C·E·P·S *Journal*

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Revija Centra za študij edukacijskih strategij

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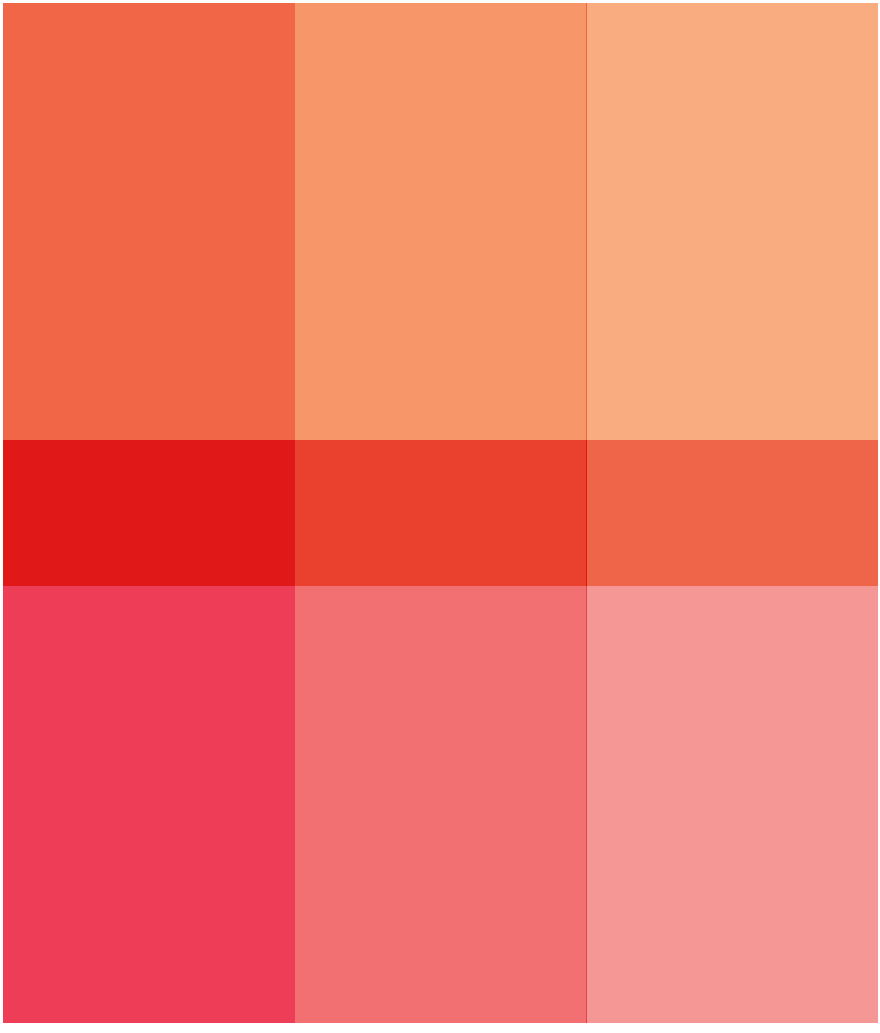

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The CEPS Journal is an open-access, peer-reviewed journal devoted to publishing research papers in different fields of education, including scientific.

Aims & Scope

The CEPS Journal is an international peer-reviewed journal with an international board. It publishes original empirical and theoretical studies from a wide variety of academic disciplines related to the field of Teacher Education and Educational Sciences; in particular, it will support comparative studies in the field. Regional context is stressed but the journal remains open to researchers and contributors across all European countries and worldwide. There are four issues per year, two in English and two in Slovenian (with English abstracts). Issues are focused on specific areas but there is also space for non-focused articles and book reviews.

About the Publisher

The University of Ljubljana is one of the largest universities in the region (see www.uni-lj.si) and its Faculty of Education (see www.pef.uni-lj.si), established in 1947, has the leading role in teacher education and education sciences in Slovenia. It is well positioned in regional and European cooperation programmes in teaching and research. A publishing unit oversees the dissemination of research results and informs the interested public about new trends in the broad area of teacher education and education sciences; to date, numerous monographs and publications have been published, not just in Slovenian but also in English.

In 2001, the Centre for Educational Policy Studies (CEPS; see http://ceps.pef.uni-lj.si) was established within the Faculty of Education to build upon experience acquired in the broad reform of the national educational system during the period of social transition in the 1990s, to upgrade expertise and to strengthen international cooperation. CEPS has established a number of fruitful contacts, both in the region – particularly with similar institutions in the countries of the Western Balkans – and with interested partners in EU member states and worldwide.

Revija Centra za študij edukacijskih strategij je mednarodno recenzirana revija, z mednarodnim uredniškim odborom in s prostim dostopom. Namenjena je objavljanju člankov s področja izobraževanja učiteljev in edukacijskih ved.

Cilji in namen

Revija je namenjena obravnavanju naslednjih področij: poučevanje, učenje, vzgoja in izobraževanje, socialna pedagogika, specialna in rehabilitacijska pedagogika, predšolska pedagogika, edukacijske politike, supervizija, poučevanje slovenskega jezika in književnosti, poučevanje matematike, računalništva, naravoslovja in tehnike, poučevanje družboslovja in humanistike, poučevanje na področju umetnosti, visokošolsko izobraževanje in izobraževanje odraslih. Poseben poudarek bo namenjen izobraževanju učiteljev in spodbujanju njihovega profesionalnega razvoja.

V reviji so objavljeni znanstveni prispevki, in sicer teoretični prispevki in prispevki, v katerih so predstavljeni rezultati kvantitavnih in kvalitativnih empiričnih raziskav. Še posebej poudarjen je pomen komparativnih raziskav.

Revija izide štirikrat letno. Dve številki sta v angleškem jeziku, dve v slovenskem. Prispevki v slovenskem jeziku imajo angleški povzetek. Številke so tematsko opredeljene, v njih pa je prostor tudi za netematske prispevke in predstavitve ter recenzije novih publikacij.

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Physical Space and the Process of Education

Physical space plays an important role in our everyday life. It determines us, and at the same time we define it. How these exchanges happen in practice, and why are these transitions are so interesting and useful, are basic questions for researchers and designers. We live, work and learn in premises of the past; we can not be born, teach or work in a place that does not yet exist. Space and time are related and specifically determine us. How the best place for teaching and learning looks, and how it must be designed in order to make these activities more effective and enjoyable, are very interesting questions that require future research. This is why the main purpose of this special issue of CEPS Journal is discussion of the significance of physical space in the educational process. Content areas that can be linked to questions of space are highly significant and at the same time very heterogeneous, as they include concepts of school space from historical, sociological, philosophical, pedagogical, psychological and other viewpoints. We should not forget the influence of physical space on the didactic aspects of the educational process, stressing the dichotomy between virtual and real space in our everyday teaching and learning practice. Furthermore, school is a public physical space that serves the local community, and its formal characteristics express the community's engagement in sustainable development as a positive legacy for future generations.

The main characteristic of the present issue is its distinct interdisciplinary focus. Interdisciplinary work requires openness and dialogue regarding concept definitions, and if some concepts are used interchangeably over time redundant concepts lose territory. One could argue that the concept of space is vague, and encourage the use of more precise words like »dwelling«, »landscape«, »city«, or »neighbourhood«. However, there seems to be a need for a common term for the physical environment in relation to the social, psychological and cultural meanings attached to it. It might be more difficult to see common features in research on different kinds of environments if an umbrella term has not been identified. »Space« is a term that is difficult to replace (Hauge, 2007).

A notion of space turns up in every corner of our consciousness, in language, dance, sports, psychology, sociology, economics - wherever movement is possible - and so is easily applicable on a flat surface. Space as experience has to derive from an ability to imagine a dimension that projects above basic

reality, an exposure to a reality greater than we are able to conceptualise. The sense of space is a mental construct, a projection of the outside world as we experience it according to the equipment at our disposal: an idea, as H. Hertzberger (2000) says.

Awareness of physical space is thus not a concrete inner experience but a learnt set of activities that we carry out. These activities help us to compare ourselves with the surrounding environment. Our senses and memory play key roles in making spatial comparisons. Identity develops as children learn to differentiate themselves from the people around them, and, in the same way, place-identity develops as a child learns to see herself or himself as distinct from, but related to, the physical environment. Among the first identity determinants are those rooted in the child's experience with toys, clothes and rooms. The home is the environment of primary importance, followed by the neighbourhood and the school. Here, social and environmental skills and relationships are learned, and the »lenses« are formed through which the child will later recognise, evaluate and create places.

A place, a defined portion of physical space, can also be defined as a social entity providing identity. However, the converse is also true: places are also influenced by people's identities. People personalise their homes and workplaces with decorations, so that their houses and gardens reflect and communicate who they are (Korpela, 1989). The physical space of school is also a personalised space that reflects the personality of the teachers, authorities and children that live and work there on an everyday basis.

Environmental images can be analysed in terms of identity, structure and meaning. Efficient images demand distinguishing features. This is called identity. Such images suggest a spatial relationship to the viewer and other objects; they contain practical or emotional significance for the viewer. It is necessary to take into account the physical quality of the elements, which must be significant enough to enable the identification of spatial structure and the functioning of the imagination, or »readability«, »evidence«. As regards the development of the image viewer and the viewed image, there are two poles on which to build: material changes in the environment and leading the viewer to new incentives that may change old images. Places and objects define space and give space »personality«. Space becomes a place when it gets precise definition and meaning (Tuan, 2003). It is also argued that the individual's experiences of spaces are related to memories from childhood, which provide a framework of references that play an important role in the formation of adult identity. The role of school physical space memory is definitely crucial.

Five of the articles in the present interdisciplinary issue of CEPS Journal

discuss different aspects of physical space and the educational process.

In the article *Adapting and Designing Spaces: Children and their Schools,* Andrea Kenkmann affirms that in schools children experience their environment on three different levels: firstly, they constantly make spatial decisions by positioning themselves in relation to others and organising their immediate environment; secondly, they contribute to shaping the classroom space; and, thirdly, they are confronted with the designed school as a whole. Children's participation in the school design process on the level of the classroom, where a genuine shared organisation can take place on an everyday use basis, is laudable, as it helps children identify and appropriate space.

In *School Buildings for the 21st Century - Some Features of New School Buildings in Iceland* by Anna Kristin Sigurdardottir and Torfi Hjartarson there is an attempt to identify features of change in the design of new school buildings in Iceland at the primary and lower secondary level and an analysis of how these changes affect teachers' work. The environmental and architectonic features that characterise recently designed school buildings are examined in light of challenges involving architecture, educational ideology, school policy and digital technology. The article presents a research project that included all of the teachers in twenty new schools and was carried out in order to determine whether teachers' work in new learning environments differs from teachers' work in more traditional classroom settings regarding their general approach to teaching and learning. The results indicate a clear shift in the design of educational buildings. Flexibility, flow, openness, social dynamics and teamwork seem to guide recent school design. Clusters of classrooms or open spaces, transparent or movable boundaries, as well as public spaces allowing for manifold interactions in flexible groups, seem to be replacing traditional classrooms along confining corridors. Teachers working in open classroom environments collaborate more often and their pupils also seem to enjoy more variation regarding group division and workspace arrangements.

In *Off to School: A Comparative Study of Schools in the U.S.,* Eftyhia Theodoropoulos compares the physical structure of two schools with differing socioeconomic backgrounds: one is a private day school servicing the children of some of the most affluent families in one of the biggest urban cities in the southwest, while the other is a technical or vocational high school with the majority of the students living in »economically disadvantaged« homes. This comparative research was done through the use of traditional qualitative methods in addition to the use of photography. The juxtaposition of the photographs of the built environment of the two schools creates a concrete visual manifestation of the differences in the daily experience of the students who attend the

schools. The visible differences led the author to significant research questions about the experiences of the students in the two locations. The photographs give the viewer the impression that the educational experiences of the students attending the vocational school are detrimental to the students' development of autonomy and a sense of identity and self, while it seems that the private day school provides an environment much more conducive to the fostering and development of both autonomy and a sense of identity and self. The study makes a concrete connection between the disparities in the socioeconomic background of the students and the implications that these differences might have on future mobility within the existing hierarchical social structure. In the educational process, we also deal with physical space through content within subjects, as well as teaching and learning methods and strategies. The two following articles present examples from the field of visual art education.

In *Hypothetical Art and Art Education: The Educational Role of the Method of Hypothetical Artwork Modelling,* Jurij Selan reflects on how a hypothetical artwork model can be usefully employed when one wishes to encourage a student to become fictionally involved in the process of artwork creation, thus giving him or her more personal experience of problems that accompany the creating process of a real artwork. A hypothetical artwork is an artwork that exists only as a fictional creation of an art theorist. The explicatory powers of such hypothetical artworks are mainly used by an art theorist to reflect on an art theoretical issue under consideration. Although this kind of argumentation can be deceiving, because it gives a statement of real art on the basis of fiction, it has some important explicatory abilities that can also be put to good use in the art education process. In this case, the construction of a hypothetical artwork is handled as the construction of a theoretical model. When such hypothetical experience is gained, the student can more efficiently learn about the art issue under consideration. In the paper, the author demonstrates how the explicatory powers of the method of hypothetical artwork modelling can be applied to educational practice on an issue taken from colour theory.

Spatial (architectural) design is one of five fields introduced to pupils as part of art education. In planning architectural design tasks one should take into consideration the particularities of the architectural design process and enable pupils to experience space and relationships within it through their own movement. Furthermore, pupils should have an opportunity to play the roles of critical users as well as co-creators or spatial planners. In this respect, a field trip plays a vital role, as it allows pupils to experience architectural space through their own movement, their senses and in a real environment. The architectural experience that these pupils gain differs from their everyday experience of

moving through space, as the former is based on education and training and helps pupils develop architecture appreciation. These ideas are widely developed in the article *The Field Trip as Part of Spatial (Architectural) Design Art Classes* by Janja Batič.

