The first case study is a visual task: construction and deconstruction of a mandala in groups (3-4 persons) from sand and stones.

- Study level: knowledge about and through mandala, experience of symmetry
- Ability (skills) level: manipulation, space-orientation, working with different materials, shapes, colours, consistencies, problem-solving (creativity)
- Socialisation level: cooperation, patience, handling frustration, flexibility, productivity
- Personal level: frustration, constructivism-destructivity, experience freedom, relieve, waste
Psychotherapeutic level: grief, mourning

A competent art facilitator (art therapist or art teacher or other art professional...) can manage the focus of the activity with the professional tools (way of the instructions and reflections...) according to the pedagogical or therapeutic goals.

Second example: analysis of the film "Kills in Wheels" (director: Attila Till, 2016) from the perspective of art therapy. The movie is the coming-of-age story of Zolika, a 20-year-old young

man who is a wheelchair user. The film has a double father figure in the shape of two quite different strangers. The actions we see in what appears to be an action comedy are in fact fictitious, and there is a process of art therapy progressing in the background: Zoli and his friend are making a comic book using Zoli`s dreams and aggressive fantasies, so Zoli is not only a participant but also one of the creators of the story.

The relationship to the stranger father is being processed and transformed through this creative process, using narrative and visual techniques. The fluent black and red paints dripping on the paper's surface express the emotions (aggression, chaotic feelings, loose control), and the pencil drawing provides the narrative functions. The finished product is a container for emotions and internal processes, an object that is a message and also an achievement.

Intelligence and emotion in the drawings of Slovakian village and city children

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Keywords: child, drawing, symbolization, transformation.

ABSTRACT

Art education at Slovak elementary schools is rather normative. The main themes are specified, but the content may be modified by the teacher. Creative pedagogical solutions are facilitated by a series of textbooks for children (Čarný a Ferlíková, 2009-2016). These teaching aids offer examples from different areas, for example from the world of man, from the living and non-living nature, from the history of art, from contemporary art. Tasks for visual perception, analysis and creative activities are organized around visual qualities (e.g. lines, colours, shapes, natural environments, human relationships, etc.). Individual tasks can be incorporated into the curriculum of art education, since some of the tasks are directly related to learning themes. (Lehoťáková, 2015). However, many years of pedagogical practice confirmed that the teachers 1st to 4th primary schools tend to use traditional methods in art lessons.

Situational drawing tasks were developed by Andrea Kárpáti (2015). The range of tasks is an evaluation of method that can be used to evaluate child drawings as well as an educational process. Situational drawing tasks consist of four drawing motifs to be executed with a pencil or *crayon* in two consecutive or separated 45 minutes lessons. The first three tasks are contextual and should be preceded by a brief interview between the teacher and students about the topics:

Task no. 1 Draw a school or city map.

Task no. 2 Draw a self-portrait in a cheerful and sad mood. Draw your clothes as well.

Task no. 3 Design a house for a figure from a fairy tale or cartoon character.

They also drew the environment that characterizes this figure.

Task no. 4 Completion of spatial patterns consists of two linear compositions. One represents the interior, the other outside space. Students have the task of completing the images by themselves.

We conducted the research in 2016 (January - March) at a primary school in a city, with 1st to 4th graders in the city of Nitra (School 1) and in a village primary school, ZŠ Zemianska Olča, district Komárno also in 1st to 4th grades (School 2). We had available about 1,000 art works.

Nitra has about 78,000 inhabitants and 14 elementary schools. The village of Zemianska Olča has about 2 300 inhabitants and lies about 40 km from the town of Komárno. For this study, these schools were chosen because School No. 1 is a classical 9-degree elementary school, the school staff is innovative, often involved in educational projects. This school has no specialization. School No. 3 is a 9-grade elementary school, attended by children from several nearby villages. It is a small school, but teachers are involved in out-of-school activities and in the village and lead interested groups about the natural environment.

The numbers of children by age and gender are shown in Table 1 below.

Grade	**School 1,** student number (average age: year, month)	**School 1** Gender: girls / boys	**School 2,** student number (average age: year, month)	**School 2** Gender: girls / boys
1	18 (7,2)	10 / 8	15 (7,4)	8/7
2	24 (7,10)	10/14	21 (8,1)	10/14
3	17 (9,9)	7/10	17 (9,11)	7/10
4	16 (10,7)	7/9	20 (10,9)	7/9
Total	**75**		**73**	

Total number of student in the sample: 148.

RESULTS BY TYPE OF SCHOOL AND GENDER

Assessment of drawings by two independent experts showed that drawings of School 1 students received higher scores than School 2 students. Evaluation criteria included the use of lines, shapes, colours, compositions and the employment of symbolic characters. The reason that visual literacy results of School 1 are better than those of School 2 may be that situational drawing tasks reflect the ability to use different modes, forms and stylistic versions of visual language that is more accessible in the city than in the village. For example, children in the city school may visit cultural institutions (libraries, galleries, museums, a theatre performances, etc.) and also attend cultural events. Differences in performance between the village and city school can be observed in all criteria.

Results of the four tasks at the four school grades of School 1 and School 2 are shown in Table 2:

Themes	**School**	**Average**	**Standard deviation**
1: Draw a map!	School 1	19,89	0.55 %
	School 2	13,84	30,80 %
2: Self-portrait in happy and sad mood	School 1	19,56	2,20 %
	School 2	18,17	9,15 %
3: Design a dwelling for a fictional character!	School 1	19,63	1,85 %
	School 2	11,98	40,10 %
4: Complete the picture! (sketch of an exterior space)	School 1	19,91	0,45 %
	School 2	18,38	8,10 %
Average points	**School 1**	**18,75**	**6,25 %**
Average points	**School 2**	**18,25**	**8,75 %**

(Maximum score: 20 points for each task.)

Differences are particularly marked in Task # 2, where children had to draw themselves in a cheerful and sad mood, in a garment that reflects their mood (their favourite and least popular dress respectively). There are differences in perceptions of self in School 1 and School 2 and also in the perception of natural surroundings.

Gender differences are also noticeable in the sample. The first four grades of elementary school are characterized by

significant symbolism associated with gender, especially in the drawing of shapes, the use of colours and decorative elements (Haanstra et al., 2011). Girls and boys have equally strong male and female features in both School 1 and School 2.

SUMMARY AND CONCLUSION

Task no. 1: Draw map of school or city.

We assumed that girls choose a well-known environment (school) because abstract spatial orientation is more difficult for them. Boys who are more capable in spatial orientation choose a map of the city. In fact, the students of both schools have chosen a well-known environment. Our second assumption was confirmed: boys used more characters and symbols, their maps were more realistically captured than girls had. Students from School 2 included more elements from nature, nature was an integral part of their drawing.

Task no. 2: Draw a self-portrait in a cheerful and sad mood.

Our first hypothesis was that there would be no differences between the visual levels of the skills of children from two schools because they have the same educational philosophy (traditional classical education). We also assumed that the drawing of the self-portrait would reveal more assertive students – those from the city. This expectation proved to be true. The students from School 1 presented themselves more prominently, more assertively. Our second hypothesis was that 7 to 11-year-old children would use colours that adults perceive as cheerful or unhappy to capture a certain mood. We found that children have different ideas about symbolic colours expressing happiness and sadness than adults.

Task no. 3: Dwelling design for a figure from a fairy tale or cartoon figure

Our first hypothesis was that the task of building the dwelling would not be interpreted merely as an illustration, and events and characters that did not appear in the story would also be represented here as added fictitious elements. This hypothesis was not confirmed. Although children's drawings from School 1 contained many fictional details, children's drawings from School 2 did not include them. Children from School 2 drew popular folk tales and displayed them traditionally (typical figures, environment, and story). Scenes showing aggression with brutal struggles did not even appear in any of the school.

Task no. 4: Completing spatial sketches

The sketches (linear schema) provided for completion included different types of shapes: round and rectangular (rectangular, square shapes). Our first hypothesis was that the rounded shapes would inspire completion as characters, living beings, and the rectangular ones would be completes as abstract motives. However, this hypothesis was not confirmed, the drawings were mostly figurative for both types of sketches. Our second hypothesis was that boys will be better in completing the sketches than girls, because their spatial skills are superior. This assumption was confirmed. Many children from School 1 turned the first test page (with rounded shapes) upside down

and completed the picture in vertical position. In this task, several original solutions were provided. Rotating the test page is considered a feature of high creativity in several international standardized creativity test. (Kárpáti and Gyebnár, 2013).

Nowadays there is a growing need to assess children's visual literacy as they provide authentic measures of intellectual and psychomotor development. These situational tasks were experimental in order to find out how the drawing of 7-11-year-old children, namely at primary schools in 1st to 4th grade in the city - School 1 and primary school in 1st to 4th grade of school - School 2. Students from School 1 overcame students from School 2, they were 2.5% more successful. We assume that children in the city have more complex visual impulses that provide them with urban activities and therefore their visual literacy level is higher.

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Artists matter - the first hungarian results of OECD project on assessing progression in creative and critical thinking skills in education

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Key words: OECD CERI research programme; creativity and critical thinking; creativity in Maths

The aim of the paper is to present the Hungarian results of the first round of an international OECD CERI project on school-based assessment of creative and critical thinking. The project aims to develop a toolkit of educational resources that teachers can use in schools to help them foster (and assess progress in) creative and critical thinking skills: assessment rubrics, pedagogical activities and exercises, and examples of student work. The objective is to make it more visible and tangible to teachers in participating countries what it means to teach, learn and make progress in creativity and critical thinking. This exploratory work is based on the assumption that the development of an international framework to assess creative and critical thinking skills in educational settings will help teachers and students develop these skills, based on a more concrete understanding of what they mean, how they can be cultivated, and how progress in these skills can be made visible in school.

The project leaders of OECD CERI highlight that there is a consensus that formal education should cultivate the creativity and critical thinking skills of students, but there is little evidence that it is done in a systematic way. One of the reasons is that it is not clear how these skills can be made visible and tangible and articulated by teachers, students and policy makers, especially as part of the curriculum. (EDU/CERI/CD(2015)12, p.6) The first phase of the project took place in 2015-16 and the second phase is in progress right now. In the first round more than 10 countries took part, all of them represented by an educational programme cultivating creativity in critical thinking in public education. Hungary was represented by Creative Partnerships Hungary programme, run by T-Tudok Inc. in collaboration with Creativity, Culture and Education (UK) and the Faculty of Music and Visual Arts of Pécs University.

The Creative Partnerships Programme is focused on the long-term relationship between creative practitioners and schools. Creative professionals from various branches (of arts) help students master different types of knowledge and skills. Creative practitioners bring new expectations, which clearly challenge students. But it is not only students that are jerked out of the rut of daily routine by the new learning process—schools as a whole and mainly teachers are highly affected. Creative Partnerships has developed a pedagogical approach known as the “high functioning classroom” which encourages teachers to change their classroom practice so that lessons are replete with challenges that relate learning to real-life situations; where students are engaged physically and socially, as well as emotionally and intellectually; and where students’ own experiences, observations and questions take centre stage.

The transformation of teaching and learning is based on creative processes which are channelled into classrooms and school life. Techniques applied in the methodologies of teaching various subjects are derived from artistic practices. Whilst working in the classroom with the students, the artist remains an artist, and the teacher remains a teacher. The programme does not offer arts education. What the Creative Partnerships programme does is to prepare artists to work with teachers and students to bring about sustainable changes in teachers’ teaching practice.

In OECD CERI project, schools taking part in Creative Partnerships programme belonged to intervention group accompanied by control schools. The aim of the present paper is to show the main results of qualitative and quantitative research measuring the impact of the Creative Partnerships pilot programme on certain competencies in Maths and Science and mathematical creativity of the participating (socially disadvantaged) students, and also the pedagogical-methodological "transformation" of the teachers taking active part in this international project.

Pedagogy in motion: exploring animation for visual literacy development in primary education

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It is generally recognized that the contemporary communicative social environment plays an important role in the life of modern people. In this context, more and more visual messages inundate everyday life. The development of visual literacy becomes more necessary than ever. This development should be done in a context where other modes of communication play an equally important role as messages nowadays are frequently characterized by multimodality.

This presentation discusses ways in which new technologies can provide an authentic framework to support the development of visual literacy in a way that is motivating and highly engaging for children. It embraces the theory of multiliteracy by using multimedia software and adopts its teaching approaches, particularly the approach of critical framing. In particular, it reports on the collaboration of the author with three primary school teachers – an art specialist and two generalists – of the same primary school to develop children's communication skills. Fifty-two primary school children (ages 10-12 year olds) were given the opportunity to engage with stop motion animation for the first time during visual arts and health promotion lessons. The application of digital storytelling offers tremendous potential for teaching contemporary visual culture. It also connects art education with children's daily lives and consequently offers opportunities for situated learning. Children were invited to critical view stop motion animation films and create their

own multimedia stories using regular video-editing software (see figures 1 and 2). Their responses were documented both during the process of creating their stories (observational notes) and at the end of the project (written responses to a number of open-ended questions) in an effort to assess the development of partial visual competencies (based on the Common European Framework of Reference for Visual Literacy). Semi-structure interviews were also contacted with sixteen children and all three teachers. The findings highlight the conditions for successful adoption of digital storytelling in schools in a way that promotes children's knowledge, skills and attitudes as children shared powerful stories, anchored in real-life contexts.

The presentation discusses issues connected with the benefits from using animation and digital storytelling tools for educational purposes in scholarly interdisciplinary contexts. Animation and storytelling has the potential to develop children's critical thinking, problem solving and creativity in a highly engaging and motivating contexts. It can contribute to the development of important transversal skills and children's overall cognitive and affective development and education. However, these skills do not unfold 'naturally' or happen automatically because children are digitally native. Therefore, the presentation also discusses obstacles and considerations related to children's and teachers' attitudes as well as with issues of assessing the impact of such projects in developing partial visual competencies.