How to develop a teaching-learning process sensitive to the differences and commonalities of different cultures living in a space is today a significant question in the field of formal education. This is the main issue in one further contribution in the non-focused part of the journal. The paper *Education as a Factor of Intercultural Communication* by Grozdanka Gojkov considers alternative constructivism as a possible theoretical starting point regarding intercultural communication within education. The introductory part of the paper deals with Kelly's personal construct theory permeating the arguments in favour of the theoretical research thesis referring to the issue of the extent to which the pluralism of the European culture space interferes with national culture through education. The paper goes on to consider the way pedagogy has been searching for more comprehensive self-observation, self-reflection and self-determination on its way to self-change in order to ensure the freedom of personal action according to contemporary philosophical discussions. The importance of education as a factor of intercultural communication is supported in the article by the outcomes of explorative empirical research, which is an element binding all of the reflections in the text. Finally, key competences for intercultural communication are stated in the paper.

In the third part of the journal, there is a review of the monograph *European dimensions of teacher education – similarities and differences* (2011) (Valenčič Zuljan, M. and Vogrinc, J. (Eds.). Ljubljana: The National Education Institute and Faculty of Education, University of Ljubljana, ISBN 978-961-253-058-7).

Beatriz Tomšič Čerkez and Domen Zupančič

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Adapting and Designing Spaces: Children and their Schools

Andrea Kenkmann [1]

In schools, children experience their environment on three different levels: firstly, they constantly make spatial decisions by positioning themselves in relation to others and organising their immediate environment; secondly, they can potentially contribute to shaping the classroom spaces; and, thirdly, they are confronted with the designed school as a whole. It is argued here that our experiences of spaces are related to our memories, which provide us with a framework of references that allows us to 'read' and construct spaces.

Whereas on the lowest level of spatial involvement children are natural decision makers, the higher levels require access to, and an understanding of, shared practices and discourses. Although existing data on children's perceptions of their schools suggest that children's participation in the school design process is laudable for all sorts of reasons, such participation means overcoming considerable barriers for comparatively little gain in terms of the design quality. It is the level of the classroom where a more genuine shared organisation and (re)creation of space can take place on an everyday basis.

Keywords: Children, Participation, School design, Space

Introduction

There is general consensus amongst researchers these days that the physical school environment can have an impact on children's learning and well-being (e.g., Burke & Grosvenor, 2003; Clark, 2010; Clark & Moss, 2005; Dudek, 2000; Ghaziani, 2010; Lüke, 2007; Sorrell & Sorrell, 2005). As a result, scholars like Ghaziani (2010) argue that there is a need for further research into children's perceptions of their schools so that their views can shape the design process. Although data on children's perceptions of their environment

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is extremely insightful and valuable in its own right, it is argued here that there is not necessarily a need to use data on children's views to rethink the design process in radical ways; instead, data can be used to develop and foster ways of encouraging children's continuous engagement with and adaptation of their spatial environment.

There are two lines of thought in support of the argument for such continuous adaptation: a) that we need to understand schools in terms of lived changing and changeable spaces rather than neutral buildings that merely contain the school community, and b) genuine participation is most effective in subtle everyday decision making rather than through more formal mechanisms. As Fielding and Moss (2011) argue, there are two rationales of children's participation: on the one hand, the neo-liberalist focus on consumer choices and, on the other hand, the notion of participative democracy. Although children's involvement in school design has a wide range of benefits (Parnell et al., 2008; Sorrell & Sorrell, 2005), if it is not supported by everyday shared decision making in relation to space in the classroom there is a risk of it being reduced to mere tokenism.

In the first part of this paper, I will use the philosophical literature on space to indicate how some of the debates around school design are problematic, and in the following section I will analyse some of the existing data on children's views of their schools (Burke & Grosvenor, 2003; Ghaziani, 2010) in the light of this. In the final section, I tentatively explore how more subtle ways of engaging and adapting spaces might be better placed to meet children's needs, as well as providing more genuinely democratic processes.

Schools as lived spaces

When we think about space and buildings we often reduce them to neutral objects at certain locations. We classify them by measuring distances and looking at coordinates on a map. There can be times when this is useful, but such an analysis of space hides some of its fundamental characteristics.

It first of all hides the fact that we experience space in individual ways. 100m is considered to be an exact spatial measurement, yet although the measurements might be the same for the first and the last hundred metres of a marathon, they are experienced differently. It is unlikely that they are seen as exactly the 'same distance' by those who run them. And what might be a small room for one person could be a big one for the next. It depends on what we measure it against. Our spatial experiences of the past shape our spatial experiences of the present.

As the philosopher Heidegger (1962) argues, we are always already thrown into the world, by which he means that there is never a point zero from which we start exploring the world. We are always spatially located, thus when we enter a school we come to it with an abundance of spatial memories. Bachelard (1969, p. 9f) argues that it is space rather than time that fixes our memories. A similar connection between space and memory is made by Malpass (1999), who argues that memories have a nested structure and that it is a complex structured set of memories that allow us to recall individual events. Space is thus an inseparable part of our memories, and emotional as well as aesthetic and moral experiences are inevitably linked to it.

The manifold spatial metaphors in our language have standardised some of the common spatial associations and are the result of shared experiences. We say we are 'close' to somebody, because most of us like being physically close to people we like and care about. However, as well as these standardised spatial associations often manifested in language, there are also many very individual associations. I suspect most of us have experienced spaces as good or bad because certain memories are linked to them; for example, I avoid the space where I had an accident, even though the layout and structure of the space has been changed since.

Thus, on the one hand, spaces become enshrined with past experiences, while, on the other hand, these experiences are vital for us in order to 'read' spaces, as the past spatial experiences provide a 'spatial reference network', which enables us to understand space, as well as produce spatial meanings. The increasing creation and experience of virtual spaces also emphasises this link between memory and the reading and writing of spaces.

As Lefebvre (1991) points out, space is socially constructed. However, this does not merely suggest that the school building is a product of social interaction; rather, the space within and around the building is constantly (re) produced. There are, for example, forbidden spaces, gendered spaces, divisions, boundaries and shared spaces, which are not constructed by brick walls but by how people make use of the spaces every day. Wherever we are we constantly organise and structure the space around us. Thus, as Hillier and Hanson (1984) point out, society, or the school community in our case, does not merely exist in space but is spatially organised and reorganises the space continuously.

By seeing space as constructed, it also becomes contestable (McGregor, 2004), and questions of power can no longer be separated from discussions about space. However, whereas there is a little doubt about power games being part of the construction of schools, they often remain hidden as part of the subtler organisations of space within schools and playgrounds. The teacher's

structuring of the classroom or the children's divisions and negotiations of space on the playground and in class are just some examples of this link between space and power on a micro level. A Foucauldian notion of power is employed here, where power is seen as omnipresent and shaping any social relations in meaningful ways. The flow of power is never entirely one-sided for Foucault a resistance is always possible.

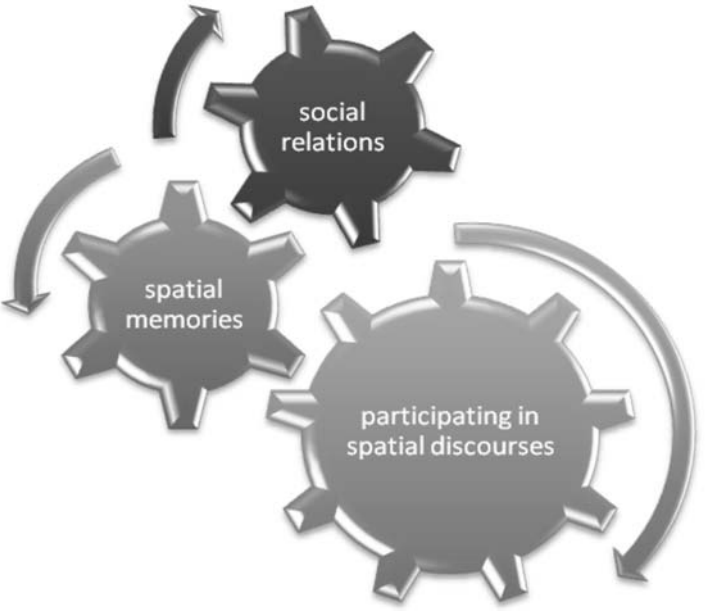

Figure 1: Production and experience of lived spaces

Figure 1 tries to summarise the constant experience and production of lived spaces. The mechanism can be adapted for different levels of spatial experiences. On an individual level, my personal relations to others affect how I position myself in relation to them; for example, whether I keep my distance or prefer to tower over them. In order to do this, however, 'keeping one's distance' or 'towering over someone' must already be meaningful concepts to me. In return, my positioning will have an impact on my social relations and provide new memories for future use.

On a slightly larger level, such as classroom relations, we would want to complement spatial memories with the notion of shared spatial practices. There are certain classroom behaviours that are regarded as being the norm, and a statement can be made in a discourse by disrupting or conforming to given norms. Again, this would in return shape practices and relations. On a

macro level, where buildings are statements in a discourse, as Hirst (2005) argues, shared memories are the history of school architecture, ideas and theories about education, norms about institutional design and past political discourses. These shape present negotiations about school design, which then affect relations between stakeholders and vice versa.

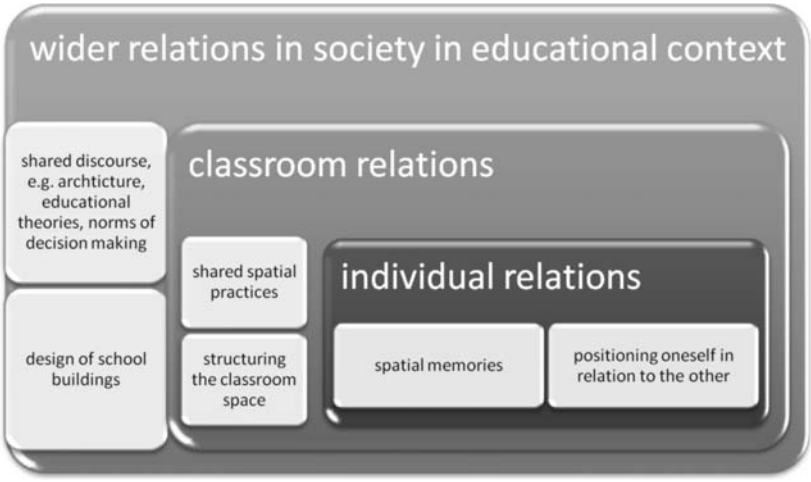

Figure 2: Different levels of spatial discourses

Figure 2 denotes the embedded process of spatial production and experience, but in a flawed way, as we would really need the interlinking cogs on a three-dimensional level. All three aspects can be seen as embedded in wider structures, e.g., individual relations within the school are part of the wider classroom relation, which are part of the wider education discourse involving various stakeholders of schools. School design has an impact on possibilities of structuring classroom space and the individual's positioning within that space. The following quote by the philosopher Edward Casey points to some of the vertical as well as horizontal interconnections in our diagram.

> The power a place such as a mere room possesses determines not only where I am in the limited sense of cartographic location but how I am together with others (i.e. how I commingle and communicate with them) and even who we shall become together. (Casey, 1993, p. 24)

The possibilities of a room (which in itself is structured and created by social relations) determines how I position myself in relation to an other person; for example, tables within a room often create dividers, or one might have

the option to sit down or stand up, some spaces might be designated teacher's spaces (see Kenkmann (2011) for a discussion of some spatial classroom characteristics). Thus I am restricted in placing myself within the space and in relation to others. This then shapes relations, but also the shared identity, as Casey points out.

The notion of identity affects and is affected by the whole process, and is present on all levels. The school's identity is shaped by the building, by the shared practices facilitated or hindered by the building and by the relations of stakeholders involved in spatial questions. What figure 1 is trying to indicate is that there is no starting point for the process; rather, we have a process of constant (re)production. What we end up with is a very complex machinery where one wheel sets others in motion. However, the nested structure of the model means that we need a lot of little wheels moving at lower levels in order to set higher wheels in motion, whereas wheels at the top level have an immediate impact on lower levels.

Children naturally make decisions at the lowest level; they will sit close to their friends and keep their distance from others; they will shape their immediate environment with the resources available to them. Although this might only rarely be consciously discussed, meaningful discourses emerge. On the classroom level, whether children are in a good position to renegotiate and change spaces or whether there is merely a rigid reproduction of space will depend very much on what shared practices exist. However, we would assume that children have a knowledge of shared classroom practices, albeit to a varying degree, and thus 'speak the spatial language' of the classroom; for example, they will know that sitting down might be the norm, thus throwing oneself onto the floor becomes a significant statement in the spatial discourse, which then affects classroom relations.

On the highest level, however, one needs to have access to the shared discourse of building design, educational theories, costs, etc., in order to make an effective statement in the discourse of school design. As we will see from some of the research undertaken into children's views on school design, this is often not the case, and children's potential contributions remain unheard by other stakeholders. However, there is a difference between the design of a brand new school and the adaption or extension of existing schools, as in the latter case children and other users have access to the shared experiences of the building, thus allowing them to make a more prominent statement in the design discourse. However, the discussion here focuses on the design of new schools rather than smaller redesign projects.