Figure 1:

A teenager is having his first smoke after his friends offered him a cigarette (scene from the short stop motion movie regarding smoking and bad peer influence)

Figure 2:

A boy is crying alone at the school yard – a scene from the short stop motion movie regarding bullying)

Supporting individuals with disabilities for visiting museums in Hungary

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Key words: need assessment survey; good practices in accessible museum visit; partnership in art education

The presentation covers some of the results of the BaGMIVI project. First, a brief review of related literature, prepared in collaboration by international project partners is presented, with research data and theoretical perspectives regarding museums and people with visual impairments. This research was conducted at local and international level through reports, books and journals. In Hungary legislation supports individuals with disabilities in visiting Museums. Several museums have opened their gates since the 1990s in order to provide people with disabilities educational and artistic opportunities, and have realized unique and accessible exhibitions. Museum educators have been leading professionals in this movement.

The second part of the presentation gives account on the process of conducting interviews with individuals with visual impairments and teachers of students with visual impairments. The purpose of this phase was to explore their experiences and perspectives regarding the level of accessibility and inclusion of students with visual impairments by museums. Last, a questionnaire was developed, which aimed at exploring museum staff members' needs and experiences regarding visitors with visual impairments. The participants were in total 55 persons with different specialties in the museums such as museum educators, other scientific staff and security guards. Some outcomes of the survey will be introduced in the presentation. Respondents included 50 special education teachers, 71 individuals with visual impairments and 55 museum staff from four countries.

Suggestions of special education teachers for the improvement of access to museums for school children with visual impairments		
Accessibility provisions/facilitations	**Museum staff's training/ attitudes**	**Educational programs Adjusted/ designed educational programs for children with visual impairments**
Tactile access	Museum staff training in visual impairment issues	Variety of educational programs
Verbal descriptions	Special supportive staff	Frequency of educational activities
Information in braille	Activation for the development of accessibility	Variety of activities
Material in large print		Different senses
High contrast Accessible websites		Small groups Individual approach
Audio guides/tours/ descriptions		Individual approach
Special areas for individuals with visual impairments in museums Museum space organization		Budgetary and practical issues
Lighting systems Orientation facilitations		Communication/Information
Other infrastructure/ arrangements		
New technologies		

The results of the survey are followed by answers of individuals with visual impairment about facilitating and hindering factors and suggestions. Museum staff training was designed following the message of some well-known authors of the field with wider definitions of the educational and social role of the museum in the 21st century. "Bridging the gap between museums and individuals with visual impairment" is an initiative which is expected to contribute to the educational and social role of museums with impact to cultural accessibility for individuals with visual impairments. Museums in the 21st century are not considered only as spaces of collection, preservation and display of objects but institutions with a wide educational and social role (Black, 2005; Hooper-Greenhill, 1999, 2007;

Sandell, 2002). Over the past decades museums have redefined their relationship with their audiences (Vergo, 1989) and this relationship is reflected on the museums' definition of the International Council of Museums (ICOM, 2007).

It is true that access for people with disabilities is a central topic of discussion in museums around the world. Also, important steps have been taken toward a wider accessibility of people with disabilities to museums such as: guidelines for an accessible environment in the framework of Universal Design. Furthermore, growing attention is paid to enhancing physical access and to a lesser extent to other types of access like sensory access (Boussaid, 2004; Sandell & Dodd, 2010:10). BaGMIVI's effort is, however, to cover these needs as well. The outcome of this co-operation and international effort is illustrated in some video results.

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The unity of ornamental art and mathematics in a pattern group originated from prehistory, demonstrated through a pattern-generating cylinder

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Key words: modularity, cognitive processes, symmetry phenomena,

A basic geometrical pattern group was born in the Stone Age (at the end of the Palaeolithic) and has become widespread since that time. Its origin can be traced back to plaiting basketry technology. The earliest motifs and religious symbols of our global cultural history, such as the zig-zag, triangle, square and the forms based on the meander hook (meander and swastika) belong to this pattern group. The question arises: what kind of phenomena may be behind this universal" occurrence?

The extensive temporal and spatial spread of this pattern group is due to the geometrical rules of plaiting technology, and the cognitive processes of the human brain. In all probability, these two factors together resulted in and determined the development of the same patterns in different cultures, regardless of their location and their historical age. The patterns are repetitive in nature and constructed of diagonal line groups, that are arranged symmetrically in square or rectangular modules.

The number and direction of the lines in the modules and the modules relative positions determine the patterns they compose. Module boundaries are part of the background struc-

ture and can be geometrical operation axes (mirror, glide and rotation). When plaiting the patterns or constructing them on the surface of different objects, it is helpful to know the hidden (discrete) geometric underlying structure, to recognise visible symmetric arrangements and – as a basic criterion- to employ counting. In this pattern group, form creation is based on geometric transformations and counting, so mathematical thinking is clearly manifested.

The development of these patterns can be demonstrated within a technological/geometrical evolution system, in which the particular patterns evolve from only one simple structure step by step after minor structural changes. A pattern-generating cylinder has been invented to show this evolutionary process in three dimensions. It has rotatable rings on its surface to create the most ancient geometric forms and patterns using different series of combinations that is algorithms.

The "cylinder of symmetry" is a playful, practical method to demonstrate the basic geometrical and mathematical relationships of the pattern group that correspond to the mathematical knowledge of Grade 5 and 6 in primary school. In this way, harmonic form structures can be used to demonstrate basic arithmetical operations, involution, geometric transformations, the use of coordinates, ratios and to examine the properties the triangles, especially the relationship between the right-angled triangle and the square.

Patterns originally created in plaited structures from vegetal raw materials, were abstracted into decorative patterns, and because of their aesthetic power, and formed an important role in ornamental art. Moreover, they are able to illustrate basic mathematical phenomena due to their inherent geometric and arithmetic rules.

Draw a person with disability- measuring attitudes towards disability with projective drawing tests

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Key words: Projective drawing test, adolescents, disability awareness program; Community music therapy

The presentation reports an innovative project, measuring the effectiveness of disability-awareness projects with projective drawing tests. People with severe disabilities are particularly disadvantaged in inclusion, due to their visible physical impairments, their limited ability of verbal communication and atypical behaviour. Deformities of the body or the face trigger many subconscious mechanism of rejection and those deviates from the acceptable social norms are usually associated with unpredictable and dangerous behaviour. (Oaten et al, 2011; Stier & Hinshaw, 2007)

The literature of community music therapy accentuates the role of common shared music in building equal and mutual relationships (Andsell, 2015, Stige and Aaro, 2012). Nádizumzum is a performing orchestra consisting of musicians with severe disabilities. The orchestra uses the Consonante Method that provides access for musical participation for people with limited intellectual, motor, and verbal skills. The three pillars of method, is the application of custom built instruments to suit the individual motor patterns, the use of inborn musical behaviours and the simplified accompaniment with base sound and perfect fifth. (Tiszai, 2016/2017) They give inclusive concerts with music students and offer workshops where participants allowed to

play well-known folk songs with the orchestra members.

While participants of different projects reports about attitudinal changes and positive encounters the unspoken predestined roles of the society prohibit people to talk about difficulties. The aim of this research was to compare drawings of different 7-11 grade students: participants of workshops, fellow-musicians of inclusive concerts and control groups to explore the unspoken dimension of the encounter. The model of this method was reported by Magyar and Meggyesné (2016). They instructed elementary schools students as 'draw a person with disability' to gain an impression about their inner representation of disability. While the narratives and the quality of the drawings are highly variable, there are interesting patterns manifest itself. The most important qualities seem to be the personal engagement vs faceless or stick figures, the emotional aspect of the drawings.

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Education through Art and Art Therapy in the Hungarian Public School System – Meeting Points and Borderlines

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Key words: education through art, personality development, problem solving

This presentation aims to introduce the possibilities, advantages and difficulties concerning the practice of Education through Art (ETA) and the use of art therapy in a primary school in Budapest. The experimental program started seven years ago and since then both the teachers and the pupils have gained significant amount of experience from the process.

The first part of the presentation examines the possible roles of Education through Art in public schools and specifically in the Hungarian education system itself with historical, pedagogical and artistic references through the above-mentioned experiment. The analysis of the program points out the essential factors which are necessary to run this program at any primary schools, such as personal and financial questions, flexibility, how to make the program official, where to find time and space for the ETA classes at the school, how to organise longer programmes outside the school etc. I also try to find the reasons for failures and difficulties – for example the lack of protected space in art therapy, finding places for ETA classes within the official timetable without taking too much time from the "traditional" subjects etc.

Education through art means a certain kind of art education which uses art as the tool of forming personality. Hence

comes the questions whether it is necessary to teach art - different techniques and skills - when we want to use art in education? Is it necessary for the participants to have qualifications in the field of arts?

One of the main tasks of school is finding creativity and keeping it alive in every student. Unfortunately, in Hungary the case seems to be something very different: we still want the children to be able to memorize an incredible amount of lexical knowledge which leads them to the feeling of being lost in the system instead of finding themselves. Using art both in pedagogy and therapy helps the creative processes – but while in education we usually work on making a product, in therapy we work for understanding. As for problem-solving methods, that the next generations are going to use, we can truly say that flexibility, team-work/cooperation, receptivity, openness will play the main roles. That is why it is essential to emphasize emotional intelligence and creative thinking in education as well.

Today's children are definitely very different from those who were at school ten or twenty years ago. They live in an image-determined world, their way of thinking is sometimes closer to pictures than words, many of them have behaviour or learning disabilities, their skills in many fields differs from their peers', and they often have difficulties in verbal expressions which can be caused by anxiety, tension, changes in social situations, illnesses, loss, separation etc. Using art in pedagogy and therapy can give a secure way for these children to express themselves without words, to reduce stress, manage their behaviours and feelings or improve self-esteem. The teachers and class teachers can benefit from watching their pupils in an outside-the-school situation – for example during drama classes or music programmes in theatres and concert halls because the group dynamic is different in these situations.

The second part of the presentation shows two of the short-films that have been made during the programme together with some project photos. In each case, it is important to say when, where, with how old children, for what reason and within how much time the work was done.

- *Paper boots* – a short film which was made for the 100 year anniversary of World War I with 8 year-old children. Visual classes, role play, filmmaking.
- *Fairy Garden* – doodle animation based on Weöres Sándor's poem Tündérkert with 12-year-old pupils. Visual classes, animation, sound studio.
- *Museum learning at the Hungarian National Gallery* after exploring the exhibition of George Baselitz, ***Preview with Review*** with third grade and fifth grade students. Upside down portraits and prints.
- *The Book of Vegetables and Herbs* – the content of the book was connected to the Science Curriculum for fourth grade students. The illustrations were made with different techniques (sketches, studies, ornaments, fantasy drawings, silk paintings) after studying and examining the vegetables and herbs. The book can be made into an interactive source on the internet for all students and can be regularly extended with new materials and information. 8, 10 and 12-year-old pupils took part in the 6-week-long project.

Finally, the presentation points out the skills and competences artists, actors, musicians, therapists, artist-teachers, pedagogues must have to be able to be present in the "here-and-now" during the art programmes and classes. If they decide or if they are chosen to take part in Education through Art programmes they must be reachable, open to the world in all senses and open to changes, too. They must be capable of showing the modes of self-discovery and eliciting creativity.

VISUAL ARTS AND DESIGN EDUCATION

2.

POSTERS

Museum education of contemporary fine art

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Key words: Museum education; contemporary art

In the introductory phase of the presentation I will present the institutional background of the program and the participating group. The group of students participating in the program consists of students of the 12th grade classes. The students who are especially receptive to fine arts form the bulk of the group, as the drawing in the twelfth is one of the obligatory freely selectable art objects. Students who took the drawing have a fundamentally deeper interest in visual culture and arts.

The Studio of Young Artist`s Association (SYAA) is a large-scale institution with more than 500 members. It has been a prominent player in the contemporary art scene for nearly 50 years. Within the SYAA, there is a workshop on museum pedagogy that I am a member of. This group deals with the pedagogical processing and contextualization of exhibitions carried out in the SYAA Studio gallery.

My educational program is based on the museum pedagogical processing of exhibitions in the Studio Gallery. With a group of students from the 12th grade we are viewing all the current exhibitions and then performing tasks to practice the reception and mediation of art. Contemporary art mediation is a particularly difficult field for museum education. The program intends to concentrate on this area and set up a methodological model for the practice of accepting contemporary fine arts within the framework of the subject, visual culture which is part of secondary school`s syllabus.

Methods include

- explanation: brief introduction on the curator`s concept, and the subject of the exhibition
- visiting the exhibition, discussing individual reflections
- finding positive and negative examples, “like-dislike” game
- discussing questions and statements
- creating an art work linked to the subject of the exhibition

When arriving at the Studio Gallery, students will get a brief overview of the curatorial concept. The curator of the exhibition or an exhibiting artist gives students information on the concept and the purpose of the exhibition. They describe the participating artists and their works. In the next section, I summarize and make them aware of the information that I`ve heard. After the briefing, students will be given 30 minutes to view the exhibition (the studio`s gallery is around 80nm so this is enough time to view the exhibition).

Students receive a playful task, when viewing the exhibition: they have to find a piece of art which they like, and one which they dislike. The task is to begin the process of accepting, interpreting, decoding from conscious opinion shaping. In this context, it is very important for students to be able to formulate their positive and negative opinions consciously. Opinions are interpreted as the first step in conscious consumption of art.

After viewing the exhibition, we will gather again in the galley and discuss and interpret the visions. Here, I ask them to give examples of works they liked and those they did not like. I interpret their opinion whether it`s thorough and justified, in order to draw conclusions on how the concept of the exhibition became understandable to them. A debate develops around the works showcased. Students discursively disseminate their opinion.

I finish by giving students the task for the next week`s class. The task is to create a piece of art which fits into the concept of the exhibition. The task consists of two parts. In the first part, they should write a description of the artwork they plan to design on one side of a paper. The text is extremely important. On one hand for the decoding and on the other hand it models the conscious, conceptual creative process. In the second part, on the other side of the same paper they have to design the artefact described. The technique is freely chosen.

The creative process that appears during the task is dual. On the one hand, it is a private process that follows the course of a regular drawing class (task, creation). On the other hand, they also appear as creators in a broader context. Fitting to the concept of the exhibition, they are also exhibiting in an imagined situation. Modelling the autonomous, artistically creative processes, they are closer to understanding the mechanisms of contemporary, conceptual art, while they themselves become interpreters of the exhibitors themselves.

As a long-term pedagogical program I intend to offer interesting lessons about mediating contemporary art. The aim of the program is to create a modelling methodology that, by coordinating museum education and regular lessons in class, is an opportunity to incorporate the acceptance and transfer of art into the syllabus.

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Digital and traditional media images in child art – a longitudinal study

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MTA-ELTE Visual Culture Research Group

Key words: digital imaging; traditional visual expression; visual skills

The European Framework of Reference for Visual Literacy was developed by 60 researchers from 11 countries (ENViL, http://www.envil.eu /). In a longitudinal study launched in 2014, the diagnostic assessment of spatial skills, symbolisation and visual communication of 3-14-year-olds is undertaken to pilot this framework. The study presented here investigates the development of visual language of 6-10-year old primary school students through four drawing tasks. A similar study was carried out in Budapest with 3-6-year-old children.

RESEARCH QUESTIONS

- how skills of digital imaging (with graphics software for tablet, laptop and interactive whiteboard) and traditional visual expression (with pencil, felt tipped pen and chalk) develop from 3-10 years of age;
- how media and theme affects the level and communicative value of drawing skills
- how gender and age affects visual skills development

Assessment tasks: all children performed four drawing and design tasks. After completion, they explained their work in a video interview. The themes for the digital and traditional media images were the same:

1. Draw a map of a place you have seen or would like to see!
2. Design a dwelling for a favourite fictional character!
3. Draw your self-portrait twice: very happy, in your favourite dress, and when you are sad, in a dress you do not like.
4. Complete this linear composition to create a landscape / interior. (Two subtasks).

RESEARCH SAMPLE:

300 students aged 6-10, from in 15 classes (Grades 1-4) of two primary schools in Kecskemét (Tthe Laboratory School of Kecskemét College, Faculty of Education, and the Béke Primary School).

RESULTS

- Examining the role of medium we found that the *digital media improved the following visual skills:*
- *1th, mapping task:* complex composition, expressive use of colours, inventive use of signs and symbols.
- *2nd, dwelling design task:* dynamic composition, individual solutions in the representation of characteristics of a fictional hero, avoidance of cartoon clichés, expressive use of colours, and design of rhythmic patterns.

Traditional media improved the following visual skills:

- ***1th, mapping task***: depiction of form in detail, depiction of proportions.
- ***2nd, dwelling design task***: no linear correlation between drawing quality and medium (digital or traditional).

We identified the following symbolisation types on the 1th, "Draw a map!" task:

- *Documentary map:* representation of real life experiences, depicting "the road well-travelled";
- *Formalistic map:* form is more important than content; signs of a geographic, economic, historic or road map; are imitated;
- *Surrealistic map:* individual, creative solutions, phantasy drawings, scenes from tales;
- *Quasi-map:* some elements or maps are recognisable, but there are no roads, no one reaches a destination.

Composition types on the 1th, "Draw a map!" task:

- Geometric
- Organic

Types of spatial representation on maps:

- Base line arrangement – even in 4th Grade (age 10)
- Aerial view, intersecting, ribbon like roads – a rare type
- Mixed perspective

Spatial representation quality on maps:

Most of the maps represented homogenous spaces, with one point of reference. No significant development was observed: children aged 6-10 years manifest similar levels in spatial representation.

Some talented students produced unique spatial solutions:

- juxtaposing real world versus virtual world
- constructed versus deconstructed space
- shift from construction to deconstruction: the element of time appears

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Training practice and higher education: regularly updated visual education

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Key words: students with disabilities, differentiation; 'visual education', 'technical education'

The subjects 'visual education' and 'technical education' are highly beneficial for physically handicapped children. Since their childhood may unhappily be poor in stimulus, special lessons can provide them opportunity to get acquainted with natural raw materials, professions to inspire them while gaining experience about their particular attributes as a part of conductive development process.

For the great cause, that individuals with disabilities should be given a life of most possible full value is our education working for. Our teacher's generous work is effective; the pedagogical practice in the training school is of a high level. However we need to point out, that our students need definitely more support in order to be able to join to the world of labour, possibly not just in the last few school-years. Please, remember: after leaving our school, students with disabilities are facing a 40-50-year-long unaided, self-supporting life. It is highly relevant, whether they scrape a living on breadline or they earn money on their own and can feel as an active member of the community instead of waiting for some aid.

In our program new techniques, solutions are regularly tried out. The novelty mostly means the thorough consideration in creating development degrees i.e. the differentiation and the principle of gradient as the main characteristics of our program. The results of the experiments can be easily transferred to our curricular themes and our new ideas can be tested on the student's training lessons.

Our therapy wrapped in creative tasks proves to be effective - children will not notice, that they are continuously practising a definitive movement, grasping or some other developing exercise. The appropriate selection of tasks during the visual education helps in developing fine manipulation and co-ordination as well. At such a level of independence and with the help of proper differentiation even the motor disordered children's creativity may soar at the classes. Our mission is to support the teachers work by providing a wide selection of methods and techniques.

On my poster I show different lessons with some remarkable techniques. The photos will illustrate how children and students get from the simple, easy tasks to the application of complex techniques. From different kind of painting through wool felt making to candle moulding. My poster can be encouraging for teachers of handicapped children - may it give even more inspiration and motivation for them to search for and find new techniques and materials while preparing for conductive and free-time activities.

Computer-based assessment of children's colour perception and interpretation

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Key words: colour perception and interpretation; assessment and evaulation, art education; computer-based assessment

As a relevant part of visual literacy, colour plays an important role in the perception and interpretation of visual information. Research on colour perception indicates that different colour qualities (hues) influence emotion and cognition (Elliot & Maier, 2014). Models of visual literacy seem to lack reference to colour and an elaborated description of colour perception and interpretation for developmental program design also seems to be lacking.

The purpose of this presentation is to introduce a research results of a pilot constructed to reveal colour perception and interpretation skills on 1st and 2nd grades (age range: 6 -6.5 and 7-7.8 years) The conceptual framework of colour perception and interpretation are based on the findings of colour perception assessed in other domains and an analysis of arts curricula. "Situations" – arts education tasks contextualised in real life- as described by the Common European Visual Literacy Framework (CEFR-VL) are used to explore the functioning and developmental level of visual skills and abilities related to colours.

The test shows high reliability (Cronbach-α = 0,92). The dichotom data fit on theoretical model we applied WLSM (robust weighted least squares estimator) and THETA parametrization (Muthén and Muthén, 2010). The results indicated high correlation between the four hypothetised component: colour sensitivity, colour-and shape recognition, colour memory and colour-and meaning. We conclude, that besides the reliability and feasibility of computer-based assessment that gives immediate, personalized feedback to art teachers, it can be feasible for assessing children visual literacy construct, and the hypothetic model justified our predictions between their strong attachment.

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3.

MUSIC EDUCATION

PLENARY LECTURES

“Aesthetic Bildung”: rising to the challenge of learning within a multi-dimensional systemic framework

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For Wolfgang Roscher (1927-2002, Professor of Musical Pedagogy at the University Mozarteum Salzburg since 1981, Rector 1991-1995), aesthetic education was connected from the very beginning with the values of humanistic education. As early as 1970 the term “Polyaesthetic Education” appeared in his publication “Aesthetic Education - Improvisation - Music Theatre”[1]. This publication addressed to German teacher training shows very clearly the cultural-critical approach of the (German) student movement of 1968: overcoming the split into an elitist culture with its orientation towards masterpieces and a popular culture which amounts to nothing more than unreflected actionism. Roscher focuses on “aisthesis” in a ‘dual and integrative’ meaning: perception with all senses and creating significance and meaningfulness for life. From the very beginning, the methodological polyaesthetic approach includes aesthetic experience (didactics of reception) and expression as improvisation, artistic representation or performing (didactics of production).

In 1976, the book “Polyaesthetic Education. Sounds - Texts - Images - Scenes. Theories and Models of Educational Practice”[2] is published. It contains details on each individual word of the long title.

Theoretically Roscher structured Polyaesthetic Education by the dimensions of space, time, society, science and art. The salient point is the extension of each of these dimensions through philosophical-hermeneutical reflection: space expands to intercultural, time to cultural-anthropological and cultural-historical significance, society attains the double meaning of intersubjective and social communicative, science extends to interdisciplinarity and art to multi-mediality.

The term “Mehrwahrnehmung / poly-aisthesis” appears for the first time as a goal of “Polyaesthetic Education”. At the time Roscher was teaching at the University of Hildesheim in the north of Germany, which is now called “University of Applied Sciences and Arts Hildesheim / Holminden / Goettingen”. It can be seen as a successor institution of the German art school ‘Bauhaus’ and was the centre of the activities. The numerous examples provided by Roscher and his research staff in this book show how this goal of “Mehrwahrnehmung” is to be achieved in pedagogical implementation.

To a greater extent however, Roscher was able to realise his plans through his professorship in music pedagogy and his subsequent function as the rector of the ‘University Mozarteum Salzburg’ from 1981 onwards. In this period, and until the university reform of 2000, the “Institute for Integrative Music Education and Polyaesthetic Education” was established. Numerous publications prove the success story of this institute.

With the founding of the “International Society for Polyaesthetic Education” in 1982 (http://www.igpe.eu; http://www.paeb.org), which celebrates its 35th anniversary in 2017, a diverse thematic work began at an international level. One of the founding members is the Hungarian pianist and educator Erzsébet Tusa. She formed a Hungarian group around her, which for a long time was active in the International Society for Polyaesthetic Education; and within this group was Andrea Karpati. The international branching out led to numerous other countries as well as to other continents.

Unfortunately, most of the publications were only published in German as this was, for a long time, the congress language of the Symposia. Only in recent years have some contributions in English opened up an international reception and the website is gradually becoming multi-lingual. On the occasion of the 10th anniversary of the institute in 1991 - so to speak, as an exception - a translation of the essential contributions from the

journal “polyaisthesis” was published in English under the title “polyaisthesis. Multiperceptual consciousness and the idea of integrating arts and sciences in education“[3]. It contains the article by Erzsébet Tusa: “Art Education - as the Art of Education”.

The subject matters of some of the international symposia will highlight the topics covered by the International Society for Polyaesthetic Education: “Art of the World - World of Perception. Intercultural aspects …”, “Love and death, play and rule – meaningfulness of life and forms of human expression of all-artistic education”, “Sensual perception and apperception – Art and ‘the arts’ “, “Spaces for listening”, “Polyaesthetic Education as a learning objective?”

The international symposium 2017 “virtu.real - aesthetics of the digital” (http://www.paeb.org/index.php/aktuelle-events-projekte) will take place from 29th September this year, with the most modern media installations at the University of Applied Sciences St. Pölten, Lower Austria.

Some references to Polyaesthetic projects may illustrate the implementation of Polyaesthetic Education in the various fields of application:

“Intermedial Phenomena”[4] was an artists’ collective project in 2007 involving students from the department of drama and production at the University Mozarteum Salzburg. An audio-visual recording of an inter-medial art-installation that had involved the audience was reconfigured artistically and replayed simultaneously while students performed a speech-experimental premiere of the Composer in Residence, Marios Elia, from the main fountain’s basin in the baroque park at “Schloss Mirabell” in Salzburg.

One focus at the symposium 2006 was on the topic of “forgotten children”. This included a scenic, musical-theatrical improvisation referring to the story of “Peter Pan”, a project with primary school pupils on the deep psychological background of the Grimm “Hänsel and Gretel” fairy tale as well as the exhibition of the pictorial documentation on the Japanese “no-future-generation” of the “Hikikomori” by Wolfgang Seierl.[5]

The project “Individuum - Kollektivum” (“Individual – Collective”), which began in 2013, worked on the same collection of models for improvisational actions by the composer in residence Vinko Globokar. The contributions of the “Polyästhetische Werkstatt“, an annual polyaesthetic workshop of the pupils of the Oberstufengymnasium Salzburg Nonntal (Salzburg Nonntal Grammar School) scenarized individual and collective experiences of young people musically and theatrically. In addition, groups from the “Musisches Gymnasium Salzburg” (Grammar School for Creative Arts) danced their own choreographies into the sculptures of a primary school class from the letters “W-I-R-C-H”, which changed between “WIR / us” and “MICH / me”.
A middle school class from Innsbruck formed mandalas on the banks of the river Inn to correspond to the title “I am another” and presented collective works and the project video.(Review: http://www.paeb.org/index.php/event-review)

The most recent contributions will come from this “Polyaesthetic Workshop” of the Oberstufengymnasium Salzburg Nonntal and from the musical improvisation with students of our board member Masayuki Nakaji from Tokyo. They also will perform at the Symposium 2017.

The International Society for Polyaesthetic Education has also recently begun to reflect on its own curricular construct with the aim of “upgrading”. A preview of a project on action-research on polyaesthetic teaching situations in elementary schools will illustrate this approach. However, the discussion contributions of the conference are also expected with great interest.

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The Musical Brain: Learning and Memory

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Human musical behaviour is a joyous activity that has captivated hearts and minds for centuries. Music educators have often claimed that musical learning can have a range of benefits for children, from increased personal and social well-being to enhanced cultural understanding and even academic achievement. Recent experimental studies in the fields of psychology and neuroscience are beginning to add weight to such claims, with a growing body of research identifying the extent to which the brain engages with musical stimuli, and the potential effects of musical training on brain function and structure.

In this lecture I will begin by discussing the joyfulness of musical behavior and its importance in human experience. This will be followed by a summary of recent research findings on the neural basis of musical processing and evidence that musical training can affect certain aspects of brain function and structure. The focus of this part of the talk will be on learning and memory, and specifically on language and motor skills. I will then outline four different experimental studies conducted in the Institute for Music in Human and Social Development at the University of Edinburgh, each of which investigated a different aspect of musical learning.