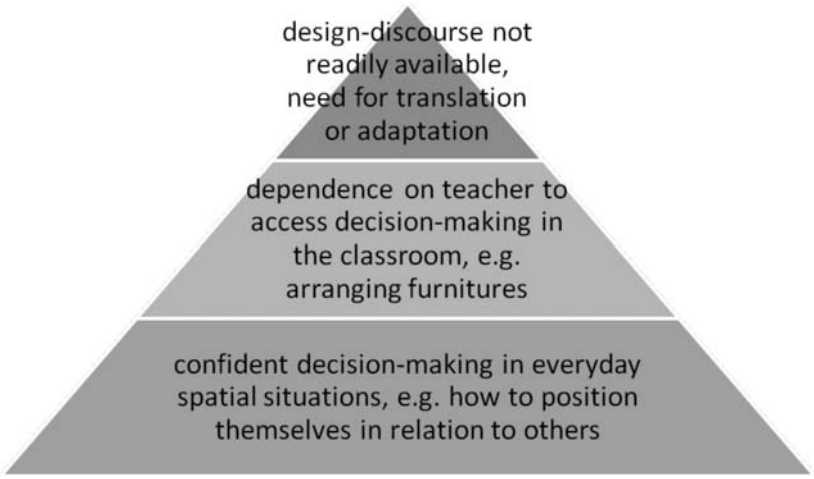

Figure 3: Children as decision makers

One could be tempted to argue that if children do not speak, or only partially speak, the 'language' necessary to participate in a school building discourse, the language itself needs to be adapted. However, Wittgenstein (1984) sees language as inseparable from practices; language is what we use rather than a definable separate object. This means that the language of building design would naturally evolve as part of the relations between stakeholders. So what we have at present is a vicious circle, where due to relationships and experiences of exclusion children cannot fully participate in design discourses, which in return means that they are unlikely to become more confident participants in the discourse.

Simply asking children what they like about their schools does not seriously disrupt the vicious circle, but remains on the level of what Hart (1992) would call tokenism rather than genuine participation. However, there have in recent years also been attempts to establish more collaborative design partnerships and allow children more genuine access to the school design discourse (Parnell, 2008; Sorrell & Sorrell, 2005), although the primary aim here is often to enable children to gain a variety of transferable skills rather than shaping the school space.

Children's experiences of school spaces

One only has to look at some of the available data sets on children's perceptions and preferences in relation to their school environment (e.g., Burke & Grosvenor, 2003; Ghaziani, 2010) to realise there is no such thing as the 'ideal'

school. The comments regarding what children like in aesthetic terms vary considerably. Whereas one child wants the classroom painted in a 'calming sky blue' (Burke & Grosvenor, 2003, p. 25) others want 'nice colours like red' (p. 24) or 'the outside painted gold' (p. 25), to name but a few of the colour examples. Different colours for ceilings and carpets are also mentioned. Both data sets clearly indicate that colours are important to children, even though there is no clear preference for one particular colour. A child in the Ghaziani data set suggests that changing colours are desirable; the suggestion here is to make artificial lights coloured, allowing them to change the colours of blinds and carpets (Ghaziani, 2010, p. 10). Contemporary architects have already picked up on the importance of colours in school design (see, for example, Reggio Emilia, database of contemporary school design at www.imagineschooldesign.org.uk).

There is some indication that children's preferences of colours are related to previous experience. One child would like a pink carpet because the child experienced and liked such a carpet in a previous classroom (Ghaziani, 2010, p. 11).

The link between spatial memories and attitudes towards spaces becomes more visible in other areas. For example, in the Ghaziani study, children liked or disliked the head teacher's office depending on whether they were rewarded or told off in this space (Ghaziani, 2010, p. 17). Schwarz and Steiner-Löffler (1998) noticed similar experiences when they asked children to take photos of positive and negative spaces in their school, and the authors argue that there is a strong association between persons and places at times.

Unfortunately, no data of the actual past experiences were collected in any of the studies. Such data would allow us to draw clearer links between memories related to certain spaces and present attitudes and behaviour. However, similar comments were made by other children: one child wants a triangular classroom 'so that no one could sulk in the back row', while others want a circular classroom so that 'the teachers can't tell you to stand in the corner' or 'there won't be a naughty corner' (Burke & Grosvenor, 2003, p. 23). It would be very interesting to know the exact experiences that prompted the children to make such comments, as it is not the spaces themselves that carry certain values, but rather the experiences associated with them. The conclusion that can be drawn from statements like these is not necessarily the redesign of schools with round classrooms, but rather the children's involvement in spatial decisions within their school, as I will discuss in more depth later.

However individual the children's comments about their schools are, we can classify them into a variety of categories. As we have already seen, their aesthetic responses to spaces are highly individual, as are their emotional

associations with spaces. A considerable number of the children's comments relate to the functionality of certain features. Locking toilet doors are mentioned several times, as are the issues of enough space for wheelchair users, windows that need repairing and a lack of doors between classrooms that cause noise disturbance (Burke & Grosvenor, 2003, p. 26f). Unfortunately, neither of the data sets gives us an idea of the extent to which children disagree about these problems, if at all. We would, however, expect considerably more agreement regarding the functionality of equipment and features than about aesthetic considerations. Safety issues, such as an uneven floor mentioned by one child (Burke & Grosvenor, 2003, p. 29), also fall into this category.

We would also expect a shared element with regard to what constitutes a comfortable environment, especially as far as chairs are concerned. Even though the heights and preferences for certain materials of chairs are related to individuals, there seems to be a shared sense that 'chairs are really, really uncomfortable' (p. 29) and that the ideal school would have 'soft chairs instead of hard chairs' (p. 29) or they should 'be leather, the ones you can put your feet up on and relax instead of having a sore back all the time' (p. 145), 'egg shaped chairs' and 'soft bean bags' (p. 144) are also suggested (Burke & Grosvenor, 2003). One child also points out how unfair it is that teachers have more comfortable chairs than students. (Burke & Grosvenor, 2003, p. 144)

The final category of comments I would like to suggest is that of excitement. A lot of children want change and innovation. For some, it is changing lighting (Ghaziani, 2010, p. 10), while for others it is futuristic design, including features such as a fountain (p. 24) or a river in the playground (p. 25) (water is a metaphor for change in itself) or modern and innovative technology (Burke & Grosvenor, 2003, pp. 25-26) that makes a better school. Some children also mention large windows as a positive feature of schools, which could fit into all of the categories, but nature also continually changes with birds and clouds flying past, changing weather conditions and different seasons and thus provides a disruption from the possibly mundane classroom routines.

Table 1 summarises the different elements of children's responses to their spatial school environment. In the concluding section, I seek to bring the two discussions of participating in spatial discourses, on the one hand, and the children's responses to their schools, on the other hand, together and assess the extent to which children's participation can easily and genuinely be achieved.

Table 1: Children's responses to their school spaces and design implications

consideration in relation to space	examples	individual/ shared	design implications
aesthetics	colours, shapes, carpets	highly individual	adaptable designs
emotions	negative spaces where told off, positive spaces where rewarded	highly individual	no design implication
functionality	locking toilets, doors to keep noise down, windows repaired	shared	achievable
comfort	comfortable chairs, short distances to walk, cold water, larger playground	individual + shared	achievable, but high cost
excitement	futuristic design, changing colours, new technology	individual	changing design

Adapting and designing school spaces

As I have argued, we all make constant spatial decisions on a micro level by positioning ourselves and the things around us in meaningful ways. On the macro level of school design, children are not necessarily involved in decision making. What we need to assess is how powerful the children's comments are as part of the design process. Clients of building projects usually have a say in all aspects of the project, but, as Parnell et al. (2008) point out, in school projects there are two clients, namely the paying client and the users of the school. But who are the users of a new school? Can we create generic categories of 'children' and 'teachers'? There are two problems here, one being the fact that schools are used by generations of different children and teachers, which means that some of the concrete clients might not even be born, while the other problem is that even if we use the current school population as a client we could end up with a thousand individuals.

What is needed is a shared statement. Judging from the actual data on children's perceptions of schools, such a shared statement is most readily achieved in relation to functionality; for example, toilets that actually work and a floor without holes. But some of these issues are maintenance rather than design issues, and one would hope that architects and designers have some understanding of the functions a school building needs to fulfill.

The other area where a shared statement in the design discourse seems feasible is in relation to questions of comfort. Although there is clearly an individual element to what we find comfortable, as we would expect this to be linked to our emotional responses to our environment, there is also a shared sense of what we find uncomfortable. However, again one would assume that it takes comparatively little consultation to find out what children and teachers

prefer in terms of comfort, as considerations of cost are likely to limit available choices quite radically.

What we would need to analyse in more depth is whether schools where children have participated in the design and building discourse look fundamentally different from those where this has not occurred. Parnell et al. (2008) indicate that this might not really be the case.

> Currently, it seems that dialogue between schools and their architects/contractors is limited. What little engagement does occur in the early stages of design seems to be rarely followed up in the later stages of design and construction. (Parnell et al., 2008, p. 222)

It seems unlikely that children will be considered as equal partners in the discourse of school design in the near future, and enabling them to participate fully might actually have very little gain in terms of the quality of school buildings. The involvement of children represents a considerable challenge in terms of overcoming access barriers to design and building discourse. Thus it is not surprising that there is no user involvement in many school design projects (Tischer, 2007).

It is the level of the classroom where spatial decisions can be made much more readily; decisions about how we arrange the space of the classroom and how we shape the immediate environment of our learning. If colours are important to children, why could schools not have Miro-like canvasses (created by children) or coloured curtains or blinds that could be shared around the school and changed as those 'living' in the classroom desire? One could, for example, have a blue week followed by a green week. Tables and chairs can be changed around or, as one child suggests, 'we could bring our own cushions to school' (Burke & Grosvenor, 2003, p. 29).

Children could monitor, arrange and be involved in the maintenance of the school. They could take the initiative on how to decorate the classroom and put up displays that are important to them rather than having educational posters put up by the teacher, as displays were clearly important to the children in the Ghaziani study. Changing the spaces around us does not necessarily involve high costs; what is needed is some creativity and democratic structures in the classroom. The question of virtual spaces arises here as well; for example, students and teachers 'leave' the classroom or extend spaces through Interactive Whiteboards, computers and other technology. Who controls virtual boundaries? Who decides what spaces are made available? Democratic participatory processes could lead to a shared responsibility regarding virtual spaces.

Classroom discussions about the use of space might also challenge behaviour patterns linked to spaces, e.g., the sulking in the back row, or the head teacher telling students off in his or her office. My hope is that some of this might be happening already, even though my own experience of classrooms in secondary education suggests that spaces are primarily organised by teachers.

What is needed is a school that is changeable and adaptable, allowing those using it to organise and reorganise the space in creative ways. As the architect Hertzberger says:

> ...a thing exclusively made for one purpose, suppresses the individual because it tells him exactly how it is to be used. If the object provokes a person to determine in what way he wants to use it, it will strengthen his self identity. Merely the act of discovery elicits greater awareness. Therefore a form must be interpretable – in the sense it must be conditioned to play a changing role. (as quoted in Dudek, 2000, p. 5)

It is not so much the colour and shape that is important, but its neutrality and adaptability. As Rasmussen (2009) argues, schools should not provide gendered spaces or spaces that marginalise other users. Schools should not be designed around the control and surveillance mechanism and the convenience of the staff. What is needed are adaptable spaces that are equally accessible to all users.

When one looks at contemporary school architecture, one can find many examples of open, interpretable and adaptable spaces (for a sample of contemporary school designs see the database at www.imagineschooldesign.org.uk), but what is still lacking is the genuine involvement of children in everyday decisions in the classroom. As Harber (2010, p. 36) says, »the dominant model of schooling globally is authoritarian, with pupils having very little say in what is learned when, where and how.«

Fielding and Moss (2011) argue for 'more poetry, less prose' in their support for transformative and participatory education; and maybe what is needed is more spatial poetry. I recently had the pleasure of seeing a residential home for older people transformed into a Hollywood Oscar venue; with a large amount of creativity and joint effort only few resources were needed to succeed. Listening to each other, and perhaps a willingness to take risks, can help us not only to transform our environment but possibly also ourselves in the process. Ellworth (2005) argues that alternative places of learning allow us to learn in surprising ways, while scholars like Foran and Olson (2008) put the emphasis on outdoor education. However, some of the benefits of leaving the

classroom might also be achievable by transforming and adapting the given spaces in more creative ways.

Discussions about school design and children's participation in it are all very laudable and interesting, but if they are not supported by everyday practices, they remain fairly meaningless projects useful for marketing purposes. Children are prepared to be clients in a consumer society rather than participating members of a community. Whereas the community of stakeholders in school design is likely to be an extremely challenging environment for children, the more immediate community of the classroom provides a more accessible scope for joint decision making, and maybe the success of the latter will ultimately lead to a transformation of the former.

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Biographical note

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School Buildings for the 21st Century
Some Features of New School Buildings in Iceland

Anna Kristín Sigurðardóttir*[2] and Torfi Hjartarson[3]

The aim of this study is to identify features of change in the recent design of school buildings in Iceland, and how they might affect teaching practices. Environmental and architectonic features characterising school buildings designed and built at the beginning of the 21st century are examined in light of challenges involving architecture, educational ideology, school policy and digital technology. The sample for the study consists of 20 schools located in four municipalities. Four of the school buildings were developed and built in this century, while the other 16 were designed in the 20th century. The design of all of the buildings was explored and reviewed by a multidisciplinary team. Data was collected by observations and photography at each school site, as well as by reviewing technical documents. The relationship between school design and school practices was studied through a questionnaire survey among all teachers, in order to find out whether teachers working in new environments differ from teachers in more traditional classroom settings. The results indicate a clear shift in the design of educational buildings. Flexibility, flow, openness and teamwork seem to guide recent school design. Clusters of classrooms or open spaces, transparent or movable boundaries, as well as shared spaces allowing for manifold interactions in flexible groups seem to be replacing traditional classrooms along confining corridors. Teachers working in open classroom environments collaborate more often than their counterparts. Teaching practices are also characterised by more opportunities for pupils to choose between tasks and enjoy more variation regarding group division and workspace arrangements.

Keywords: Classroom environment, Collaborative learning, Individualised learning, Physical learning environment, School buildings, School design, Teacher collaboration, Teaching practices

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The history of public schools or school building design in Iceland is relatively short, dating back to the late dawn of the industrial age in the early 20th century (Guttormsson, 2009). As in other countries, school buildings have been influenced by social and educational needs. Design decisions, however, must have initially relied heavily on the available architects, who gradually grew in number and were educated abroad in various countries. In each individual case, consulting educationalists must have influenced decisions to some extent, reflecting different pedagogical ideas at each school site. According to Borrelbach (2009), a similar development can be seen in Germany, where school design has mostly been based on concepts agreed upon for each individual project.

The participation of many different stakeholders in the design process has only become common of late. A recent example in the Icelandic context is a policy implemented by education authorities in Reykjavik, emphasising individualised and collaborative learning (Sigurðardóttir, 2007). This is supposed to have consequences for all aspects of school, including the school building and the learning environment as a whole, as well as teaching and learning. According to the new policy, school buildings are supposed to offer flexible spaces for different assignments and group sizes, and take on the role of a community centre in their neighbourhood (Fasteignastofa Reykjavíkur & Fræðslumiðstöð Reykjavíkur, 2004). A so-called *Design Down Process* with a carefully chosen group of consulting stakeholders has been carried out in a number of cases to prepare new school buildings. The method was developed before the turn of the century by a research group based at the University of Minnesota (Copa & Pease, 1992; Jilk, 2005; Óskarsdóttir, 2001). The initiative in Reykjavik has been driven by a policy striving for individualised learning and student collaboration, and to support its implementation a measurement tool for individualised learning has been developed (Reykjavik City Department of Education, 2005). This measurement tool is now used as a frame of reference in our study, and within a more extensive research project looking at teaching and learning in Icelandic schools.

Seven emerging themes for 21st century learning environments have been defined by the OECD Programme on Educational Building and Department for Education and Skills (OECD/PEB & DfES, 2006). They were put forward by several leading architects and educationalists as follows: the challenge of designing schools in a changing world; the impact of new technology on school design; increasing access to education through school design; designing sustainable, comfortable school buildings; involving all stakeholders in school design; educational facilities as a learning tool; and assuring design quality.

Some of these themes are discussed in further detail below.

The challenge of designing schools in a changing world. Each school building is expected to serve its purpose far into an unpredictable future; the only thing known for certain is that the future will be different from the present. Therefore, the key challenge for designers is to attain flexibility (Copa & Pease, 1992; Dudek, 2000; Jilk, 2005; Nair & Fielding, 2005). This demand for flexibility applies to many different features of a building, such as spaces and environments for different group sizes and learning styles, dynamic boundaries and the ability to change facilities according to pedagogical needs and ideas. The purpose of design for the future, however, is not only to be prepared for some of the changes that might take place, but also to attempt to influence school processes, i.e., in accordance with new knowledge or ideas about learning and new requirements, such as those that come with new technologies.

The impact of new technology on school design. The introduction of information technology and new media calls for innovative solutions with regard to housing, spaces, furniture, communication, teaching and learning. Schools have responded to technical advancements in different ways. Earlier research in Icelandic schools suggests that the school library may have a key role to play when it comes to the effective use of information technology across disciplines. Many schools have tried to connect computer and library facilities, in some cases combining the use of traditional library resources and a computer lab in a unified information centre at a location of strategic importance (Macdonald, Hjartarson & Jóhannsdóttir, 2005).

Increasing access to education through school design. One important goal of school design is access for all. Architects and educational researchers alike need to identify school design elements that either encourage or hinder the integration of services and inclusive practices, in particular individualised and collaborative learning. Architectonic concepts such as detailing, overview, transparency, flow and flexibility may help to clarify some of the issues involved, as well as inclusive approaches for pupils with special needs, multicultural education, access to new media and educational resources. Community services within schools should also be considered, as well as student and staff access to the wider community.

Designing sustainable school buildings. Over the last few years, the sustainable design of buildings has gained growing attention. This is also the case in Iceland, but ideas or concepts in this field of expertise have only been realised to a limited extent. Sustainable design standards, like BREEAM (http://www.breeam.org) and LEED (http://www.usgbc.org), are used to conceptualise good learning spaces for flexible uses, applying natural daylight, natural ventilation

where possible, low energy use, low water use, good acoustics and the use of sustainable building materials.

Involving all stakeholders in school design. In order for the design of school buildings to fit our present and future needs for effective learning environments, it is considered extremely important to involve stakeholders in the design process from the very beginning (Walden, 2009; Woolner, 2010). The importance of involving students in the design process has also been pointed out. The *Design Down Process,* already mentioned above, serves as a good example. This process requires that a group of various stakeholders, such as teachers and pupils, educational researchers and administrators, representatives of the community, parents, technicians and architects, work together to define aspirations and local needs and develop a rough layout for the new building (Óskarsdóttir, 2001). Such a consultation process has also been applied when older school buildings are renovated and reconstructed. One aspect of the process has been to decide upon or identify key messages the building should send to students, staff and the wider community.

The building as a learning tool. Educational facilities and their surroundings can be a useful resource for teaching and learning in many ways. The shape of a building, lighting and facilities can serve as a subject for students in their studies. By making the building itself environmentally friendly, students can be taught to understand an environmentally friendly lifestyle. Architects might also consider opportunities to introduce interesting aspects of core subjects like maths, science and arts for teachers and students to reflect upon in different contexts. Patterns and lighting on the floor and ceiling might, for example, represent stars and galaxies, which then become a part of everyday life, and elements like doors, windows, light and shadows can be used to demonstrate colours, shapes, sizes and patterns (Nicholson, 2005; OECD & DfES, 2006).

There is currently little empirical evidence available on how school architecture affects educational practice (Gislason, 2010), and most of the relevant research is conducted from an architectural perspective. There are, nevertheless, several research results suggesting that the physical learning environment could affect child development and academic achievement in a number of ways (Higgins et al., 2005; Tanner, 2008). Most of these results, however, are somewhat limited and controversial. Relatively strong evidence supports the relationship between student learning and conditions such as the quality of air, temperature or noise, while other evidence, i.e., relating learning to colours and lighting, seems less profound. Results from a large research project lead by Walden (2009), involving school design initiatives in eleven countries throughout the world, indicate that good design can improve feelings of well-being and social

interaction, which in turn are related to higher assessment of performance.

The authors of the present study seek to contribute to the body of knowledge on school buildings and how they might affect educational practices. The aims are twofold: firstly, to identify features of change in the design of recent school buildings in Iceland, and, secondly, to detect how such features might affect teacher collaboration and teaching practice.

Methods

Research methods include guided and independent observations of school buildings, a questionnaire survey among staff, photography and document analysis. The sample consists of twenty schools selected in four municipalities, serving as a random sample for a large research project on teaching and learning in Icelandic schools at the primary and lower secondary level (Björnsdóttir & Jónsdóttir, 2010), and our study constitutes one part of this project. Four of the school buildings were designed and built in the 21st century, while the other sixteen date further back and were designed in the 20th century. The four most recent constructions, developed in the new millennium, are discussed here as examples of Icelandic school buildings of recent design. Three of them were built after an initial period in preliminary housing, while one is being built at a rural site to replace an older construction originally designed as a boarding school some five decades earlier. *Table 1* provides some profile information about the four schools.

Table 1: School profile information

	Year of establishment	New building	Age of pupils	Number of pupils	Size of building, m^2 (approx)	Size per pupil, m^2 (approx)	School district
School A	2001	2005	6–15	435	5,856	13	City suburb
School B	1965	2011	6–15	104	2,000	19	Rural area
School C	1999	2005	6–12	183	2,664	14	City suburb
School D	2005	2011	6–15	350	6,000	17	City suburb

The twenty school sites were explored and reviewed by a multidisciplinary team of researchers, including two educational researchers from the University of Iceland, two school principals and an architect. Data was collected by informed observations and photography at each location, as well as a review of technical documents, drawings and writings. Environmental and architectonic features were studied and described in detail with regard to classroom layout,

facilities for arts and crafts, public spaces and community halls, school libraries or information centres, the application of information technology, teacher workstations, facilities for outdoor teaching, ties to the outer community, and the design process preceding the construction of each school.

During the 2009–2010 academic year, an electronic questionnaire survey consisting of 244 items was carried out in four parts among staff members at all twenty schools. A total of 725 people responded to the questionnaire (a response rate of 92%), 601 of whom were members of teaching staff. The questionnaire items referred to in the present paper include teaching facilities, teacher collaboration and attitudes towards classroom environment and teaching practices.

A total of 62% of the teachers responding to the questionnaire maintained that they taught only or mostly in traditional classroom settings, while 18% claimed that they taught only or most of the time in open classroom spaces. Some comparison between the two groups is provided in the present paper.

Results indicating features of new design

Observations of the twenty school buildings reveal that the four most recent school sites differ considerably from older cases in our sample. Shools A, C and D were among the first schools in Iceland to be designed based on the *Design Down Process* (KKE Architects, 2001) and represent a clear shift in school design at a national level. The design of school B is based on a somewhat similar consultation process, resulting in clusters of small classroom spaces allowing for different openings and flow between rooms. School C combines small and large spaces in a flexible and transparent manner, while schools A and D are larger than the other two and equipped with extensive learning spaces where large groups of students are able to work in different setups, as shown with a fictitious example in *Figure 1*. The design of all four cases is described in more detail in *Tables 2* and *3*.

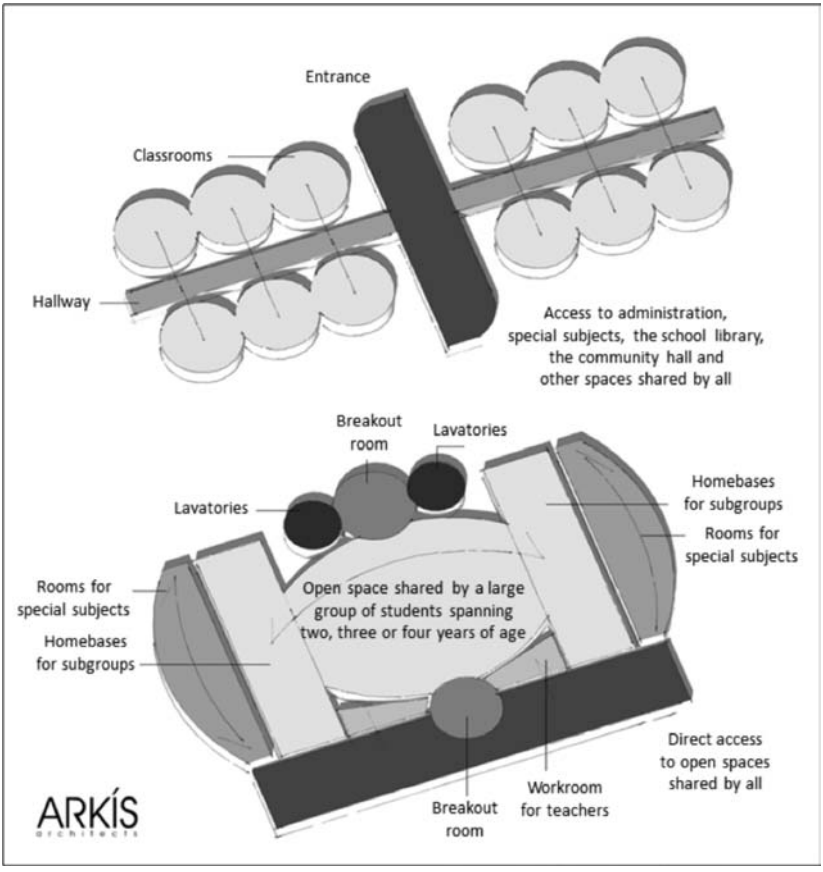

Figure 1: Conventional setup of classrooms along narrow hallways, typical for many schools in the twentieth century, as opposed to open and shared learning spaces with large groups of students and teaching staff characterising some of the most recent school designs. Illustration by ARKIS 2011.

In *Table 2* and *Table 3,* a schematic overview is laid out to describe some of the features characterising each of the four school buildings. In *Table 2,* features concerning classroom layout and grouping of pupils are described, while in *Table 3,* a short overview of community halls, school libraries, information technology and teacher workstations is provided. Some of these features are outlined in more detail below.

Table 2: Classroom layout and grouping of pupils

School A
Large open classroom spaces for groups of about 80–100 pupils of mixed ages. The classroom spaces are partly divided by closets or walls, a staff room and one breakout room. By default, pupils sit in groups. Pupils in the oldest age group have their own individual desks or workstations. Each classroom space has immediate access to a central community hall and a completely open library. Arts and crafts are integrated with other subjects, but two small classrooms are used for messy work and storage. A music room of a similar size is used for music lessons and individual instruction provided by a music school.
School B
Three classrooms for 12 to 20 pupils each are grouped together to form clusters, three clusters in all, hosting classes spanning three years of age. Pupils are expected to sit in groups. Two out of three rooms in each cluster are divided by foldable walls, and the third room can be accessed through wide doors or via alternative access through small support rooms. Three classrooms dedicated to textiles, art and woodwork respectively form a cluster, with a small support area for shared use. A music classroom can be opened up to join an open hallway or community hall.
School C
Open classrooms for groups of about 30 to 60 pupils of mixed ages. Pupils sit in groups. Classrooms are framed by interior windows with an open view and direct access to a central information centre combining a library and a computer lab. A large classroom space for arts and crafts is divided into three semi-open sections dedicated to textiles, art and woodwork respectively. The music classroom has a sliding wall that can be pushed outwards to expand the room, and has a pile of beanbags replacing tables and chairs. A spacious classroom for natural studies is often used as a breakout room for special activities or group work.
School D
Large and open classroom spaces for groups of about 90–120 pupils of mixed ages. Each classroom space has immediate access to a central community hall. Classroom spaces are complemented with a paved rooftop garden or outdoor platforms. Each space has a breakout room of a regular classroom size, moveable tent towers for small groups, as well as curtains and moveable shelves or closets allowing for different arrangements of space. Pupils sit in groups. A large workshop with rooms and booths dedicated to art and crafts is designed for integration across subjects. A music hall allowing for band rehearsals is complemented with smaller rooms for music instruction.