The first study (Ludke et al. 2014) was conducted with 60 adult native English speakers, and provided the first experimental evidence that singing can facilitate short-term paired-associate phrase learning in an unfamiliar language. Participants were randomly assigned to one of three "listen and repeat" learning

conditions: speaking, rhythmic speaking, or singing. Participants were then presented with 20 Hungarian phrases to learn over the course of 15 minutes. Participants in the singing condition showed superior overall performance on a collection of Hungarian language tests after the learning period, as compared with participants in the speaking and rhythmic speaking conditions. This superior performance was found to be statistically significant for the two tests that required participants to recall and produce spoken Hungarian phrases. A range of further measures confirmed that the differences in performance were not explained by potentially influencing factors such as age, gender, mood, phonological working memory ability, or musical ability and training. These results thus suggest that a "listen-and-sing" learning method can facilitate verbatim memory for spoken foreign language phrases, which supports the commonly reported experience of individuals learning new foreign language words through songs.

The second study (Moore et al. in press), an MRI study, was also conducted with adults. We hypothesized that learning a musical, auditory-motor task with the left hand would lead to microstructural neuroplasticity in the right arcuate fasciculus, a white matter tract that links auditory and motor regions of the brain. Thirty right-handed participants were assigned to a motor learning condition either with (Music Group) or without (Control Group) musical cues. Participants completed 20 minutes of motor training three times per week over four weeks, resulting in a total of four hours of training. Using diffusion tensor MRI and probabilistic neighbourhood tractography, we identified mean Fractional Anisotropy (FA), axial (AD) and radial (RD) diffusivity values in the left and right arcuate fasciculi for each participant, before and after the four-week training period. FA measures the directionality coherence of water molecule diffusion and is often used to infer information about white matter structure and neural connectivity, while axial (AD) and radial (RD) diffusivity measure the magnitude of water diffusion parallel and perpendicular to the principal fibre direction. These parameters can be used together to provide an indication of levels of myelination and axonal membrane integrity. Our results revealed that FA increased significantly in the right, contralateral arcuate fasciculus of the Music group only, as hypothesised, with trends for AD to increase and RD to decrease. No significant changes were found in the left, ipsilateral arcuate fasciculus of either group, as predicted. This is a pattern of results consistent with *activity-dependent increases in myelination* and is the first evidence that adding musical cues to movement learning can induce rapid microstructural change in white matter pathways in the adult brain. These results thus have important implications for understanding how music can be used to support movement learning in rehabilitation contexts, and also for understanding how extensive musical training might affect brain structure.

The third study (Almeida et al 2017) was conducted with pre-school children. The aim was to provide insights into how a developing child freely chooses to dynamically interact with a musical beat, in the *absence of a prescribed movement action*. The particular focus of the study was sensorimotor synchronization (SMS), which is more usually investigated by measuring how *accurately* participants tap their finger to an auditory stimulus. In the current study, the aim was to explore the process by which young children find a musical beat and move along with it. Forty-seven children aged 4 to 5 years were recruited and invited to play "Ana's Game", in which they could move as they wished while they listened to a 30-second clip of rhythmic music, played at several different speeds. All participants were video recorded and the type and variety of their movement responses were documented using Laban Movement Analysis. Results showed that children made a remarkably wide range of different types of movement response, from foot-tapping and twisting to bouncing, jumping and running. In addition, each child showed a strong preferred movement and most children maintained this key movement throughout the process. Finally, almost all movements showed strong, biphasic, periodic motion, reflecting both the underlying structural feature of the music and the tempo changes, but rarely perfectly in time with the beat. These findings suggest that, for young children who are undergoing unique physical and motor developmental challenges, making their own free choices in response to music might be a more efficient and meaningful embodied experience for them, rather than executing prescribed movements and requiring accurate timing.

The fourth study (Moore et al *in preparation*) was conducted with children with dyslexia aged 7 to 11 years. The aim of

the study was to explore the potential role of auditory-motor synchronization skills in the transfer from musical training to improved language and literacy skills. Thirty-six children with dyslexia were recruited from two different schools and randomly assigned to either a Musical Activities Programme (MAP), influenced by the Kodály approach to music education and based on rhythm games (Overy 2008), or a Music Listening Programme (MLP). Both music intervention programmes took place on the school premises three times per week for 15 weeks and each music session lasted for 20 minutes. Before and after the music intervention, all children were assessed on their musical, phonological and literacy skills, with the hypothesis that children in the MAP group would outperform children in the MLP group on specific rhythmic motor skills, phonological segmentation skills and literacy skills, after training. Results confirmed this hypothesis, with children in the MAP group making significantly greater progress than those in the MLP group in reading, spelling and word reading efficiency. The MAP group also made significant improvements in rhythm copying and phonological segmentation and both groups made significant improvements in rhythm discrimination and phonemic blending. These results provide the first evidence of the *differential effects of specific types of musical training on language and literacy skills* and indicate that rhythm-based auditory-motor activities may be particularly beneficial for dyslexic children.

In conclusion, this selection of studies reflects a greater body of research which is beginning to show that, while the rich, complex nature of musical experience cannot be captured in a single experiment, it is possible to design individual, small-scale studies that provide insights into musical behavior and identify the potential for musical learning and memory to impact upon other areas of human intelligence. As brain-imaging technology (including EEG, fMRI, DT-MRI and TMS) continues to develop and improve, it seems likely that further understanding of the musical brain is on its way.

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Cultural heritage, musical diversity and functionality of music education

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CULTURAL HERITAGE OF MUSIC EDUCATION

Our cultural heritage is socially produced, and the cultural practices of individuals, institutions, and other cultural agencies and industries (e.g. concert halls, museums and galleries) contribute, through a process of intermediation to the phenomenon of 'consecrating boundaries'1. The resulting European identity provides us with a perspective of heritage that is a socially constructed and interpreted narrative, rather than an objective and complete account of our combined inheritance. In this project, through the use of 'communities of practice'2, we will explore how the cultural memories of individuals, European communities, and the European Union, as represented through the current and changing artistic and cultural products created for consumption through social media (e.g. YouTube, Twitter, Facebook), concert halls, public spaces, community groups, museums and galleries, are interpreted both within and beyond Europe. We will explore the constructed meanings attributed to these representations within different generations of Europeans, and develop a better understanding of how they are perceived beyond Europe.

'Cultural heritage' is the term used to represent the outputs from a selection process.[3] Which aspects of a culture survive or end up lost, is decided through a combination of social, political, psychological, cultural and curatorial choices. Both historicaly, and currently, 'power tools' are developed by communities to influence or ensure the survival of numerous cultural artefacts. Traditionally, examples of such 'power tools' have included concert halls, museums and galleries, festivals, national curricula, educational products, media events and community groups.[4]

However, European society is experiencing significant changes, with traditional 'power tools' being adapted, adopted, or replaced as a result of digitisation,[5+6] and the current patterns of contemporary consumption of social media sites such as Facebook, Twitter, & YouTube. As a result, artistic and cultural products - and the values they represent, which previously would have struggled to leave their place of origin can now become instant global phenomena.

In short, as a result of new and evolving phenomena such as 'trending', the curation, and therefore the interpretation of artistic products can now be carried out far more by the consumer and far less by the producer; far more by the amateur and far less by the expert. Currently, little is known about this process, but the speed with which unique social and cultural products and identities are lost is increasing dramatically as a result of the combined impact of consumer choice and commercially promoted mainstream products.[7] From 2000 onwards, the Web 2.0 is characterised by a participatory culture. In this context, users are involved, they interact with the content and collaborate with each other online to create 'user-generated content'. Cul-

1 Cf. Pierre Bourdieu (1990), *The Logic of Practice*, Polity Press, Cambridge.

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6 Cf. Rachel Heuberger et al. (2015), 'The challenges of reconstructing cultural heritage: An international digital collaboration', in: *International Federation of Library Associations and Institutions,* 3/41, 223-229.

7 Cf. Alexandre Lunsqui (2007), 'Music and Globalization: Diversity, Banalization and Culturalization', in: *Musique et globalisation* (Filigrane Nr. 5), Makis Solomos (Ed.).

ture is produced, consumed and mediated differently thanks to digitisation in general and the set of new web technologies that facilitate publishing and sharing.[8]

This galloping evolution has not failed to leave its mark on apparently insurmountable music educational tasks, as Werner Jank and Martin Stroh are highlighting

"Many people do not take the discipline of music quite seriously. Unfortunately, they are right many times. Ironically, despite our thematic oversupply as regards music, we deny the children and youths at school experiences of true learning success by demanding too little of them." [9]

To better understand how contemporary processes influence music education and to conceive acceptable for the future, it will be necessary to investigate on it as an aspect of cultural heritage:

A. To ascertain how contemporary depictions of European music heritage in formal and informal curation contribute to a current European narrative in music education.

B. To define and understand the patterns of contemporary music consumption and how these contribute to the current European narrative, as experienced and interpreted by those being involved in music education within and beyond Europe.

C. To inform and facilitate a renewal of the current European narrative through the development of a virtual interactive environment and materials, appropriate in both formal and informal learning settings.[10]

8 Cf. Henry Jenkins (2009), *Confronting the challenges of participatory culture: media education for the 21st century,* MIT Press, Cambridge Massachusetts.

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MUSICAL DIVERSITY AND MUSIC EDUCATION

Diversity and cultural heritage go together on a European level and beyond. The *European Music Council* in accordance with the *International Music Council* claims to foster ‚unity in diversity' (motto of the EU) as the main aspect of cultural heritage in Europe. Concerning music, unity can be operationalised in terms of identity:11 Which musical contexts belong tobelongs to oneself and which belongs to others? Therefore, music education will have to deal with historical and contemporary practices and their relative positioning between the poles of identity and diversity in different regions of Europe withwithin formal, non-formal and informal contexts of music learning. On the one hand, diversity is an important European value and should be a fundamental a fundamental aim of of musical practices. On the other hand the the increasing globalisation of music cannot be ignoredis is significant. One main goal is of is of inventinging forms through which an forms through whichan awareness of a common European heritage can be fostered and can be forstered and dealing with musical diversity can, in itself,, in itself, (or should) be an articulation of identity. The development of thesedevelopment of these forms can be can be a pedagogical dimension in itself, but the results are not only useful for music lessons in schools. They have have relevancece in each realm in which music education takes place, i.e. in both, formal i.e. in both formal and informal contexts.

In relation to the history of music, a common European heritage can be observed in the music and careers of many European composers. e.g. Dutch and German composers studied in Italy; Mozart and Liszt can be understood as globalised musicians in their time moving through the whole of Europe and ‚national romantic schools' have understood themselves as different from each other, meaning that they are conscious of their place in one realm or culture of music. Today, the rise

11 Cf. International Music Council, Many Musics. An IMC Action Programme Promoting Musical Diversity, at the Internet page https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKEwjM6f2Ls8LTAhXElCwKHYe1BecQFggpMAA&url=http%3A%2F%2Fwww.imc-cim.org%2Fmmap%2Fpdf%2Fmmap312frame-e.pdf&usg=AFQjCNHjAo2CmWD-9vYHuNG_24qOQBWOD9g&sig2=fk0FJRogbFzjiQT291BpLQ (4/2017).

of new and totally different trends – or new forms – of music can be observed, for instance, ‚Celtic music', ‚Neue Volksmusik' (or Folxmusik), and other ethnic fusions are trends that can be assessed as artificial constructions of cultural identity on the one hand and of musical diversity on the other. – While these ‚musical matters' are relatively well-known, it is not at all clear how our knowledge of them can be built or strengthened, fostering the idea of an inquisitive musical identity, that is interested in music which is different from the ‚music belonging to oneself'. One way can be seen in popularising classical European music, for example by delivering streaming media via the Internet. In this realm innovative pedagogies and creative didactic approaches should be developed and utilised, and media could be developed in collaboration with numerous stakeholders such as publishers, software developers and so on.

FUNCTIONALITY OF MUSIC EDUCATION

A. The first hypothesis stipulates that the origins of music were mainly functional and that music listening nowadays still is functional.
For example, it can be regarded as a means to seek compensation from daily routines. Thus, the fact that adults with an academic background attend a classical concert in a philharmonic concert hall is quite comparable to adolescents listening modern popular music with ear plugs from their smartphones.

B. The second hypothesis proposes that every music has a function, and this function can be graduated from the lowest level, the so-called viewpoint of the art for the sake of art (l'art pour l'art) towards a composition with a clear-cut objective or function.

1. Let's take as further example Beethoven's 1st Symphony as an example for a composition which exists only for itself and compare it to Kodály's 333 exercises with the objective to teach children to sing from sight.

2. Music, as community music has a social function in bringing people together with the aim of common musicking – term coined by Christopher Small.[12]

12 Cf. Christopher Small, *Musicking: The Meanings of Performing and Listening,* University Press of New England, ISBN 978-0-8195-2257-3, Hanover 1998.

3. Before the time of music broadcasting and recording and the growth of modern electronic media, music was used to exert a coordinating and supporting influence during daily labour routines and for festive occasions. Many of these songs were collected and published in outstanding opuses such as the "Corpus musicae popularis hungaricae" initiated by Bartók and Kodály.

4. ***Let's take for example*** church music: It cannot only be considered to be at the origin of Western music artistry, but it is music in the service of the practice of religion.

5. Finally, music as a social activity, and as an orally transmitted art form practiced within indigenous groups far away from European art music for ritual purposes has a close relationship to Christian church music in European culture.

A. The third hypothesis takes into account that, according to the second hypothesis, also music in education has a functional background, and it is manifold:

B. A Beethoven Symphony is to be considered as functional music if the purpose is used to achieve educational goals, such as knowledge of musical theory in both, general and specialised school settings.

C. The functional purpose of Kodály's 333 exercises is obvious for beginners in music education

D. Solfège has, from its historical background, a functional determination, because Guido of Arezzo conceived it as a method for internalising church chants in replacing the tedious process of willful memorisation by the more intelligible approach to learning of music reading by introducing a revolutionary new notational system. It is for this reason, that every solfège book has, besides its admittedly modest artistic ambition, mainly a functional claim based on its educational context.

3.

MUSIC EDUCATION

LECTURES

Path to creativity and free self-expression for all the layers of society: The Psalmus Humanus Integrated Arts Education Program

BODNÁR GÁBOR
ELTE BTK Zenei Tanszék

Keywords: integrated art education; structures in teacher training; partnership of institutions

Nowadays we can definitely declare that artistic activity in the childhood has a lifelong neurobiological, physiological, psychological and sociological impact.

In Hungary an effective and successful method of school education was produced by establishing the so called 'musical' primary schools, where the Kodály Concept gave a chance for every 6–14 year old children to develop abilities and to unleash their talent. This method made the Hungarian music education world-wide known, but the economical-political changes and scientific results of the past half century necessitated the application of new means in this area.

That is why the Psalmus Humanus Association for Art Education, which is a member of the Hungarian UNESCO Committee, has chosen one of Zoltán Kodály's thoughts as a motto of activity: 'Music belongs to everyone. But how could we make it so?'

The Association elaborated its Integrated Arts Education Program based on the Hungarian music pedagogy and the latest researches of natural and social sciences. Its renewing methods help children to get an active participation in artistic experiences – should they be prominently talented, of average abilities, living in good or disadvantageous social circumstances, healthy or impaired – by means of an integrated arts education.

The advantage of the innovative pedagogical system is a wider possibility for choice, which governs corporal and mental condition to the right direction.
The most important elements of the program:

- Opportunities of integrated art education
- Development of partial abilities through arts, music, and movement
- Connection between music and language teaching
- Teaching folk dance in an elementary school
- Drama pedagogy – development of personal and social skills
- Computers in music education
- The care of work capacity (Kovács Method)
  The possibilities of the multicultural education
- Romany poetry and literature
- Free-time training in fine arts for Romany children
  For those with disabilities and injuries
- Singing, music, and dance education for visually impaired children
- Art education for motor disabled children
- Art education for mentally challenged children

Besides, the Psalmus Humanus gives possibilities to instructors and students want to become teachers to change their attitudes regarding teacher training. To reach these goals the association contracted with the Music Department of Eötvös Loránd University, Faculty of Arts.
The lecture wants to show this common work.

Improvement in first graders' rhythm ability in the music classroom

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Key words: musical skills, rhythmic ability; creativity, innovation

Several studies in the past few decades have demonstrated that music learning has positive benefits on school achievement. It has a positive influence on the executive functions (Tierney & Kraus, 2013), the language perception (Cason, Astésano & Schön, 2015), the phonological awareness (Flaugnacco et al, 2014) the motor control and the auditory processing (Gaser & Schlaug, 2003; Musacchia et al, 2008). The main contributing factor is an innate sense of rhythm in pupils which we would like to develop. There is a strong link between it and the development of the essential skills for school achievement and it has an effect on school success (Janurik, 2008, Janurik & Józsa, 2016).

However, no study to date has examined the benefits of a rhythmic improvement program in the music classroom of first graders in Hungary.

The present study aimed to investigate the impact of our rhythmic program for improving executive functions and mastering motivation of first graders, which have a bearing on school achievement. Our program is based on playful tasks which strengthen the pupils' motor coordination, creativity and social skills. The teachers can choose such tasks from a set of exercises which is organized by levels from easier to harder.

We tested our program in a multiple-group design where the experimental group and the control group consist of three-three classes selected from two affiliated primary schools of two county towns. During the three-month experiment period, the experimental groups have to perform the exercises for ten minutes twice a week during the music lessons. We started the experiment in the first week of March and we finish in the last week of May. We will present our detailed results after carrying out the post-tests, which will take place in the first week of June.

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Overview of Music Island computer application

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Key words: IT tools; music education; skill improvement

The interests of students are fundamentally different from previous generations, as their lives are heavily influenced by the digital world. Parallel with the widespread use of digital devices, it becomes increasingly necessary to renew the methodology and the tools of music education. Tools, methods and relevant online tasks are needed to aid conventional music teaching methodology and to maintain students` natural interest and motivation as well as promote effective teaching.

According to international research, the use of digital devices, in addition to improving digital competence, makes possible the development of skills that are important in the 21st century, supports motivation, enhances creativity and promotes collaborative work.

Someone can download from the Internet or purchase several programs and applications developed for Android, iOS, and Windows operational systems for desktop computers, which can make the reading, recognition and composition of music and the learning of rhythm patterns and composers` lives more enjoyable. These are mostly in English and they are intended for the teaching and practice of sub-areas and are suitable for use in higher grades. However, the effective use of ICT tools at school is not sufficiently exploited in classical music lessons, and we have no knowledge of the national impact assessment of the Music Curriculum.

As a part of our four-year project, which promoted the use of digital devices, we are aiming to create a complex, vocal and music education program and measure its efficiency. We are developing a new computer program, Music Island, which runs on several platforms and is suitable for teaching lower-grade primary students in its appearance and language. The goal of this presentation is to give a short overview of this project.

The tasks which constitutes the basis of the program, is based on the music curriculum of the lower primary school for the development of music capabilities and skills. There are four main components: (1) the sounds of nature and music and musical instruments; (2) rhythm exercises; (3) music theory and the reading and writing of music; (4) music editing. When designing specific tasks, the following aspects of the curriculum were taken into consideration: (1) the improvement of listening skills, tune, rhythm, harmony, tone and dynamics; and their relations; (2) identifying moods and characters; (3) knowledge of musical styles and forms; (4) improvement of musical memory and internal hearing; (5) music theory knowledge.

For the future, more research questions may arise regarding the use of ICT tools, such as: What elements of the music skill system can be improved with digital devices? Is ICT equally effective for the development of average, below and above average students? What is the impact of new technologies on motivation and attitudes in the field of vocal music?

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4. DRAMA AND THEATRE EDUCATION

PLENARY LECTURE

Ecology of the Soul: The Necessity of Art Education in the XXI Century

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ECOLOGY OF THE SOUL

The Children's and Young People's Theatre Festival "Mater Terra" that I have been organizing with my team (0) for the last three years has as a rule to showcase processes and performing art done by drama studios and school drama groups dealing with themes of ecology and ecology of the soul.

When someone asks me, and they often do: "What is "ecology of the soul" , I answer with a question :"What it is for you?"

The answers are always interesting, deep, defining more and more and forming the complex meaning of this simple phrase I have come upon, searching for the theme or topic I wanted the young people and their drama teachers to focus on in their work. Something essentially important, and equally important as ecology, in the true sense of the word.

Ever since "ecology of the soul" has become the light motif of my own work and life, something I keep thriving towards and keep working on, also searching for all its complex meanings, what is it for me. It is a path a constant development, of risk, of challenge, a journey. Something you need to work on, to nourish and cherish. It is like a spiritual path towards the humanity in us.

LISTENING TO THE FUTURE

Being a performance artist, I always preferred to do theatre that poises questions, provokes and activates, rather than provide facts, or just mirrors the reality. In this presentation, I will try to do the same.

So one of the main questions I would ask for the beginning is: " Are we listening to our children?" To be more concrete I will ask it in another way "Are we listening to the future?" We are taught that " Historia est vitae magistra" (1) But what about the future? In this racing world, we find the realization of many incomprehensible technologies and ways of life we could encounter before only in science fiction books. What are the new professions of our children or children's children? And when I say children, I do not mean birth children, I mean all children, the ones we teach. And how could we possible teach them all the challenges and train them for the professions that we cannot ourselves comprehend? Also, the skills needed for "innovative" jobs, according to the OECD, are those – critical thinking, willingness to question, presenting ideas. (2) This is everything required for working in the creative process of educational drama and theatre. All I do know and have always known, what we can teach a child is to become a decent human being, living its life fully. And what better way then teaching it but through arts.

For me theatre and drama is rehearsing the future, as is the title of one of the expert meeting that will take place in the 25 th Anniversary celebration of IDEA- International Drama&Theatre in Education Association (3) that will take place in Evora in July. (4)

Soon we will forget what it is like to be in our bodies. Our minds will develop in the most amazing ways, but our bodies will bear the burden of too much sitting and to little activity. The connection of the body and mind, the creation or the expression through the body is something essentially hard to verbalize. Dance builds visuospatial skills. It literally changes our perception. In physical theater and dance you learn skills that are fundamental in a human being's life. (5) The more dance and drama-theatre is included in the curriculum, the more ready the children and youth will become for the future. In Japanese martial arts there is a concept of " Shin- Gu-Tai", meaning a perfect

warrior must develop Body-Mind-Spirit. We need to develop the "warriors of light" (6) who will live fully their life in this everchanging world. They have to be strong but also soft and flexible in their body mind and spirit.

Cell phones should be included not excluded from the schools. Kids are curios, for them the internet is a huge playground, a space they are capable of comprehending much better than all of us who had the computers enter their world in their late thirties or forties. For the work on drama and theatre in schools with it we have a wonderful gadget, a tool at hand we can use in the scenes and performances we create. We can use them for lightning, with the torch every phone has, as background music and soundscape, for creating and accumulating video clips and photos for multimedia performances. With this wonderful multitasking tool all at once children and the young people can be movie directors, cameramen, and let multidisciplinary enter the world of performance art. Of course, we all know the other side of the medal, the cyber bulling, the recording and making scenes of violence, and humiliation viral, but we have to educate the children about the vast possibilities and dangers of it all. Children did not invent reality shows, grownups did. They are just following our example.

THREE MAGIC "C" WORDS

A few months ago I was walking behind a small group of boys walking to school. They were perhaps around 12 years old. Unintentionally I was eavesdropping their conversation. They were practicing a spoken language exercise for the English class, stuttering over sentences describing a simple evening in the home with names of imaginary family members from an English text book. Suddenly one of them started making sexual allusions, in English of course, spicing with the theme the boys were just getting to be very interesting in at that age, this boring exercise. Between laughs and the progression of the "peaceful family evening" into something so much different, all at once I noticed that boys started speaking more and more fluently the English language. They were jumping into each other's sentences, becoming active and trying so hard to express in English the scenes that they were picturing in their head.

Of course, I do not suggest that sex should be used as a subject or theme, but I put this is an example how easy it is for children to learn and be active if they are actually interested in what they are being taught. It is the openness of allowing them to enter an unknown space that they have to research and investigate for themselves, triggering their curiosity, tickling them and provoking them. This is applicable to all subjects not only art.

So this covers the first "c" word, for the essence of teaching is found in the three words: curiosity, creativity, compassion. In explaining creativity, I think another key word is -process: what does it mean to be involved in a creation together with the teacher, together with the peers. Uncertain of the result. Process develops creativity. Process allows mistakes and errors thus opening new possibilities and spaces we have perhaps not been conscious even exist. In theatre we have the expression : Happy mistake. While rehearsing a play or in the process of creating it, mistakes happen allowing all at once a gush of new energy and life to enter the work and the form. These mistakes are sometimes so precious that the quality of the piece is often based on them.

Be free to allow the pupils to make mistakes. Allow them to be free and uninhibited in their expression and quest. Only then will they be motivated to learn with passion and develop fully.

COMPASSION : SOLIDARITY AND SUPPORT VS COMPETITION

When placing the principals of the Mater Terra Festival, and the way it functions, I decided not to blend in to the trend, or take the scheme of the existing Festivals in Serbia. I wanted to give an alternative to how things can be done, showing in that way the young participants that there is always an alternative, and we should have the courage and strength to practice it, in spite of all odds. Not blending but, giving an example of alternative ways.

So here we come to another question that needs to be asked when we are in the realm of Art Education: in our field is there place for competition? Sport is based on competition, and life in this neoliberal world is training children to be competitive, to compare each other, to develop in an individualistic, independent and selfish manner. Our Festival's main goal is to develop solidarity, communication and critical constructive ana-

lyses of each other's work. The performances are arranged in blocks, and the participants watch each other's work. We than have a circle, where we all sit together, young participants their drama teachers, parents, spectators, the expert team and we openly talk about what we saw, about the processes of creation, about the difficulties that they experienced in their work.

The expert team, consisting of our eminent drama teachers, performance artist's, psychologists, then writes a detailed feedback to the leaders of the groups so that they know what to work on more and develop more. At the first Festival I have heard kids, when they found out they came to a Festival where no prizes are given, ask: why did we come here at all. Experiencing it, they would come to me after and ask when will it take place next year. All the participants get the "Ecological Star" for they all are our stars, and the support team group and institutions get the "Ecological Guidepost" diploma . Also it is a nomadic Festival, it moves from year to year to a new place, venue, municipality for now in Belgrade, to be able to activate as much as possible the local community that lives there.

TEACHING IMPERFECTION – LEARNING TO BE HUMAN

Unlike sports, developing perfection, result, score, goal, let us dedicate ourselves on teaching imperfection. If you analyze art, true art, it does not come from the space of the perfect, of the strong, of the determined. No, art comes from the ever searching, changing, vulnerable, fragile and sensitive human soul. It comes from our imperfection. The more perfect we are, the more robotic like we become. The more imperfect, unpredictable, fragile, unprecise we are, the more we are human.

The creative process of doing theatre, especially contemporary theatre, of teaching theatre, in the process and devised way, has such a complex role in the lives of the young being. The instrument they have is their own being, body, voice.

The organization CEDEUM was one of the organizations involved in the DICE project that brought together practitioners from 12 countries working in educational theatre and drama (ETD). The purpose of our research has been to see how ETD impacts on 5 of the 8 Lisbon Key Competences for lifelong learning. These are:

- Communication in the mother tongue
- Learning to learn
- Interpersonal, intercultural and social competences, and civic competence
- Entrepreneurship
- Cultural expression

But for us the most important outcome of the project is also the addition of a 6th competence incorporating all five but also giving them all a new dimension: it is the universal competence of what it is to be human. As I quote from one of the outcomes from our project, in the DICE resource book for practitioners" An increasing concern about the coherence of our society and developing democratic citizenship requires a moral compass by which to locate ourselves and each other in the world and to begin to re-evaluate and create new values; to imagine, envisage, a society worth living in, and living with a better sense of where we are going with deep convictions about what kind of people we want to be. Educational theatre and drama is a social act of meaning-making and it has the capacity to ignite the collective imagination to do this." (8)

WORLD ALLIANCE OF ART EDUCATION (9)

A few years ago, in Sandens, we had the IDEA Europe meeting. (6) The meeting took place in the school where Kristin Runde, the member of IDA Europe has been teaching. The school was the VÅGEN high school that also includes the SANDNES Culture Academy in its most extravagant, beautiful architectural masterpiece of a building.