Clusters of classrooms and open spaces

Schools A and D represent a radical step towards age blending and the integration of class groups by providing teachers with large open spaces for groups of up to 80 to 120 students. This approach to classroom layout has been encouraged by an emphasis on individualised learning and increased flexibility for adapting curriculum matter to pupils' needs and interests. A breakout room, movable furniture, foldable walls and curtains are used to create spaces for different group arrangements and private work. Teachers and pupils in school D will also be able to make use of paved rooftop gardens or balconies from their upper floor classroom spaces and open-air platforms outside classroom spaces at ground level.

The two other schools, schools B and C, represent small schools. They offer flexibility and open spaces but their classroom spaces are not as different from traditional classrooms as might be expected, being designed for relatively

small groups. Age blending or flow between age groups is, however, made much easier than in more traditional settings, as classroom spaces tend to be semi-open or screened by glass and form clusters based on age.

School B represents a design trend, also detected to some extent in older schools, towards clusters of traditional classrooms to allow for teamwork among teachers teaching classes spanning two to four years of age. In this case, there are three clusters of small classrooms for 12 to 20 pupils per classroom; three classrooms in a row, spanning three years of age in each cluster. A foldable wall between two of the classrooms, support rooms connecting two classrooms, and double doors between classrooms allow for considerable flow and interaction between the three rooms in each cluster. A more traditional setup behind closed doors and unfolded walls is also possible.

Transparency, flexibility and flow

An attempt to make school design transparent and easily comprehensible is apparent in all four schools. Designers have striven to make their buildings inviting, apprehensible and logical in their basic structure. They have paid careful attention to age division and made it relatively easy for each age group to identify their home area within the school structure as a whole, in order to create a feeling of belonging.

Community halls tend to be semi-open or given a central position as broad hallways for multipurpose use on an everyday basis. In school B, an open hallway on the lower floor cuts the upper floor and divides the building into two parts. This hallway can be extended at the lower level by opening up an adjoining classroom assigned to music.

In school C, the emphasis on transparency is apparent, with classrooms framed by tall interior windows providing an open view into classrooms and an information centre combining a library and computer lab. Glass walls and interior windows are common in recent constructions, such as extensions that have been built at older sites in our sample of schools. It should also be noted that in some of the older schools in our sample we found small windows on or beside classroom doors, offering an »insight into the culture«, as Fram puts it (2010, p. 476).

The flexibility seen in classrooms is also evident in other parts of the four schools. The community hall, as a rule, can serve many purposes and be adjusted in size to different needs. The music room and the community hall in school B are divided by a foldable wall. The music room and community hall in school C are divided by a sliding wall that can be moved inwards or outwards to enlarge either one of the two spaces when appropriate. In schools A, C and

D, the community hall can be merged with the gym. A broad hallway lies in the centre of schools A and D and serves as entrance, canteen and community hall. In school A, the library is also located in this open hall of shared use. All of the key zones of the two schools surround this central hall and are divided from the main hall by concrete walls, glass, curtains or wide doors, in order to encourage flow and transparency. Only the preschool facilities, also included within the walls of school D, are located in a somewhat separate realm.

Table 3: Community halls, school libraries, information technology and teacher workstations

School A
A long and spacious hall under a high, curved ceiling, with all of the classroom spaces in one and two-storey constructions running along each side. The hall serves as an entrance hall, hallway and community hall. The school library is located in the middle of the hall, resembling an open air restaurant in a large square. A wall to one end can be folded open to connect the hall with a large gym. Teachers have laptops and make use of laptop trolleys for pupils. Each classroom space has a small room for its team of teachers.
School B
The building in its basic form is a two-storey building, partly under ground level, with an open hallway on the lower floor cutting the upper floor. The hallway serves as a canteen and community hall and forms an open divide between clusters of rooms on both floors. Three clusters are made up of classrooms with small adjoining support rooms, one cluster is assigned to arts and crafts and another to staff and administration. The library or information centre is located in a confined space next to the spaces for staff and administration. A conventional computer lab resides in a separate room in another part of the building.
School C
A hallway resembling a small street or pathway runs through the school. To one side, the hallway opens up behind tall interior windows to a square-like area with an open library and an open computer lab. Classrooms partly screened off by glass surround this information centre on three sides. A community hall is divided from the hallway by a foldable wall. Behind the hall is a gym, and the hall can be opened up in one corner to connect the two rooms. A wall behind a built-in stage can be moved to deepen the stage or to enlarge a music room on the other side. Teachers have laptops and access to a laptop trolley. Small rooms for teaching staff, partly screened off by glass, are located between classroom spaces.
School D
A large triangular shaped community hall or central hallway rests under a high ceiling. Two sides of the hall are formed by two-storey constructions with enclosed balconies on the upper floor and several extensive classroom spaces. The third side is blocked by a gym that can be merged with the hall. The hall offers immediate access to all areas within the school. It can be divided with a curtain hanging from a bridge crossing its middle, and a stage can be mounted in the hall's centre. Pre-school facilities are located in a somewhat separate realm and the library is located in one corner on an upper floor. Teachers have laptops and access to laptop trolleys.

Social dynamics and teamwork

All four schools are designed to support cooperation and teamwork among teachers. One way of doing so is to locate teachers workrooms between classroom spaces with open doors or windows to both sides, as is the case in

school C. Each workroom is shared by a group of teachers who share responsibility for the same group of pupils, thus partially replacing central workrooms for teachers in administrative areas.

Access to information resources and digital media

Students and staff of school B will make use of a traditional school library and a conventional computer lab. School C, on the other hand, represents an arrangement where a traditional computer lab and the school library are united in a cohesive information centre, with hallways running along three sides. All class groups have instant access to bookshelves and desktop computers in this centre, and laptops are also provided. Complaints have been made about disturbing noises and indoor traffic in the open information centre. This might partly be explained by the large glass surfaces to all sides, magnifying disturbing sounds and visual stimuli affecting pupils and staff. Teaching in the open computer lab, in particular, is considered somewhat troublesome in this respect. Teachers in schools A and D rely on laptops, the idea being to let library resources and laptop trolleys flow throughout the school buildings on demand.

In spite of the ambition and the great costs involved in the design of recent school buildings, it should be noted that digital projectors are not built into all classrooms. Projectors, and sometimes also smart boards, are growing in number but have not yet become the norm in Icelandic classrooms at primary level. Trolleys with projectors may be provided, but easier access to technology and net-based resources would be ensured with fixed equipment installed.

Access to the environment and community ties

All of the four schools discussed here aspire to having close ties with their respective communities. Facilities for music lessons and sports, for example, are commonly used by other non-school staff. Offices and school receptions, however, are not as easily located upon entrance as guests might expect, often being placed on an upper level or in a confined corner, in order to push other key areas to the forefront in the overall design.

Some schools take community ties further than others. School D, in particular, is centrally located and fosters manifold ties to its young suburban community. A special coffee corner will be assigned to the elderly, a preschool facility is placed within the new school building and the school library might be set up to serve the community along with pupils and school staff. Special rooms are assigned to individual music lessons and band rehearsals. The gym will be used by local sports associations, although it is said to be a bit too small for their needs. A local church has not been built in the suburb and school facilities have

therefore been used on some occasions by the religious community. The playground has not yet been constructed, but it will lie at the heart of the suburb and has been designed to offer outdoor recreation for all age groups. The school also makes extensive and systematic use of a wooded area close by for outdoor teaching on an everyday bases.

Democratic design processes

The *Design Down Process,* mentioned earlier, was used to prepare and guide the design of buildings in schools A, C, and D. Educational administrators, politicians, teachers, architects, engineers, researchers, residents, parents and even students of a young age took part under the supervision of municipal authorities. This approach has proven to be fruitful and has influenced school building design in other parts of the country. Those who could play a part are involved in the process in order to make sound decisions and develop best educational practices in a rapidly changing society (Jilk, 2005). The design team is required to move sequentially through a series of design steps, with each step built on decisions from previous steps. In the case of school A, a group of 40 different stakeholders met three times for two days each time. By defining fundamental ideas and values that should underpin school work, they carefully followed each step of the process before going into the structure of pedagogical work. Finally, they made decisions about the building itself. A report was written and reviewed by education authorities in Reykjavik (KKE Architects, 2001), before assigning the final design to the architects and construction parties involved.

Results on teaching and learning in an open environment

Examples of recent designs of school buildings have been outlined above, but the crucial question, i.e., how new design features might affect teaching and learning, remains to be answered. We will not reflect on this question in any depth or detail in this limited study; only a few results are presented here, based on responses of teachers to a questionnaire survey conducted in all twenty schools. These results offer a comparison between teachers who work only or mostly in open classroom environments (18%) and those who teach only or mostly in traditional classrooms (62%).

Teachers seem relatively satisfied with their respective school buildings. Around 70–80% of teachers in all twenty schools maintain that both the building as a whole and the classroom environment suit their ideal instruction

methods. This is shown in *Figure 2*.

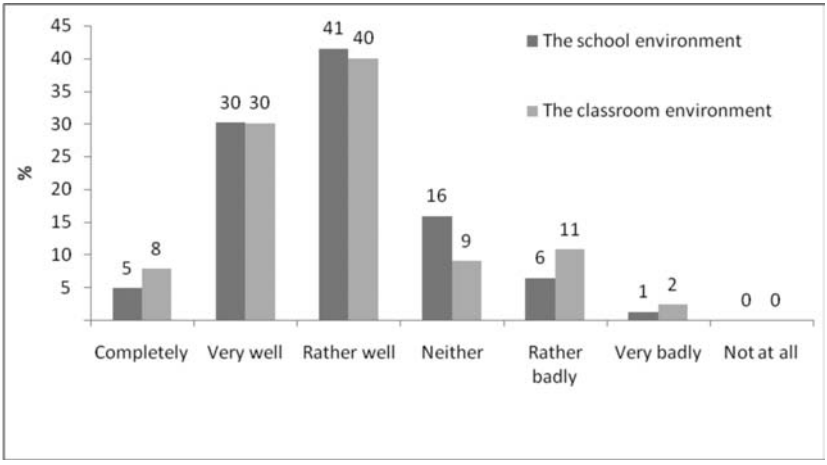

Figure 2: How well does the current school/classroom environment in which you work most of the time suit your ideal teaching methods?

Around 23% of the teachers who responded to the questionnaire maintained that their classroom environment suits their ideal teaching methods rather badly, very badly, or neither well nor badly. It has not, however, been determined what exactly this dissatisfied group would like to change in their classroom settings. When the teachers were asked to indicate, based on a choice of options, what they would like to do to a greater or lesser extent in their instruction, no significant difference appeared in the responses. Both the satisfied and dissatisfied group said they wanted to do a number of things to a greater or lesser extent. No significant difference appeared between those who taught only or mostly in traditional classroom spaces and those who taught in an open classroom environment.

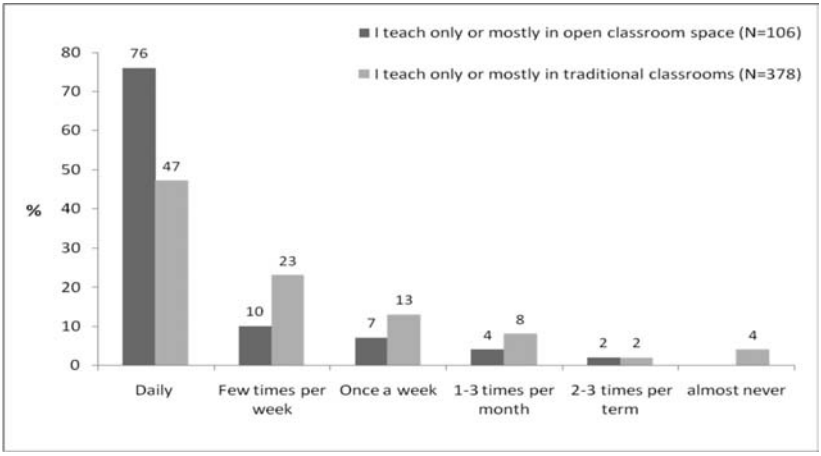

Figure 3: How often do you collaborate with your colleagues? A comparison between those who teach only or mostly in an open classroom space and those who teach only or mostly in traditional classrooms.

Teacher collaboration, as displayed in *Figure 3,* appears to be more common among teachers working in open classroom spaces. A comparison of mean scores, carried out using a t-test for an independent sample, indicates a significant difference ($t=4.42$; $p< .01$). However, little difference appeared when the teachers were asked about teaching methods, except that, according to their teachers, the pupils in open settings are allowed to choose between tasks more often than pupils in traditional settings ($t=3.3$; $p < .05$). These pupils also seem to enjoy more variation regarding group division ($t=3.12$; $p < .05$) and the arrangement of their workspace ($t=4.16$; $p < .01$). Data from our extended research project allows for further investigation into different relationships between the physical environment and teaching methods. Results from such studies will be presented at later stages of our research.

Concluding remarks

This particular study within a wider research spectrum focuses on four school sites chosen from a sample of twenty schools to represent the most recent design projects within the Icelandic school system.

The four school buildings seem to reflect the seven themes for 21st century learning environments defined by the OECD. All four buildings clearly represent a progressive approach in both architectural and educational terms, as well as reflecting a sociopolitical ambition to be at the forefront in school

development in a changing world. A gradual but definite shift towards a more open and dynamic school is clearly apparent in the design of these buildings. This shift is based on new knowledge and ongoing discourse about education and learning. It is manifested in many architectonic features and different ways of organising everyday work.