The School has around 800 pupils each year in different departments. Once a year the departments get together to create a joint work of art- a musical, one of the most complex and demanding art forms, but an art form that unifies in itself visual art through sets and costumes, including light design , not to mention graphic design for the program and poster, music, composing but also performing the music, dance, singing and acting. So the whole school unites to create this performance, that later the inhabitants of Sandens and nearby Stavanger come to see and enjoy. The teachers collaborate together, the pupils work in creative synergies. The performance space, is

a work of art in itself with technical equipment that many of Belgrade theatres can only dream of possessing.

Not everyone has these conditions and not all the schools are dedicated only to art, and have this possibility of interdisciplinarity, but this could be achieved in smaller scales in every school. Drama and theater and dance studies should be openly embraced in schools beside the visual art and music education. Collaboration could be achieved by creating school productions together.

I am following and looking closely at activities and meetings that are undertaken by the WAAE/World Alliance in Art Education . It is a sign for us to join forces and fight together for culture, and art education no matter what field of art we practice or teach ourselves.

ENDING POEM

As an artist, how could I end this speech, but with a work of art. Here it is, a jewel, a poem by Khalil Gibran I wrote as a teenager in big letters on the back of a large poster and hung in my parents' bedroom, to be the last thing they see before going to bed, and the first thing to see when they open their eyes , to dwell on it, just as I ask you to dwell on it now.

Your children are not your children.
They are the sons and daughters of Life's longing for itself.
They come through you but not from you.
And though they are with you, they belong not to you.
You may give them your love but not your thoughts.
For they have their own thoughts.
You may house their bodies but not their souls,
For their souls dwell in the house of tomorrow,
Which you cannot visit, not even in your dreams.
You may strive to be like them, but seek not to make them like you.
For life goes not backward nor tarries with yesterday.
You are the bows from which your children as living arrows
are sent forth.
The archer sees the mark upon the path of the infinite.
And He bends you with His might that His arrows
may go swift and far.
Let your bending in the archer's hands be for happiness;
For even as He loves the arrow that flies,
So He loves the bow that is stable. (Khalil Gibran: Your children)

Endnotes

1. the team is the Hleb Teater/Artistic Utopia/ Center for Drama in Education and Art /CEDEUM team consists of Kristina Mladjenović-coordinator and PR, Jugoslav Hadžić- technical director and program coordinator, Anastasia Tasić-visual and total design, I am involved as Artistic director. It also includes many volunteers and collaborators. www.hlebteatar.com, https://www.facebook.com/festival.mater.terra/
2. Proverb, Latin: "History is the teacher of life".
3. "Science classes won't future-proof our children. But dance might", Christina Patterson THE GUARDIAN, March 2017
4. IDEA involves about 80 organizations from all over the world that are dedicated to drama/theatre education. It is a platform for exchange, advocacy and promotion of drama/ theatre education and most of all support between the organizations. We learn for each other, we develop together, and what is so important, we get a firsthand insight what is going on with drama/ theater education on the world, to be able to compare, to show as example to our officials where the world trends are and what are we it follow.
5. In Évora, 7-16 July 2017, at the Scenic Arts Department, Arts School so Arts at the Évora University in Portugal the IDEA General Council Meeting will be held with important agenda points are the elections of the new board of IDEA and the discussions and decisions on the new Strategic Planning for a sustainable policy for IDEA for the next 25 years. Also the celebration of IDEA's 25th anniversary on 11 -12 July 2017: IDEA 25 YEARS during which relevant examples of good practice in the field of Drama/Theatre/Arts & Education related to the four central themes in the Program of IDEA 25 YEARS will be presented. Also students or young professionals with their leader(s) will participate in the Exchange project, titled 1M² (One Square Meter). Young people from various countries of all continents will work in cultural mixed groups to create and present theatrical materials inspired by the themes of the Experts meetings. The results of their work will be presented at the celebration day IDEA 25 YEARS on 12 July.
6. Proverb, Latin: "History is the teacher of life".
7. "Warrior of light" a concept of Paolo Coelho, developed in his books "The Alchemist' and "The Warriors of the Light" . It appears also as a character of virtual games.
8. "...behind the mask of ice that people wear, there beats a heart of fire."
9. "In order to have faith in his own path, he does not need to prove that someone else's path is wrong."
10. "Warriors of light are not perfect. Their beauty lies in accepting this fact and still desiring to grow and to learn."
11. "The Warrior of the Light is a believer.
12. Because he believes in miracles, miracles begin to happen. Because he is sure that his thoughts can change his life, his life begins to change. Because he is certain that he will find love, love appears."
13. (Paulo Coelho, Warrior of the Light)
14. IDEA Europe is the informal regional network of IDEA, the International Drama & Theatre in Education Association. It has annual meetings every time in a different country. For example, in 2009 the meeting was held in Budapest organized by HUDEA. In 2012 in Belgrade, organized by my organization CEDEUM.
15. "Making a World of Difference"/A DICE resource for practitioners on educational theatre and Drama, Chris Cooper DICE team and Consortium 8.
16. WAAE consists of the representatives of four organizations: International Society for Music Education, (ISME, https://www.isme.org/), the World Dance Alliance, (WDA, http://www.worlddancealliance.org/), the International Drama & Theatre in Education Association, (IDEA, http://waae.edcp.educ.ubc.ca/), and the International Society of Education through Art (InSEA). http://www.insea.org/.

4. DRAMA AND THEATRE EDUCATION

LECTURES

Applied theatre in teaching multicultural education theory

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** Opening Round Central European School of Playback Theatre ELTE PPK IPPI

Kulcsszavak: Multicultural Education Theory; Playback Theatre

Our presentation will introduce a course we developed at the Intercultural Education and Psychology MA program. With the course we aimed at enabling students to read and interpret scientific texts individually and in groups; and to reflect on their personal relations to these texts to discover how they could implement the theories in their professional practice. During the classes students read, discuss and analyse scientific texts and with the means of the Playback Theatre they discover their own personal and professional experiences that are related to the texts.

This new methodology was needed as the inclusion and reutilization of personal experiences to the scientific discourses meant a challenge to our students in previous years, so we started to look for a tool that could facilitate this process. In our interpretation multicultural pedagogy and the Playback Theatre are standing for very similar values and principles, they are able to support each other. Critical perspectives, discovering personal narratives, interpreting and analysing personal experiences, preparation for decision-making and social action, and empowerment are core values of both fields.

Playback Theatre is a powerful way of communication, and one of the most important community based contemporary theatre forms. It can be practiced as a theatre and also applied as a method in various contexts. In this original form of theatrical improvisation, people tell real events from their lives, then watch them enacted on the spot. It generates personal & social transformation. A personal story told and immediately enacted in a spirit of respect, creates an atmosphere of deep listening. The process is effective at almost all level of skill on the part of the actors. All that is needed is respect, empathy, and playfulness. The basic idea of Playback Theatre is very simple. And yet its implications are complex and profound. When people are brought together and invited to tell personal stories to be acted out, there are a number of messages and values that are communicated. At our course we use the Playback Theatre as a form that enables our students to formulate and give a voice to their own thoughts and practice hearing their own voices in professional environments.

This helps them to bridge the distance between the theories they are learning about and their own professional practice they are just formulating in diverse environments. We are not aiming at creating playback performances, but using action-oriented methods, dramatic methods and interactive games in to a complex way to reach the goals of the course.

THE GOALS FOR THE COURSE BY COMPETENCIES

1. Enablig students to tell their stories: understanding the layers of their own stories, and how other people's stories are part of theirs.
2. Getting experience in telling stories: to create the ability of hearing and listening others
3. Personal and professional self-reflection: understanding how a person's stories are relating to their diverse layers of identity
4. Enriching the professional methodological pool of our students
5. Offer students to discover the connections between the theory and practice of multicultural education by discovering the layers of their own stories, the diversity of theoretical frameworks and perspectives and enable them to explicitly express the connections they find relevant

THE METHODOLOGY OF THE COURSE

- Reading scientific text on the theories multicultural education
- Finding personal experiences that are related
- Discovering the complexity of these experiences by identifying the perspectives in them
- Practicing to change perspectives
- Reconnecting the stories that are discussed and understood from multiple perspectives to the multicultural education theories
- Formulating new practical answers to the experiences from a professional perspective
- Reflection on the possible applications of the Playback Theatre in the student's own professional practices.

The course is ongoing in the spring semester of 2017, at the conference we will give an account on its results from the perspective of the students and also the facilitators.

Applied theatre in education

Paper presentation and workshop

JICMAN, ANDREA, DARIE, BOGDANA AND SEHLANEC, ROMINA

National University of Theatre and Film I.L.Caragiale Bucharest

Key words: Applied Theatre; Drama in Education; Workshop

The team formed by Lecturer PhD Bogdana Darie, PhD Student Romina Sehlanec and MA Teaching Drama Student Andreea Jicman, from the National University of Theatre and Film "I.L.Caragiale" Bucharest is honoured to take part in your Conference. We have developed a series of projects concerning the value of Applied Theatre in children's education and other fields. We will present our work until now and our future aims in a seminar presentation, supported by a practical workshop in order to show our methods and techniques.

This workshop will consist in theatre games that have been tested in working with children, drama students and adults; such exercises enabled the participants to improve their social and personal skills. Education through Applied Theatre plays an important role in nowadays' society as it develops the child's social integration abilities, as well as it brings the creative nature of humans to light. Therefore, drama teachers and theatre/art practitioners have to be in accordance to the modern age and one step ahead, in order to meet the needs of the future generations.

Our presentation and workshop promote contemporary means of expression in the theatrical art and to encompass European professional and artistic traditions based on intercultural dialogue. Our aim is to share our experience and to discover new methods and techniques in the teaching-learning process enabled by the art of Theatre.

Moreover, we have published a series of handbooks dedicated to teachers and pupils (gymnasium and high school level) and we intend to talk about this process and the reasons that led us to conceive these works. In Romania, Drama is not part of the pre-academic curriculum yet. Hence, the National University of Theatre and Film "I. L. Caragiale" Bucharest undertakes a series of measures in order to change this situation. For this reason, we initiated and coordinated the national project UNATC Junior, which was financially sustained by the Ministry of Education in Romania.

The project was designed for youngsters, their parents and teachers, and aimed to promote the value of Applied Theatre in Education. The project consisted of both theoretical and practical research. On a theoretical level, we intended to develop our knowledge and practices related to Teaching Drama in accordance to the European vision. The practice consisted of theatre workshops addressed to the target groups mentioned above, during which we observed the interaction between pupils and teachers, as well as the one between children and their parents. On this journey we have encountered several issues that are worthy to be discussed. Applied Theatre and Drama are two valuable concepts that we intend to use in order to explain the approach in our theoretical and practical research concerning the educational process.

Acknowledgements

The project was supported by the National University of Theatre and Film "I.L. Caragiale" Bucharest, with the help of the Ministry of Education in Romania.

The art of rhetoric: speaking out – standing out – stepping out

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Key words: rhetorical arts education; innovative, integrative and creative teaching methods; Z generation

In our contemporary life higher education in so many ways has become the narrow field of consciousness-raising and - at the same time - the „showroom" of creativity and personal involvement. Teaching (rhetoric and public speaking techniques) become the arena of persuasion: showing students that school curricula can be more than interesting, highly involving and intensively personal. Therefore rhetorical or any arts education needs to be adopted to the characteristics of the newest challenges and the inquiry of the newest generations on three different levels. Therefore, educational methods should

- meet and fulfil the growing challenges of the 21st century audience;
- refer and enter the complex of networks and the ever-changing contexts of art and public performance;
- approve and denote the ideas, images and potentials of new generations, who's members now entering the classrooms with the highest expectations ever.

In other words, art education (and so do every lecturer) faces a vague and continuously changing request: the rhetorical idea of being present by presenting and evoking interest not only needs to be intensely welcoming but also highly invitational. In the meanwhile, educational materials not only have to carry the promise of practical knowledge, but need to be presented in personal and highly involving ways, fulfilling the expectations of the audience.

It's not a new idea that the generation Z is also referred as „Content Generation" (or Generation C) highlighting the idea that members of this generation (15-24 years olds, born in the middle of the '90s or the early years of 2000 - according to Törő-csik-Szűcs-Kehl, 2014) are more likely to think of themselves as independent thinkers, free-lancers and (co-)creators of all types of contents.

Therefore, the „C"s got used to search for information following their own interests, instead of accepting already given ideas, theories and cases – this attitude is highly represented in in-class situations of higher education. This means that students are best to be treated as creative, critical and committed participants of university lectures in order to create a mutually satisfying agreement which supports self-development and also maximizes the effect of educational goals (in fron of and behind the sCeens).

In my study, I will use a „4C" method (Committed, Critical, Collective and Creative methods) to refer to my key ideas of building innovative educational programs with which I would like to encourage students and lecturers to discover the practicalities of a modern and creative educational plan: „making participants „C the art" in higher education. The presentation method of the essay is based on three key questions:

1. How to spot the „ART" in SMART learning/teaching methods?
2. How to support REACTION instead of REPEATING?
3. How to create INCOME out of INTEREST?

Research techniques and methods cover the following:

- Scanning for new ideas: presenting different problems and answers in connection with the practicalities of rhetoric and public performance;
- Collecting and reviewing useful techniques: examples and details of powerful, innovative in-class exercises and a case study presented;
- Best practice sharing: introducing different teaching methods in order to support individual learning processes and effective, comprehensive approaches in in-class learning.

The central goal of the current study is than to present and encourage innovative methods and successful approaches in higher education of rhetoric and public speaking techniques, supporting university lecturers, in order to deeply understand and re-interpret the role of personal and professional knowledge. The phenomena of creative educational methods based on this personal „know-how" will than contribute to the idea of „sharing-economy" within the academic field by increasing creativity on both sides and boosting practical implications of the course curricula (such as e-learning and integrative learning methods e.g. flipped classroom).

Learning through drama and applied theatre

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Key words: drama in education; applied theatre; drama-based learning

It would appear that Hungarian higher educational practice has not yet utilized the problem-based learning potential of drama. We should take into consideration the fundamentals of learning theories of drama. Our courses entitled `Drama in education` and `Theatre in education` focusing on the development of key competences, in particular the competence of self-awareness. Sessions involving self-awareness experiences are used to lead students up to the point where they are ready to learn to conduct such sessions themselves and to learn the techniques required for leading others in play.

Currently, we are engaged in several projects aiming to develop gifted special needs students and also disadvantaged youngsters in the fields of arts-based research (Leavy, 2009), drama in education and theatre therapy. The main objective is to create new 'Inclusive Drama Method' for Hungarian contexts, with the aim of sensitizing participants involved in the fields of disability studies and higher education. Daily educational practice, as well as several national and international studies, shows how effective drama can be. The success of its educational applications is based on the personal skills and strategies of the drama teacher. The facilitator can help the participants share and understand their experiences on personal and social levels. The students gained experience of the differences in communication, as well as the diversity of problem-solving and arguing skills in the context of theatre and drama (Novák, 2015).

As drama teachers we use well-prepared and well-designed 'learning through actions' exercises in our workshops. The group creates a social environment that is sacrosanct, in that its conditions are agreed on and protected by the roles that have been offered. The drama teacher can direct the creative processes of the group and he or she can also direct attention towards more important problems by making remarks. This does not involve manipulation: the drama teacher usually adopts a role and acts as an active character in the scenes – thus directing attention towards deeper learning and maintaining tension (Novák, 2015).

Interactive teaching methods (cooperative techniques, project work, etc.) have become widely accepted, so there is no need to argue in favour of the interactivity of theatre in education. It is beyond dispute that if theatre comes true in the school the student experiences this interactivity: he becomes a player, a creator. If the school goes to the theatre, the student remains a mere spectator. Applied theatre and drama in the school is able to reveal aspects of social life on dramatic, narrative, reflective, symbolic and aesthetic levels (revealing the necessity of human conditions) thus eliciting a reaction from the audience: committed creative work and self-reflective feedback, during the increasingly deeper learning process transform the 'spectator' into a thinking-playing individual (Boal, 1979).

Using drama and theatre, we create a place and an opportunity for the participants to discuss questions on the topics of diversity, disability or being different. The project also helps them to be able to share their everyday experience and feelings in the group. This process can lead them to creating their own stories and finally to taking part in an open drama and Theatre in Education laboratory. Focusing on disability and special needs, we aim to familiarise them with the significance of creating equal opportunities for all. For our part, we focus on social activity and equality issues such as social inclusion, thus providing the participants with an opportunity to strengthen their own self-awareness (Novák, 2015).

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5. CHILD AND YOUTH CULTURE

PLENARY LECTURE

Youth visual culture practices and their relevance for art education in finland

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This presentation explores the possibilities to explore youth own visual culture practices as a starting point to visual arts learning in schools. The contexts of the presentation rely on the new National Core Curriculum for Basic Education 2014, in Finland, which sets students' own visual culture as the first content area of visual arts learning.

The first section of the presentation includes an overview of the ideology of the general part of the new curriculum for comprehensive schools. In this section, the background and history of visual art education school curricula and the principles of the new curriculum are described. This section focuses on the current needs for the curriculum change: What are the societal and cultural changes that effects on the National curriculum change, and what are the dimensions of learning in visual art foe an individual, from the perspective of multiliteracy and visual literacy. The section will also describe how the different school subjects and different art forms are able to collaborate according to the new curriculum. The curriculum encourages towards transdisciplinary learning, subject integration, phenomenon based learning, teachers' collaboration and co-teaching between all school subjects. It also explores how the curriculum invites teachers from different arts forms to collaborate in an interdisciplinary manner. During the presentation, the recommended point of departures and possible obstacles for this type of teaching are introduced.

The second section of the presentation introduces the new Finnish visual art curriculum 2014 and explores how youth visual culture practices can be a relevant part of visual arts learning in schools. This section starts with a detailed analysis to the visual art curriculum, its tasks, its four focus areas of objectives of instruction, and its three main content areas. The section then focuses to discuss youth visual culture practices outside of schools, and how they might be informative to artistic learning also in schools. Contemporary time, culture and society are reviewed through strategies of art, arts-based thinking and through the stances they echo. The institutional fractures of art, the cellularity of the school, and the new developing understandings of the ubiquitous nature of learning seem to engender a permanent change in the pedagogical solutions of visual art education. The examples of ubiquity learning in visual art are given from youth cultural practices, such as parkour and gaming. The presentation will end with a wonder of possible visons of the future of visual art education.

SECTION 1

The national core curriculum for basic education is determined by the Finnish National Board of Education. This board invites specialist to work with them, approximately every then years to renew the national curriculum. During the planning and developing process 2012-2014, there were multiple working groups, one for each school subject, with more than 300 people working together for the curriculum revision. The general part of the curriculum includes the objectives and core contents of each subjects, as well as the principles of pupil assessment, special needs education, pupil welfare and educational guidance. The principles of good learning environment, work methods and the concept of learning are also addressed in the core curriculum (Ministry of Education and Culture, Finnish National Board of Education, CIMO, 2012).

The reform process started from child's school experiences, such as happiness in school together with learning results. The question was raised: how could a learning process include joy of learning? How is learning changing in our society and what might be the key competences the children and youth need for the future? It became clear that subject competence is not enough anymore on its own and transversal competences are required. The school should not just to react to societal changes, but it has to be a changing force itself. What are the values

in the changing world and how can school act as proactive form in it? (The Finnish National Board of Education, 2014).

The ubiquitous nature of learning means that learning happens everywhere, in different spaces and places, as much in physical and in virtual spaces, all the time. School is just one place among many others, where learning takes place, and it might not appear as the most attractive site for learner for all young learners (Hilppö et al., 2012). Student-based learning recognizes how learning happens everywhere and all the time, ubiquitously. From the learners' perspectives, it is not meaningful to differentiate learning based on different learning sites, such as school learning (formal learning) and learning in hobbies and during free time (non/informal learning), or learning in physical and virtual sites. For the learner, it is meaningful to have an intact and profound learning experience, especially when it is tackled together with actual and tangible real-world issues or phenomena.

Through emphasizing transversal competences, the curriculum connects school learning with real world issues. Contemporary and future working life requirements include more teamwork and entrepreneurship skills, and there is a need for abilities to use creative, artistic, design based and imaginary thinking. Currently there is a huge gap especially between youth lives (marginalization, unemployment) and working life and professional requirements. Phenomenon-based learning has been taken as a method to respond to these requirements in the Finnish school system. Phenomenon-based learning challenges the idea that students' thinking needs to be organized around different school subjects, while the world seems to be much more complex than that. The idea is to serve students' needs in contemporary society better. In phenomenon-based learning, teaching is organized and students are encouraged to connect learning around a real-world phenomenon and analyse and learn through an interdisciplinary approach.

Student-based ubiquitous learning, and arts-based practices are connected to visual culture education, which is an important approach to visual art education. Visual culture education builds on critical thinking and includes all visuality, including for example art and popular culture images. Students-based approach, and students' own images and visual practices are valued as contents of learning. Visual culture evolves from critical pedagogy and feminist pedagogy, which both acknowledges pedagogical activities being linked outside the school (Giroux & McLaren 2001; hooks, 1994; Tomperi & Piattoeva, N., 2005). School is hence not isolated from the rest of the world but as an institution and as a learning community, it reflects society. In contemporary approaches, school and its teachers are often understood as learner itself (Senge et al. 2012; Lonka, 2015). (See also European Parliament (Ed.). 2015. Innovative Schools: Teaching & Learning in the Digital Era – Workshop Documentation.)

Generally, the entire curriculum 2014 emphasizes phenomenon-based learning and subject integration, multi-literacy, values, cultural diversity and ethical, aesthetic and ecological justice. While the new curriculum is generally written based on the different school subjects, it might be that the schooling would not be organized around different school subjects in the future. Phenomenon-based learning challenges the idea that student's thinking needs to be organized around different school subjects, while the world seems to be much more complex than that. The idea is to serve students' needs in the contemporary society better. In phenomenon-based learning, teaching is organized round a real-life phenomenon and analysed and learned through an interdisciplinary approach. This type of working requires teachers' collaboration and a student-led investigation, with students recognizing their own needs in filling the gaps in their knowledge. Perhaps the most important perspective to the phenomenon-based learning is the collaboration of teachers, integration of subjects, and the interdisciplinary approach to teaching.

Multi-literacy penetrates the entire 2014 curriculum. While the notion of multi-literacy is recognized as tool for multicultural communication, it is understood as recognition for languages used in different academic fields and hence different languages with different school subjects. In addition, it means multimodality, symbolic and communicational levels of literacy through different sensual competences: visual, verbal, kinesthesia, numeral, and auditory. In the visual art education curriculum, all these aims are quite inherent. Overall, the most important changes concern more diversified understandings of art and culture. In the new curriculum, it is possible to see the shift from

modernism toward contemporary understanding in arts, as well as to recognize a shift from discipline-based art education toward visual culture education, and beyond. The needs for national curriculum changes in the visual arts stems mostly from Finnish cultural and societal changes. The 2014 revisions for visual art are targeted on several areas in the curriculum and the section 1 of the paper will clarify the two main ideological changes.

SECTION 2

The task of the visual art subject is the same for all each group, from 1-2nd grades, 3-6th grades and 7-9th grades. In addition, the curriculum offers one paragraph sub-tasks for each of the three grade levels, directed particularly to the specific age. However, that main text is word to word the same for all the grades from 1-9th grades:

"The task of the subject of visual arts is to guide the pupils to explore and produce images of the culturally diverse reality by the means of arts. Producing and interpreting images reinforces the pupils' construction of identity as well as cultural competence and communality. The pupils' own experiences, imagination, and experimentation form the foundation of teaching and learning. The teaching and learning of visual arts develop the pupils' ability to understand phenomena of visual arts, the environment, and other forms of visual culture. The pupils are offered different ways of valuing and affecting reality. Pashing on and reshaping traditions is supported by reinforcing the pupils' awareness of cultural heritage. Teaching and learning support the development of the pupils' critical thinking and encourage them to influence their surroundings and the society. The teaching and learning in visual arts lay a foundation for the pupils' local and global agency.

By working in a manner characteristic of visual arts, the pupils practice experiential and multisensory learning as well as learning by doing. The pupils examine visual arts and other forms of visual culture from historical and cultural viewpoints. They familiarise themselves with different views on the tasks of art. The pupils are guided to use different tools, materials, technologies, and means of expression diversely. The pupils are encouraged to develop their multiliteracy by utilising visual means of expression and other modes of producing and presenting knowledge. The pupils are provided with opportunities to study through multidisciplinary learning modules in cooperation with other subjects and actors outside of school. The pupils visit museums and other cultural sites and explore the possibilities of visual arts as a pastime."

(The Finnish National Board of Education, 2014)

The division of the four main objectives of teaching are the same for each age group: *Visual perception and thinking; Visual production; Interpreting visual culture; and Aesthetic, ecological and ethical values.* In addition, the curriculum offers with main objectives different sub-objectives for age groups 1-2nd grades, 3-6th grades and 7-9th grades. The main content areas of studies in visual art are grouped under three titles: *Pupil's own visual cultures; Visual cultures in the environment; The worlds of visual arts.* The idea is that classroom teachers and visual art teachers will plan their local visual art curricula based on these objectives and content areas.

The first content area, *Pupil's own visual cultures,* has been the most discussed area of instructions after the new curriculum for visual art teaching was published. It is also the area where the curriculum mostly differs from the previous versions. There have been many suggestions for what this content area might and should include. Some has wondered if this mean that one third of education would not include teaching anymore, because the students' own experiences of visual culture should be in the centre of the contents. Clearly, this is not the idea of the curriculum. It is important to remember that while the children and youth are living through much more rich and vivid visual culture practises than their parents, through constant production and consumption of visuals, they are not experts of visual literacy. There are multiple issues in visual communication and production that should be considered, discussed and learned. The potentiality of representation that this richness might be able to cause for children's and youth lives is however significant and should be benefitted. The curriculum sets the specific perspective to the students own visual culture practices. While the students centred thinking is not new in pedagogy, this perspective has already shown to be somewhat challenging for teachers. This approach is well in line with the philosophy of the entire curriculum, which aim is to see pupils as active agents.

While *Pupil's own visual cultures* might include all kinds of visual practices, and perhaps often quite traditional visual art forms as well, teachers should be prepared to learn from visual culture areas that they might not be familiar with yet. This gives an opportunity for teachers to learn together with students about ideas they would otherwise never come across with. Students can hence be seen as expert of a particular visual practice. The idea of empowering students as experts of their own learning is not a new approach per se (see Freire, 2005).

It is important for a teacher to pay attention that student's form of visual culture practice might not be essentially and initially visual. However, by leaving in the abundant visual era of ours (Mitchell, 1994) the many youth culture areas, such as skateboarding, and parkour, gaming and game design, includes visual practices, for example trough making videos and game designs. This presentation will discuss these visual practices and how they might offer a crucial point of departure for teaching from the *Pupil's own visual cultures.*

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5.

CHILD AND YOUTH CULTURE

SYMPOSIUM

ERASMUS + PROJECT (BAGMIVI) FOR EDUCATORS, MUSEUM STAFF AND EDUCATION OF INDIVIDUALS WITH VISUAL IMPAIRMENT.

BEÁTA PRÓNAY

ELTE University,
Bárczi Gusztáv Faculty of Special Education

In this symposium we are introducing the process and results of the BaGMIVI Erasmus + project. Erasmus + is the project of the European Commission, EU programme for education, training, youth and sport. Information is provided through three oral presentations and video illustrations of the program.

Article 30 of the United Nations Convention on the Rights of People with Disabilities and its Optional Protocol (CRPD) recognizes 'the rights of persons with disabilities to take part on an equal basis with others in cultural life'. There are multiple factors why the consumption of culture is only in part accessible for individuals with disabilities.

'Bridging the Gap between Museums and Individuals with Visual Impairment' (BaGMIVI) is carried out between 2014 September - 2017 August, entitled to the promotion of access for individuals with visual impairment to museums. The project aims to promote strategic partnerships between museums and schools (mainstream/segregated schools for children with visual impairments) within which students are enrolled. The main goals are the following:

a. a. to enable the museum members become aware and update their knowledge regarding the barriers that impede the access of visitors with visual impairments to museums,

b. b. to create learning, cultural and social opportunities for individuals with visual impairments,

c. c. to promote the collaboration between museums, schools and associations of individuals with visual impairments,

d. d. to underline the best practices and guidelines for the development of an accessible and inclusive museum for visitors with visual impairment.