Features of flexibility, inclusive and open approaches, transparency, flow, active teamwork and social dynamics appear to guide recent school design. Clusters of classrooms, large and open classroom spaces, transparent and movable boundaries, as well as public spaces allowing for manifold interactions in flexible groups, seem to be replacing traditional classrooms with closed doors along confining corridors.

Design features reflecting adaptation to technological advancements are evident and efforts to make information resources and information technology accessible are apparent, as are attempts to foster manifold ties with the local community.

Sustainability issues are only vaguely evident in the present study, except for the general notion that learning environments need to be of good quality and adaptable to change. Teaching outdoors and open access to the environment, however, appear to play an important role in the design of the most progressive school site in our sample. Outdoor platforms outside classroom spaces, a multipurpose playground with manifold opportunities and an outdoor teaching area in a natural environment can be regarded as bridges between the school community and its environment in both physical and cultural terms.

Finally, the participation of many different stakeholders in the design process at preparatory stages, in order to obtain more appropriate facilities and encourage school change, appears to be a successful approach to designing school buildings (Walden, 2009; Woolner, 2010). An approach of this kind was introduced in Iceland at the turn of the century and has been used by a number of municipalities of late. Representatives of the local community, administrative staff, educational researchers, teachers, pupils, technicians, engineers and architects have joined forces in a democratic process and developed progressive designs reflecting new knowledge and new ways of going about teaching and learning. This has resulted in a more open and flexible environment, designed for collaboration and open ways of working at all levels.

When our results are viewed in light of the seven design themes outlined by OECD for schools in the 21st century, congruence is obvious for most of the themes. Recent school buildings in Iceland also seem to reflect a development similar to other countries and resonate with advanced school buildings in other parts of the world (Walden, 2009). It should be noted, however, that clusters

of classrooms and open learning spaces are not new arrangements; they have been tried in many school buildings throughout the past century in different countries, including Iceland. Examples from Sweden indicate that such initiatives have often been met with scepticism and have not necessarily lead to any radical changes regarding teaching and learning (Törnquist, 2005). This is also the case in the Icelandic context. However, new knowledge and insights into education and reform, as well as technological advances and local policies, seem to have paved the way for such initiatives of late and made them more likely to bring about profound change.

The present study on school buildings and physical learning environments and their relationship to school practices serves to throw light on contemporary design, to explore design features characterising new school buildings and to determine how design has evolved towards future needs influencing teaching and learning. Preliminary findings from a survey among teachers in our sample of twenty schools indicate that new learning environments may encourage teaching collaboration, which in the literature has been positively linked with school effectiveness (Sigurðardóttir, 2010; Teddlie & Reynolds, 2000) and increased pupils' choice. In later stages of our research, we expect to be able to determine in more detail how various pedagogical issues relate to arrangements of the physical environment. We will look at reconstructions and extensions of older buildings in a separate study and reflect on old constructions in view of present design. In addition, we will take a more detailed look at classroom layout and consider more closely the role of information resources, media and new technologies. It will also be of interest to follow further the development of the four schools included here, as well as other schools from our sample, in order to see how old and new designs fit future needs.

The main recommendation for educationalists and architects alike would be to collaborate closely with all stakeholders in the design process, with the ultimate goal of providing better education for pupils. Education authorities and school staff themselves will also have to develop the capacity to work in a new environment, and to ensure sustainable support from parents and other stakeholders. Furthermore, providers of teacher education programmes should consider how to best prepare prospective teachers for new ways of teaching and learning in settings different from previous practice.

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Biographical note

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Off to School: A Comparative Study of Schools in the U. S.

Eftyhia Theodoropoulos[1]

This study compares the physical structure of two schools of differing socioeconomic backgrounds: one is a private day school servicing the children of some of the most affluent families in one of the biggest urban cities in the southwest; the other is a technical or vocational high school with the majority of the students living in »economically disadvantaged« homes. The research has been carried out with traditional qualitative methods, as well as with the aid of photography. The juxtaposition of photographs of the built environment of the two schools creates a concrete visual manifestation of the differences in the daily experience of the students who attend the schools. The visible differences lead to the emergence of research questions such as whether the experiences are different for the students in the two locations and, if so, in what way, as well as the question as to why both of the locations are termed »schools« when they are evidently so vastly different. The photographs give the viewer the impression that the educational experiences of the students attending the vocational school are detrimental to their development of autonomy and a sense of identity and self, while the private day school provides an environment much more conducive to the fostering and development of both autonomy and a sense of identity and self. The research is important because it indicates how the educational experience of the students might have implications for future mobility within the existing hierarchical social structure, thus making an important contribution to social pedagogy.

Keywords: Class differentiation in schooling, Critical pedagogy, Educational disparity, Educational visual study, School environment, School environment and learning, School-to-prison pipeline, Urban education, Zero tolerance policy

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Introduction

»On a typical weekday morning between September and June some 35 million Americans kiss their loved ones goodbye, pick up their lunch pails and books, and leave to spend their day in a collection of enclosures known as elementary school classrooms… The school attendance of children is such a common experience in our society that those of us who watch them go hardly pause to consider what happens to them when they get there…« (Jackson, 1968, p. 94).

Although Philip Jackson wrote this in 1968, there is a vital point made here that remains very relevant to this day. As a society, we send our children off to school without really thinking about what »school« is or what it looks like. In fact, the actuality of school is very different for children with a differing socioeconomic status.

The problem addressed in my research is the universal use of the word »school« to describe the obligatory lived daily experiences and reality of children in the United States. Progressive educators value universal compulsory education; it is viewed as not only a privilege but also as a human right held by every individual, a cause to crusade for. Despite the fact that this »human right« is already available, free of cost, to children in their fundamental stages of development in the United States, education looks different for students in different neighbourhoods and provides different outlets for employment upon graduation/drop out depending upon the location and status of the school.

The fact that schooling is compulsory is important to emphasise since the compulsory schooling experience can prove to be detrimental to the future quality of life for many students, especially those with a lower socioeconomic status. I argue that the compulsory schooling experience has the potential to impede some students from receiving an education that is beneficial to their development and growth as individuals, and can have negative implications for the future lives of students from impoverished urban and rural neighbourhoods. This is due to the fact that not only is the educational experience differentiated in order to school those students from poor families for working-class positions, but in the existing post-industrial U.S. society, where production has moved abroad, this differentiation in the schooling experience also exposes many poor students to the criminal justice system. Increasingly, students with a low socioeconomic status are funnelled into the prison system through what has been referred to as the »school-to-prison pipeline«.

The term »school-to-prison pipeline« emerged in the 1980s and is used to describe the correlation between students with a low socioeconomic status

and the funnelling of students into the criminal justice system through their school. Data suggests that the adoption of zero-tolerance policies in school districts across the country and the increased police presence in schools coupled with the enactment of laws that mandate student referral to law enforcement authorities for various school code violations have contributed to a »significant increase« in the suspension and expulsion of students, as well as an increased involvement of students with a low socioeconomic status with the criminal justice system (Ward & Losen, 2003, p. 10). Additionally, »Not surprisingly, those most frequently targeted for punishment in school often look - in terms of race, gender and socioeconomic status - a lot like smaller versions of the adults who are most likely to be incarcerated in society« (Noguera, 2003).

In this way, schooling continues to mirror society at large. »The prison system is the largest growth industry in the United States. Levels of inequality and correlated poverty, violence and human suffering, are quickly approaching those at the beginning of the 20th century« and »… the realities of the incarceration of poor people… are related to the high levels of educational inequality« (McGrew, 2008, p. 32). With the decrease in the demand for physical labour in the United States, the increase in the flight of factory production abroad and the continuing development of the prison industrial complex used to house and control an increasingly unemployed poor sector of society, prisons have become a substitute for a factory job and school failure can now be said to lead to incarceration for students with a low socioeconomic status.

Theoretical approach and methodology

The critical approach to schooling, which has spawned a multitude of theories, does not ignore the reality of compulsory school and the circumstances of its inception. Margolis et al. (2001) credit the »correspondence theory«, developed by Bowles and Gintis, as the most »influential examination of the process by which schools reproduce these dominant interests« (p. 7). This theory argues that »through formal and hidden curricula schools reproduce the social relations necessary to maintain capitalism: competition, and evaluation, hierarchical divisions of labor, bureaucratic authority, compliance, and the fragmented and alienated nature of work«.

The various critical theories that have evolved differ in ways that are very valid and of importance. I do not offer an analysis of the intricacies of critical education theories here. I simply wish to emphasise a notion central to the critical approach to education: that of reproduction. In other words, schooling is a social institution that aids the recreation of the existing hierarchical society.

The main criticism of the reproductive theory is that it does not give human beings agency. In other words, it fuses human beings to social institutions and renders them powerless to make a change in their oppression; unable to resist or create their own history, doomed to recreate the existing system. In response to the lack of human agency and the limitations imposed by the reproductive model, there emerged an approach that aims to give some power back to the individuals that exist within social institutions. Resistance theory gives, »… central importance to the notions of conflict, struggle and resistance« (Aronowitz, 1985, p. 71). It is a theoretical framework that allows specific school locations and individuals to be explored as unique places where resistance can and does occur. There is no need to examine this theory in detail, rather it is an important addition to the theory of reproduction and allows for a better understanding of schooling and the ways in which approaching issues can lead to a more beneficial outcome for the participants of the compulsory schooling system. I draw on both the reproduction theory and the notion of human agency in my critical approach to my research.

The use of multiple methods allows for the emergence of greater understanding in a specific situation, a better picture of the reality that exists in a particular social setting. In addition to traditional qualitative methods, I have employed photography in my research inquiry. This has served to enrich the data collected, but it can also enhance the readers' experience.

Collier argues that the camera is beneficial to the observer when he writes, »The camera is another instrumental extension of our senses, one that can record on a low scale of abstraction. The camera, by its optical character, has whole vision… the camera faithfully records this specialized subject and also all other associated elements within the focus and scope of its lens. This capacity makes the camera a valuable tool for the observer« (Collier & Collier, 1986, p. 7). Furthermore, the photograph also functions as data, as Harper suggests: »The photograph can be thought of as 'data'; in fact the unique character of photographic images force us to rethink many of our assumptions about how we move from observation to analysis in all forms of sociological research« (Harper, 1998, p. 35).

In my research, I took photographs of the physical environment of two school sites, concentrating on areas such as classrooms, grounds, designated play areas, administrative offices, etc. These photographs served as empirical data, which I analysed in a comparative fashion. The first school site was a private day school in a large south-western city. My original study design included a juvenile detention facility as the second school site, but I was denied access to a juvenile detention facility. Instead, I used photographs of a school site in a

poor neighbourhood of the same south-western city. Although this was not my first choice for this comparative analysis, it does adequately provide an image of what »school« looks like for students with a low socioeconomic status.

Southwest country day school: a photo landscape

My first impression of the Southwest Country Day School (SCDS) campus was quite impressive. The K-12 campus unfolds in 40 acres of meticulously landscaped grounds, running across a mountain chain bordering the privileged northern region of the city. The campus is spotless. There is no trash on the grounds. Concrete sidewalk pathways weave in and around the campus.

Buildings are well maintained, mid-century modern structures that dot the landscape. Due to the warm south-western weather, classrooms are contained within independent structures and, contrary to traditional notions of a school building, there are no lengthy hallways to be found.

Like the cleanliness of the outdoor environment, the classrooms at SCDS are fresh and inviting. Recently purchased student desks and spotless carpets coupled with smoothly painted walls create an atmosphere of warmth, although it is easy to see that these rooms have a scholastic purpose. Student work adorns the walls, teachers' desks sit in corners and whiteboards make it obvious to an observer that, indeed, schooling takes place here. Some classrooms have couches, plants and other items reminiscent of a home. Things in the classrooms are new, clean and organised.

An important element to understanding the daily experience of students on the campus is the physical environment. Photos taken on campus were instrumental in the understanding and analysis of the environment and allowed for an interpretation of the environment that would be hard to attain purely through the use of words. They provided a robust depiction of life on campus for SCDS students.

Photo 1: The Grounds

Photo 1 offers an accurate first impression of the campus. The serene, resort-like ambiance is captured in this photograph. The crisp, clean feel of being present in this

Photo 2: The Secondary School Area

place can be felt when looking at the image. There are some subtle hints that might suggest that the location is perhaps a college campus or some sort of recreational building exhibiting art or theatre. That which does not come to mind is precisely what is actually depicted in this photo: a secondary school serving students in the seventh and eighth grades. Compulsory schooling laws dictate that students must attend school, and doing so in a setting such as that shown in Figure A could be a pleasant experience.

In Photo 2, it is more obvious that the location observed may perhaps function as a school setting, although this is not a definite observation. The picnic tables suggest that people spend time here. It is not clear that this is definitely a school setting, but once suggested it would make sense. The type of school would definitely be one that serves a more privileged population, since it bears no resemblance to a typical public school in the United States. It would also be more typical of a college setting than one that serves a seventh and eighth grade population. Again, the grounds are immaculate. The landscaping is breathtaking. Nature is a big part of this experience. Photo 2 really showcases the natural lighting typical of this campus, both indoors and out.

Photo 3: Student Lockers

Although there are no indoor hallways leading to classrooms at this campus, lockers are tucked into overhangs that shelter the unsecured belongings of the students. The locker areas, as seen in Photo 3, resemble outdoor hallways, but do not function as such. Students do not file down these pathways single file to get to their next class; they walk in and around these pathways during intervals between classes, free from

the constrictions of walls.

Photo 3 highlights the windows that line the walls and the entrance to a typical classroom on the campus. The door and the windows are made of clear glass. This allows for a vast amount of natural lighting to filter in throughout the day. This south-western city has plenty of days full of sunlight to offer, and the school takes full advantage of this. Again, the space is new and meticulously maintained.

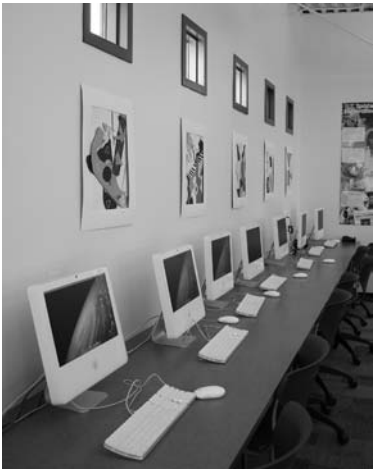

Photo 4: The Library

Photo 4 shows the computer-lined far wall of the middle school library. The wall is lined with small windows that let in the sunlight. All of the furniture and carpeting is new and clean. The Mac desktops are available for student use. Student work adorns the wall. The library provides a studious cove for students to work independently or in groups for school projects. Yet again, the space is inviting, fresh and clean.

The final image of the campus is that of one of the multiple sports fields on campus (Photo 5). The landscaping creates a pastoral feel. There is quite a bit of greenery, atypical of the geographic location. The field looks more like a resort than a school campus, although the fencing around the field does intrude on the resort feel. This image shows a space where students can run free with plenty of room for them to do so. The paved pathways make transportation for the P.E. teachers possible, as they navigate between the various fields on their golf carts.

Photo 5: The Sports Fields

Valley technical school: a photo landscape

The Valley Technical School (VTS) campus is a high school located on the west side of this south-western city. The »West Side« is an area notorious

for high crime rates, poverty, and issues concerning illegal immigration due to the city's proximity to the Mexican border. It is a part of the city where police presence is a constant. The aim of the school itself is to give students an opportunity to develop technical skills, while also developing their academic background. Career path choices include cosmetology, automotive, photography and food service, amongst others. The typical graduate seeks post-secondary training or a community college setting, if not immediate employment.

The first image of the campus is that of the administrative building. Photo 6 shows the school prior to one's entrance onto the campus. The entire campus is fenced off with the entrance point being monitored by privately contracted security staff. Both students and staff are required to wear identification at all times to prove that they are indeed permitted to be on the campus. A photo of the actual entrance reveals the school name, and so Photo 6 was chosen in lieu of the front entrance. Photo 6 shows the concrete and secured atmosphere of this campus, whose architectural design promotes functionality over aesthetics.

The centre of the campus (Photo 7) reveals a continuation of the concrete grounds and buildings. Most of the area is paved over with concrete, while there are shrubs and trees planted in small plots of unpaved ground. Although difficult to see in the photo, there is a

Photo 6: Gated Campus

Photo 7: The Grounds

problem with pigeon droppings in all areas of the school grounds; the unsanitary bird droppings can be found in every corner. In addition to the bird droppings, student-produced litter is also prevalent. The maintenance crew appears to be engaged in campus projects at all times but seems to be unable to create a picturesque upkeep.

On the VTS campus, students move from building to building in the span of their daily class schedule. In Photo 8, there is a view of the hallway in one of the main academic buildings. The photo depicts a long hallway lined with lockers used to store student possessions. There is no natural lighting and the artificial florescent lighting produces an atmosphere reminiscent of a warehouse, a factory or some such enclosed building. A mustard-coloured piece of what was once a drinking fountain stands next to a rusting and weathered grate. Although the fountain does not work, it has not been removed. The tiled ceiling contains pieces of stained roofing that should perhaps be replaced. The grey-themed colour scheme is carried through to every aspect of the hallway and students walk to class on linoleum tiles very indicative of an institutional building.

Photo 8: Hallway

Although most of the campus is older, it does contain a few remodelled structures. Photo 9 shows the recently refurbished library. Grant money has provided students with access to both PC and Mac desktop computers. However, students spend little, or none,

Photo 9: The Library

Photo 10: The Sports Fields

of their day in the library. Teachers sign up for access to the computer labs in order to complete special projects. Students are also given access to the library both before and after school for school-related activities. The library is large and can service many students simultaneously. It is clean and well maintained with brand new carpeting and fixtures. There is no natural lighting and so fluorescent lighting is again present. The library is one of the most well maintained areas on the campus.

The sports area of the campus is quite a distance from the academic buildings. Although not easily perceived in Photo 10, a busy street, private homes and local businesses border the sports fields. The sounds of the city can be heard in the background. The concrete area of these basketball courts is cracked and weeds have pushed through over time. The area is fenced in and the basketball hoops are dotted with rust. This entire part of the campus shows the passing of time. It is hard to imagine that the school basketball team would use these courts. There is no shade from the sun as the trees in the backyards of private homes are far from a student athlete at play here. The courts have an atmosphere of neglect and lack maintenance. The fencing reinforces the feel of security and enclosure.

Discussion and analysis

The daily experiences of the students at Southwest Country Day School differ vastly from the daily experiences of students with a low socioeconomic status. These differences suggest dire consequences for those students who lack the privilege afforded to students who attend SCDS, and schools like it, across the country. Class delineates these differences in experience. As highlighted by McGrew (2008), »In our current historical period society is generally compassionate towards the children of privilege, who enjoy extended periods of adolescence, and are valued and forgiven. Poor children, and children of color in particular, on the other hand, are viewed with a racially charged gaze that defies known human biology in an effort to conceive of them as adults, evil in their motives, and threatening…« and that this conception is often, »… exploited,

promoted and at times shared by the professions and industries that benefit from their destruction«, as in the prison industrial complex, etc. (p. 168).

The photos of the SCDS campus reveal a luxurious atmosphere that caters to student needs. How does this make an impression on the students? A student who is accustomed to an educational setting such as that provided by SCDS would have a hard time compromising the expectation of being in such an environment. A student used to this campus will seek out similar environments upon graduating. A college campus would make for the perfect transition from this situation. In this way, students are taught by their environment to seek out similar settings. This necessitates a privileged situation and environment.

The photos from Valley Technical School tell another story altogether. The physical environment on this campus can be said to teach something very different to this student population. The students of this campus have differing expectations from those of the students of SCDS. In fact, the images from the SCDS campus are quite contrary to those of VTS. As with the educational experience of poor students, the school environment is much less than it could be. For example, buildings could be well maintained, but they are not. The school grounds could be well manicured and landscaped with an abundance of plants and trees, but they are not. The campus could be clean, free of trash, graffiti and chipping paint on the wall, but it is not.

The typical school environment attended by poor students is emotionally taxing, dingy, devoid of natural lighting and reminiscent of a factory or prison. Access to outdoor areas is strictly monitored, fenced and regulated. Students in most urban schools enter the building through security checks and metal detectors.

Experienced daily, an environment such as that of VTS can only lead a student to accept such environments in his adult life. This physical environment does not teach a student how to learn and grow as a human being, it teaches him how to exist in a highly regulated environment that leaves little room for him as a person. If the United States did have sufficient factory positions available, the learning experienced at such a campus would be very conducive to life within the confines of a factory. Since such jobs are not readily available, the options for these students increasingly include a future in an adult facility. A college campus would not provide these students with the rigid structure to which they are accustomed.

Implications for further research

The conclusions of this study necessitate a need for further research. A correlation between schooling experienced by students of low socioeconomic status and the criminal justice system has been established in recent research. This problem must be further addressed and changes must be made. A society that perpetuates a class system must be challenged. This perpetuation must be reversed in order for individuals in that society to reach their true human potential.

Specifically, schools do not exist in a vacuum. Schools are situated within a larger system, one whose economy is based on the stratification of class. The few benefit from the exploitation of the majority. This majority provides the labour that leads to the economic proliferation of the privileged class. However, very little change can be achieved within this existing system because schools function as a socialising agent that prepares students for their adult positions within the existing hierarchical system. Without addressing this specific system as a whole, educational reforms will have no impact on the future lives of students.

There is a difference between schooling and education. Essentially, it is education that human beings crave as they develop into adulthood, education that caters to individual interests, fuels creativity and intellectual growth, and ultimately fosters the development of a whole human being. Education does not necessitate the existence of schools and schooling. Reformers look to schools as a potential arena for radical changes in society. Due to the nature of their existence, I would argue that schools cannot be a location for these changes. Schools do a great job of teaching students their position in the pre-existing stratified society. Such schooling is multidimensional and is perpetuated by an overarching system.

»Equal educational opportunity is, indeed, both a desirable and a feasible goal, but to equate this with obligatory schooling is to confuse salvation with the church. School has become the world religion of the modernized proletariat, and makes futile promises of salvation to the poor of the technological age« (Illich, 1970, p. 10).

As such, this research suggests a candid look at the daily lives of children in the United States. The compulsory practice of schooling in the United States and the implications of this experience for students with a low socioeconomic status must be addressed. This must be done at a systemic level. Further research may bring about a more complete understanding of action that can be taken to eradicate the social injustice of compulsory education.

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Biographical note

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Hypothetical Art and Art Education: The Educational Role of the Method of Hypothetical Artwork Modelling

Jurij Selan[1]

A hypothetical artwork is an artwork that exists only as a fictional creation of an art theorist. The explicatory powers of such hypothetical artworks are mainly used by an art theorist to reflect on an art theoretical issue under consideration. Such an artwork has an intriguing and paradoxical nature. On the one hand, it is only fictitious, but, on the other hand, it tries to function as a real token, persuading the reader to trust it *as if it were a real artwork*. Even though this kind of argumentation can be deceiving, as it presents a statement of real art on the basis of fiction, it has some important explicatory abilities that can be put to good use in the art educational process. In this case, the construction of the hypothetical artwork is handled as the construction of a theoretical model. The author calls such theoretical construction *the method of hypothetical artwork modelling*, and its result *the hypothetical artwork model*. Such a hypothetical artwork model can be usefully employed when one wishes to encourage the student to become fictionally involved in the process of creation of an artwork, thus giving him or her more personal experience of problems that accompany the process of creating a real artwork. When such hypothetical experience is gained, the student can more efficiently learn about the considered art issue. In the paper, the author demonstrates how the explicatory powers of the method of hypothetical artwork modelling can be put into educational practice regarding an issue taken from colour theory (i.e., the primary colours fallacy).

Keywords: Art education, Art theory, Colour theory, Hypothetical art, Models, Primary colours

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Introduction: The Curious World of Hypothetical Art

A hypothetical artwork is an artwork that exists only as a fictional creation of an art theorist (Selan, 2008, 2010). Usually it is introduced into the text by the linguistic assertion of supposition; for example, by the use of syntagms: »let us suppose, imagine that, etc.« Since the hypothetical artwork has no life outside the hypothetical world of a particular art theory, its intention is not to fascinate but to explicate. Therefore, the explicatory powers of hypothetical art are used by an art theorist mainly to reflect on a particular art theoretical issue under consideration and to verify certain stated art theoretical claims. One such famous hypothetical artwork is, for instance, Picasso's *Le Cravat*, which was invented by art theorist Arthur C. Danto (1981, p. 40).

However, a hypothetical artwork has an intriguing and paradoxical nature, which can be demonstrated as follows.

For a thing to be an artwork, two criteria that we routinely take for granted must be met. The first is the criterion of *reality*, which postulates two kinds of reality. On the one hand, *the reality of facture*: we believe that an artwork must be manufactured as a sensual artefact.[2] On the other hand, there is *the reality of place*: an artwork must also be accepted by some cultural context (i.e., artworld) that evaluates it as an artwork.

This first criterion further implies the second: an artwork's reality must be an outcome of two modes of *experience* that come in a certain natural order. An artwork must first be created by an artist. Only later can an interpretation follow, which places it in the artworld.

If something does not meet these criteria then it is not an artwork and can find no place in any kind of art history. So, which are the »things« that do not succumb to these criteria?

First, let me take as an example the ordinary stone. We obviously do not treat it as an artwork and no art histories would document it as such. Even though it has a facture, it is not properly created; and even though it has a natural place, it is not socially placed, for it lacks a proper interpretation. In brief, it is, as Arthur C. Danto (1981, pp. 1-33) would say, just a »mere real thing.« However, as 20th century art showed us, such a mere thing can actually at some point be accepted as an artwork, but only if properly transformed into a *readymade*.

2 Of course, I am not suggesting that all art concerns the manufacturing of material objects (e.g., performance art, conceptual art, body art, digital art, etc.). However, I want to stress that all art has to be *presented* in some kind of medium. Therefore, I use terms »facture« and »artefact,« (Latin: »facere« = 'make, create'), to accentuate this creational aspect that all artworks share.

But what about a »thing« such as a hypothetical artwork? Could it be documented by some art anthology, such as that of David Summers (2003), where he precisely states the two categories of the artwork's reality: the facture and the place? No, for it lacks something that we all generally expect a real artwork to have. If a stone mostly lacks a proper interpretation and is thus a »mere thing,« a hypothetical artwork is only a fiction having no life outside its theory. Thus, it obviously lacks a facture and a proper creation, consisting only of an interpretation, and can for that reason be called, paraphrasing Danto's own expression, a »mere no-thing.«

When such a mere no-thing is used in the deliberation of a particular art issue and in the argumentation of a stated art thesis it inevitably faces a paradox. On the one hand, it is only fictitious, but, on the other hand, it tries to function as a real token, persuading the reader to trust it *as if it were a real artwork*. Despite being fictitious, a »mere no-thing« has an intention to be taken as real.

It is precisely in this paradoxical nature that both the explicatory abilities and the limits of hypothetical artworks originate.

When an art theorist wants to address a particular art theoretical issue by constructing a hypothetical artwork, he or she must do so in a process of argumentation that is sufficiently logical to make the reader trust the constructed hypothetical artwork with the same certitude as if it were a real artwork. Such a process has two levels: *inductive* and *deductive*. Firstly, a hypothetical artwork must be established as a piece of evidence such as a real artwork would normally be. In order to do this, the art theorist must convince the reader that the constructed hypothetical artwork corresponds to the criteria to which real artworks spontaneously correspond. Since it is the real facture and the real artistic process that a hypothetical artwork critically lacks, the art theorist must simulate a creative process that could lead to the suggested artwork and its facture in reality. When the reader is convinced in this sense the hypothetical artwork can be taken as a valid piece of evidence in the argumentation of art problems that exist in reality.