The first presenter summarizes the process, the results of the BaGMIVI project and the international partnership. Then, key steps of the planned activities are described, with a focus on the program developed in Hungary. The partners of the Hungarian program were Eötvös Loránd University Faculty of Special Education, King Saint Stephen Museum, Székesfehérvár and the School for the Blind, Budapest. The structure of the project from literature review and summary through national need surveys are detailed, followed by the introduction of the training for museum staff, consultations on necessary environmental modifications, exhibition planning and creation, ending in the result of museum visits for different age groups from the School for the Blind, Budapest.

The second presenter as a legally blind person gives first-hand information on experiences in art museums. The presentation explains technical issues, such as infrastructural and info communicational accessibility, and the need for tactile learning are also highlighted. The audience will be introduced in detail to the presenter's impressions on the consumption of artistic beauty being visually impaired.

The third presentation covers the following topics:

Legislation: supporting individuals with disabilities in visiting Museums in Hungary. The good practices since the 90's of accessible exhibitions, when a group of museums opened their gates to provide people with disabilities on-the-spot educational and artistic opportunities. Museum educators were leading

professionals in this movement. Besides these developments, people and especially children with visual impairment still have to face obstacles when visiting museums. Via BaGMIVI project an opportunity opened to link universities as training institutes of special teachers, museums who wish to provide accessible exhibitions and programs and schools for blind children as consumers in order to create educational programs in the museum.

The presentation briefly summarizes the survey carried out in the project and some aspects of the training offered to museum staff. The roles of the different parties in this unique approach are introduced just as some of the results will be illustrated to the audience.

Finally, results of BaGMIVI are illustrated via video fragments taken during the different project activities.

Acknowledgements

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Overview of the bagmivi erasmus + project

KRISZTINA KOVÁCS

Eötvös Loránd University, University, Chancellery

Keywords: education for individuals with visual impairments; museums as resources of education; partnership in art education

Article 30 of the United Nations Convention on the Rights of People with Disabilities and its Optional Protocol (CRPD) recognizes 'the rights of persons with disabilities to take part on an equal basis with others in cultural life'. There are multiple factors why the consumption of culture is only in part accessible for individuals with disabilities. *'Bridging the Gap between Museums and Individuals with Visual Impairment' (BaGMIVI)* is an Erasmus+ project carried out between September 2014 and August 201, entitled to the promotion of access for individuals with visual impairment to museums. The project aims to promote strategic partnerships between museums and schools (mainstream/segregated schools for children with visual impairments) within which students are enrolled.

The main goals are the following:

a. a. to enable the museum members become aware and update their knowledge regarding the barriers that impede the access of visitors with visual impairments to museums,

2. b. to create learning, cultural and social opportunities for individuals with visual impairments,

3. c. to promote the collaboration between museums, schools and associations of individuals with visual impairments,

4. d. to underline the best practices and guidelines for the development of an accessible and inclusive museum for visitors with visual impairment.

The project is realized through the cooperation of twelve formal and four 'silent' European partners. These partners are universities, NGOs working for individuals with visual impairments, museums and schools.
By the end of the project the consortium aims at achieving the following:

1. Completion of a needs assessment study regarding the level of access and inclusion of individuals with visual impairments to museums.
2. Development of a joint syllabus for the training of museum staff from the participating museum, which may be used in the future by other museums.
3. Construction of the BaGMIVI portal through which project results may be disseminated,
4. Organization of training courses for museum staff of partners, with the aid of which differentiated and accessible museum activities may be planned.
5. Production of differentiated and accessible material of all participating museums and arrangement of corresponding museum educational programs adapted for individuals with visual impairments.
6. Preparation of a guide with the best practices regarding ways of differentiated museum content, which may serve museums in the future as a useful professional resource.

The presentation gives an overview and a summary of the process and the results of the BaGMIVI project, and describes:

- The framework of this international, multicultural partnership,
- The planned common activities,
- Key steps of the project leading to the results,

The program developed in Hungary by the partners: Eötvös Loránd University Faculty of Special Education, King Saint Stephen Museum, Székesfehérvár & School for the Blind, Budapest.

Project partners fully believe that museums are an outstanding source of knowledge and experience, and a unique educational opportunity which low-vision or blind people should be able to enjoy on equal terms to their sighted counterparts.

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Supporting individuals with disabilities for visiting museums in hungary

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Key words: need assessment survey; good practices in accessible museum visit; partnership in art education

The presentation covers some of the results of the BaGMIVI project. First, a brief review of related literature, prepared in collaboration by international project partners is presented, with research data and theoretical perspectives regarding museums and people with visual impairments. This research was conducted at local and international level through reports, books and journals. In Hungary legislation supports individuals with disabilities in visiting Museums. Several museums have opened their gates since the 1990s in order to provide people with disabilities educational and artistic opportunities, and have realized unique and accessible exhibitions. Museum educators have been leading professionals in this movement.

The second part of the presentation gives account on the process of conducting interviews with individuals with visual impairments and teachers of students with visual impairments. The purpose of this phase was to explore their experiences and perspectives regarding the level of accessibility and inclusion of students with visual impairments by museums. Last, a questionnaire was developed, which aimed at exploring museum staff members' needs and experiences regarding visitors with visual impairments. The participants were in total 55 persons with different specialties in the museums such as museum educators, other scientific staff and security guards. Some outcomes of the survey will be introduced in the presentation. Respondents included 50 special education teachers, 71 individuals with visual impairments and 55 museum staff from four countries.

Suggestions of special education teachers for the improvement of access to museums for school children with visual impairments		
Accessibility provisions/ facilitations	**Museum staff's training/ attitudes**	**Educational programs Adjusted/ designed educational programs for children with visual impairments**
Tactile access	Museum staff training in visual impairment issues	Variety of educational programs
Verbal descriptions	Special supportive staff	Frequency of educational activities
Information in braille	Activation for the development of accessibility	Variety of activities
Material in large print		Different senses
High contrast Accessible websites		Small groups Individual approach
Audio guides/tours/ descriptions		Individual approach
Special areas for individuals with visual impairments in museums Museum space organization		Budgetary and practical issues
Lighting systems Orientation facilitations		Communication/Information
Other infrastructure/ arrangements		
New technologies		

The results of the survey are followed by answers of individuals with visual impairment about
facilitating and hindering factors and suggestions. Museum staff training was designed following the message of some well-known authors of the field with wider definitions of the educational and social role of the museum in the 21st century. "Bridging the gap between museums and individuals with visual impairment" is an initiative which is expected to contribute to the educational and social role of museums with impact to cultural accessibility for individuals with visual impairments. Museums in the 21st century are not considered only as spaces of collection, preservation and display of objects but institutions with a wide educational and social role (Black, 2005; Hooper-Greenhill, 1999, 2007; Sandell, 2002). Over the past decades museums have redefined their relationship with their audiences (Vergo, 1989) and this relationship is reflected on the

museums' definition of the International Council of Museums (ICOM, 2007).

It is true that access for people with disabilities is a central topic of discussion in museums around the world. Also, important steps have been taken toward a wider accessibility of people with disabilities to museums such as: guidelines for an accessible environment in the framework of Universal Design. Furthermore, growing attention is paid to enhancing physical access and to a lesser extent to other types of access like sensory access (Boussaid, 2004; Sandell & Dodd, 2010:10). BaGMIVI's effort is, however, to cover these needs as well. The outcome of this co-operation and international effort is illustrated in some video results.

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A low-vision visitor's first-hand experiences in museums

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Keywords: visual impairment; museum visits; accessibility

In today's predominantly visual world the acquisition of information is dominated by visual stimuli. People with severe visual impairment thus regularly experience limitations and find themselves hindered in comparison with sighted individuals in different communicational or learning situations. Historicaly-ly museums are scenarios of displaying artefacts to the public 'eye'. Museums as "institutions in the service of society and its development" (http://icom.museum/the-vision/museum-definition) are not considered any more just as spaces, which collect, preserve and exhibit objects but as audience-centred spaces with a wide educational and social role (Hooper-Greenhill, 2007). In this framework, the access of people with disabilities to museums has become a major issue of interest for museums.

Although a growing number of museums have realised that visitors enjoy exhibitions more when other senses than only sight can simultaneously be used, visitors with low vision still have limited access to museum exhibitions. The BaGMIVI (Bridging the Gap between Museums and Individuals with Visual Impairment) project aims at calling multidisciplinary professional attention to the importance of providing access to people with visual impairments to museums, which offer a unique educational and learning opportunity and, at the same time, may serve as a valuable and informative leisure activity. The presenter (legally blind herself) gives first-hand information on difficulties of acquiring direct experience in museums. Technical issues, such as infrastructural and info-communicational accessibility and the need for tactile learning are highlighted, and presenter's

impressions on the consumption of artistic beauty being visually impaired are detailed.

In BaGMIVI, the cooperation of sighted and non-sighted professionals was a core value, and the training of museum personnel for hosting guests with visual impairment was built on their close cooperation. The presentation introduces the co-training method applied by sighted and non-sighted BaGMIVI experts in the process of preparing museum personnel for hosting visitors with visual impairments. BaGMIVI experts strongly believe that no successful campaign for accessibility and inclusion can be realised without the meaningful involvement of experts with disabilities, and that individuals with visual impairment may only experience and take advantage of their full personal potential if they are provided equal access to all areas of life. Nowadays education and labour are fields which get primary attention in disability issues, while individuals with disabilities express growing demand for barrier-free access to leisure and culture, where they can take roles both as consumers and service-providers and experts. BaGMIVI is an exemplary project in which presenter could experience the beauty of consuming accessible art, while being a member of the project team.

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5.

CHILD AND YOUTH CULTURE

LECTURE

Miser/Abling Images – A case to study

FLAMICH, MARIA
Primary School for the Blind

RITA HOFFMANN
artist and educator

Key words: music, disability, attitude

There are hundreds of ways we, persons with various disabilities express, moreover emphasize, how very much we wish to be considered equal and responsible citizens of the society we live in. One of the ways people with disabilities often choose to achieve that goal is arts, however, the performances are usually received with exaggerated reactions. The case we aim to present here is a shocking example, which we believe, it is worth discussing.

THE CASE

Jaume Cabré, the contemporary Catalan writer published a semi-fiction short story, titled Gottfried Heinrich's Dream. It is of Johann Sebastian Bach's attempts to understand his, perhaps autistic, son Gottfried Heinrich who could communicate only in music.

Together with our blind friends, we put the story on stage dreaming the performance to symbolize human dignity. Therefore, the performers read their parts in braille and large print according to their needs, and, to emphasize that there are numerous ways to produce values, the performance was interpreted in Hungarian sign language.

To make the performance even more unique, we coloured it with several masterpieces of Johann Sebastian Bach and jazz improvisations on Gottfried Heinrich theme included in the short story. All the pieces were performed by professional blind musicians.

At our request, some professors and students from the University of Theatre and Film Arts recorded the performance as we intended to enter the film for the 40th Superfest International Disability Film Festival in San Francisco. They offered their contribution free of charge similarly to all the performers. The production we receive was a shocking and humiliating example how miser/abling images can be if film makers are "prisoned" in culturally inherited stereotypes and prejudices.

We have several questions to ask. In order to understand the connection between charity and dignity. For example, does voluntary work mean low quality and carelessness? What did students learn from that attitude towards disabled people? Was itt he right decision to enter the film for the Festival despite its poor quality? We strongly believe, cultural understanding of disability will promote a positive paradigm shift towards accepting and respecting diversity. As to achieve our aim, or to help Gottfried Heinrich's Dream come true, we offer our case to study and discuss.

5.

CHILD AND YOUTH CULTURE

POSTER

Access for museum education for those with visual impairment

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Keywords: education for individuals with visual impairments; museum visits

The poster introduces "BaGMIVI: Bridging the Gap between Museums and Individuals with Visual Impairments" Erasmus + project of the European Commission.

BACKGROUND

1. The rights of people with disabilities – Social model of disability
2. The educational and social role of museums in the twenty-first century
3. Issues of accessibility, access for all to culture
4. The relationship between museums and individuals with visual impairments

AIM OF THE POSTER

The poster introduces the BaGMIVI project and the role of ELTE University Bárczi Gusztáv Faculty of Special Needs Education in the project, together with the contribution of the different partners in this process. The poster focuses mainly on the various Hungarian outcomes of the project. Introducing the partners in the overall BaGMIVI project: the co-ordinating institution, the University of Thessali, Dr. Vassilios Argyropoulos and Nicholas and Dolly Goulandris Foundation Museum of Cycladic Art. The Bulgarian partner university: Sofia University "St. Kliment Ohridsky" Prof. Mira Tzvetkova-Arsova and Rakursi Art Gallery. Babes-Bolyai University in Cluj –Napoca and Transylvanian Museum of Ethnography, ELTE and Szent Istvan Kiraly Museum.

The process of the project in Hungary: the cooperation of the three parties ELTE University Bárczi Gusztáv Faculty of Special Needs Education (literature review, survey, facilitating cooperation among partners etc.) - Szent István Király Museum, Székesfehérvár (arranging accessible exhibitions within two exhibition areas of the museum: Toy museum for younger children and the sculpture exhibition for older students and vocational school students) – Primary and Vocational School for the Blind, Budapest (providing study visits and introduction to the children's special needs, continuously supporting the innovation in the museum etc).

Results include a literature review: Some of the most relevant theoretical results are briefly introduced, such as the most important elements of the literature review concerning museum education, general and specific changes in the role of museums, issues of accessibility and museum staff training in all partner countries. Survey: focus on needs analysis and mapping barriers. Interviews: three groups of interviewees - teachers with and without experience in visits to museums on an educational purpose, students with visual impairments who had experience visiting museums and the staff in the museums. Different steps of the process, such as preparatory discussions, museum staff training, the installation of accessible exhibitions and visually impaired students taking part in accessible museum activities, are illustrated with photos.

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This project as supported by an ERASMUS+ grant of the European Commission, the EU programme for education, training, youth and sport.

We also express our gratitude to all international project partners and other parties who contributed to the successful realisation of the BaGMIVI project.