Only when this is achieved can the hypothetical artwork enter the second level, where it is involved in a process of so-called *(inductive) generalisation*. In this process, the art theorist tries to argue that the thesis proved by some hypothetical artworks is generally valid for all artworks in history.

However, the problem is that such argumentation can go wrong—just as any kind of argumentation based on fiction can. *Logical fallacies* can appear at any of the two levels. I will try to demonstrate this with an example.

When on the first level of argumentation a hypothetical artwork is established as a reliable piece of evidence, this can be achieved in several different

ways. Arthur Danto's book *The Transfiguration of the Commonplace* is full of such ways. Let me just consider the following one (Danto, 1981, p. 31): »Imagine that we learned that the object before us, looks like a painting that would spontaneously move us if we believed it had been painted—say the *Polish Rider* of Rembrandt, in which an isolated mounted figure is shown midjourney to an uncertain destiny—was not painted at all but is the result of someone's having dumped lots of paint in a centrifuge, giving the contrivance of a spin, and having the result splat on canvas, 'just to see what would happen'.«

This hypothetical artwork can be called the *Polish Rider Made in a Centrifuge*. The *Polish Rider* actually exists as an artefact. However, Danto transforms it into the hypothetical artwork by making speculations about how it could be created. So, by suggesting that the *Polish Rider* could also be made in a centrifuge, Danto tries to prove his basic thesis, which states: the facture of *Polish Rider* has no role in defining its artwork status; therefore, its entire value is defined exclusively by the social context or so called *artworld*.

However, such hypothetical artwork simulation does not convince me. Why? If I consider the daring hypothetical process that according to Danto could lead to the facture of the *Polish Rider* I cannot trust it. Just think about the actual possibility that the facture of the *Polish Rider* would be made in a centrifuge! It just does not seem plausible. Of course, some artworks—like those by Jackson Pollock or some brownish spills by Morris Louis—could more likely be made in a centrifuge. However, that only tells me that one cannot put factures of all artworks to the same denominator. Subsequently, from the point of view of reality, I cannot consider the *Polish Rider Made in a Centrifuge* as a piece of evidence that could properly justify Danto's argument, since it is impossible for it to really be made that way.

However, there is another problem that a hypothetical artwork can face in such argumentation. This problem is linked to the second level of the logical inference by (inductive) generalisation. Here the *Polish Rider Made in a Centrifuge* faces another logical issue.

Let us ask ourselves why Danto chose to ascribe the »centrifugal facture« to one of Rembrandt's artworks and not one by Morris Louis, which would have been better suited.

Danto's main intention is to generalise his basic thesis to all artworks in history. This generalised thesis states: the status of each and every artwork does not originate from its facture, which is thus irrelevant, but from the interpretation that locates an artwork in the proper place, called the »artworld« (Danto, 1981, pp. 124-126). However, real artworks (e.g., Duchamp's *Fountain* and Warhol's *Brillo Boxes*) that could prove such a claim have a limited range

of generalisation. Because they belong to a narrow group of artworks that we usually denominate as »post-Duchampian«, they cannot *inductively generalise* Danto's thesis to all art.[3] If Danto had made the inductive generalisation based only on post-Duchampian artworks this would have led him to *the fallacy of hasty generalisation*, which is a corollary of making inductive generalisations based on a range of evidence that is too narrow (Gardiner, 2008, pp. 139-140).

Thus, if Danto had wanted to prove his thesis for all art he would have had to resolve the problem of »too hasty generalisation.« This is precisely the intention of the *Polish Rider Made in a Centrifuge*: it enables Danto to also verify his thesis for the art of Rembrandt's time and subsequently expand the historical span of evidence to facilitate the logically valid inductive generalisation regarding all artworks in history.

However, as it seems to me, this does not work either. By constructing such a hypothetical artwork Danto only apparently avoids »too hasty generalisation«, while in fact making »too hasty generalisation« implicitly. When he constructs the *Polish Rider Made in a Centrifuge* he is already presupposing what he is only trying to prove: the general validity of his thesis for all art. This, however, leads such argumentation to the *fallacy of circular argument*, which presumes the truth of what is to be proved (Gensler & Gensler, 2002, p. 328). Danto already takes for granted that which he is only trying to generalise by the *Polish Rider Made in a Centrifuge*. Otherwise, he would not construct a hypothetical artwork—one that is so obviously implausible in reality —in the first place.

Hypothetical Artworks as Valid Models: The Method of Hypothetical Artwork Modelling

The logical issues that I came across when reflecting on the *Polish Rider Made in a Centrifuge* made me recognise the cardinal problem that the hypothetical artwork must resolve in order to be taken as a valid piece of evidence: it must somehow submit to the criteria of *good scientific argumentation*.

As we all know, it is common and legitimate in serious science to use »mere no-things« to argue about certain scientific problems. However, it is

3 An inductive judgment is imperfect because it is based on a finite number of empirical pieces of evidence. However, when a wide enough repertoire of evidence is available to us we usually transform inductions into deductions by making *inductive generalisations*. In this sense, we have no doubt that the sun will raise tomorrow, even though we cannot be completely certain, as David Hume (1986, p. 20) once famously argued.

important that in scientific argumentation such theoretically constructed mere no-things fulfil the essential criteria needed to construct something that logicians call a *valid argument* (Gamut, 1991, pp. 1-4). To simplify, two conditions are needed for a good argument: first, its premises have to be verified and accepted as true; and second, these premises must be further developed into a conclusion without digressing into logical fallacies.

In science, a premise or piece of evidence is accepted as true when it meets the condition of empirical verification in the reality of »our world«. So, when some pure theoretical constructions (»mere no-things«) are suggested as true they must also succumb to such verification. When they do, they become what the philosophy of science considers as *theoretical models*. In modal logic, such models are also understood as *possible objects* in *possible worlds* (Chellas, 1980, pp. 34-38). If an object presupposed in some possible world is to be rightfully considered as possible in our world too it must be established in accordance with the natural order of our world. That is, presuppositions of a possible world where a hypothetical artwork is constructed as a virtual piece of evidence must correspond to experiences in our world. Only when they do so can the constructed hypothetical artwork also be convincingly applied to a particular art issue in our world. So, we accept hypothetical artworks as *valid models*, and thus as *true pieces of evidence*, only if we can verify them in the reality of our world; if we cannot do so we reject them as *invalid models* and thus as *untrue pieces of evidence*.

As one can easily discover, it is precisely the verifiability of a possible object in the reality of our world that further prevents argumentation from getting into logical fallacies, such as the *fallacy of circular argument*. When an argument is circular, it is because its premises cannot be proven outside the possible world of the theory within which they were constructed.

From a scientific point of view, the *Polish Rider Made in a Centrifuge* is then nothing but an invalid model, because one cannot acknowledge the possible world in which it could be made as being compatible with our world. Therefore, if we wish to make good use of the explicatory powers of hypothetical art we must use it according to the criteria of good or valid argumentation. When it is done so, I call such theoretical construction of a hypothetical artwork *the method of hypothetical artwork modelling* and its result *the hypothetical artwork model.*

In the continuation of the article I will try to exemplify how hypothetical artworks can be constructed as valid models and subsequently also be put to good use in art education. The issue with regard to which I will explore the educational usefulness of the method of hypothetical artwork modelling is taken from colour theory and can be called the *painters' primary colours fallacy* (Selan, 2010).

An Example from Colour Theory: The Case of the Painters' Primary Colours Fallacy

Painters traditionally considered red, yellow and blue (RYB) as primary colours, until on the grounds of physical and physiological discoveries in 19th century it was proven that *subtractive primary colours* are actually cyan, magenta and yellow (CMY). However, whereas scientific colour theories took these new discoveries into account, artistic colour theories, such as those of Johannes Itten (1961) and Joseph Albers (1963), did not, which is why these theories were much criticised. Alan Lee, for instance, emphasised that it is excusable for Goethe (1840) not to accurately define primary colours since there was no exact knowledge back then on this matter, but that it is inexcusable for Albers and Itten not to have done so (Arnheim & Lee, 1982).

My concern here is whether this kind of criticism regarding artistic colour theories is legitimate. I believe that it is inspired by the division that many scientific colour theorists, such as Harald Kueppers, insist on following when teaching about colour. They insist on the strict separation of *colour theory*, as a universally true science based on physical and physiological laws, from the *history of colour theory* and its incorrect scientific solutions, despite their experiential and cultural values (Kueppers, 2008).

Even though making such a distinction is generally necessary for valid scientific research, it seems to me that if we cling to it too strictly when teaching about colour this could lead us to some intolerable anomalies.

For instance, when Alan Lee criticised Albers's *Interaction of Colour* based on its theoretical fallacies he also put Albers' work as an artist under question (Lee, 1981). This, however, feels to me like an anomaly in argumentation, for one can at the same time learn a lot from the ingenious colour structures in Albers' work and, as Dorothea Jameson (1983) prudently replied to Lee, be aware of his theoretical fallacies.

Jonathan C. Fish (1981), for example, also criticised artistic colour theories and their primary colours fallacy. However, when he recognised that Piet Mondrian used the wrong primaries in his artistic work, he, unlike Lee, did not disprove the value of his art on that basis. »Turner and Mondrian succeeded superbly in their use of colour, despite their incorrect assumption,« he wrote (Fish, 1981, p. 91).

It was precisely the stated dilemma regarding artistic colour theories and their treatment of primary colours that stimulated me to reflect on the matter of the painters' primary colours fallacy more thoroughly. To do so, I used *the method of hypothetical artwork modelling*, by which I constructed the next two hypothetical artwork models.

Hypothetical Mondrian, *Composition with Cyan, Magenta and Yellow*

Below is the first hypothetical artwork.

Presuppose, for example, the style of Piet Mondrian. To do so, one must decipher the »anatomy« of his real work (Kirsch & Kirsch, 1988). He preferred vertical and horizontal lines, primary colours plus black and white, and golden section divisions for defining composition.

Now *let me suppose* one of his paintings. Because the issue I am concerned with is whether the primaries Mondrian used are right or wrong, I should give the hypothetical painting the working title *Composition with x, y, z*, where x, y, z stand for primary colours that are not yet defined but under consideration.

In the process of modelling hypothetical Mondrian I am then at some point forced to make a decision as to which x, y, z I should choose in order to get the best artwork.

Presumably following Lee, if one were hypothetically in the place of Mondrian one should decide on purely theoretical grounds and choose CMY primary colours. In this way one would get *Composition with Cyan, Magenta and Yellow*, or, for example, in the case of his famous *Broadway Boogie Woogie, Broadway Boogie Woogie in Cyan, Magenta and Yellow*.

However, as we know, the real Mondrian made a theoretical fallacy and chose RYB primaries instead, thus getting the theoretically wrong *Composition with Red, Yellow and Blue* and the *Broadway Boogie Woogie* as it is.

I should then ask myself: »What could justify such a decision by Mondrian?«

Could it be the recognition that the result of choosing theoretically correct CMY primaries would feel »wrong,« having a similar effect as neon art, and that RYB primaries would feel better?

If so, what is it that feels wrong about *Composition with Cyan, Magenta and Yellow*? Is it perhaps the wrong »moral« value of the CMY colour chord, as Goethe would probably claim? Let me compare, for example, the primary blues of CMY and RYB chords. The correct subtractive primary blue is cyan; historical review, however, shows us that painters traditionally treated the wrong ultramarine and cobalt blue as primary. Cyan blue is theoretically perfect for mixing, but in itself feels kind of superficial, electric and shallow, and has little cultural value. On the other hand, ultramarine and cobalt blue are incorrect as subtractive primaries, but what probably mattered to Mondrian is that they have more experiential deepness and therefore more exceptional spiritual and cultural significance than cyan. So the need for the right »moral« value of the

colour chord would obviously make Mondrian prefer a historical choice of RYB primaries to the theoretical choice of CMY primaries.

The art educational value of the first hypothetical artwork comes forward instantly. Namely, while modelling a hypothetical Mondrian, a student of art can experience and subsequently recognise that the »right« choice of painters' primaries should not be subordinated only to the theoretical exactness of colour mixing, but should be also determined in relation to the historical tradition of colour usage and its experientially developed symbolism.

Hypothetical Rembrandt, *Double Self-Portrait*, Colour Aquatint, Oil on Canvas

The first hypothetical artwork model helped me transfer the accentuation from colour as a purely abstract entity in science to colour as the paint of cultural value in art. This, however, led me to construct a second hypothetical artwork.

Imagine that Rembrandt had both a painting enterprise and a colour printing enterprise. Now, *let me suppose* that he decided to create a diptych, which he would call *Double Self-Portrait*, made up of two identical pictures in terms of colour, differentiated only in the process of their facture, the first being made as a colour print and the second as a handmade oil painting. Given the framework of technological development of that time, Rembrandt would certainly have to do printing in etchings, maybe even aquatints, which was then being developed in the Netherlands (MoMA, 2008).

Concerning the issue of the primary colours fallacy, the next questions arise regarding the two presupposed hypothetical Rembrandts: Which primary colours would Rembrandt have to choose to get the identical result in both pictures of the diptych in terms of colour? Would these colours have to be the same? If not, why not?

Both for printers and painters, the question of primary colours was always concerned with the dilemma as to which pigments are actual material equivalents of primary colours. However, despite the fact that the interest of printers and painters in this matter appeared to be the same, primary colours fulfilled significantly different functions for each group.

A printer's aim is the complete colour prevision of an image and its infinite colour reproducibility; therefore, the printer must resolve two crucial problems regarding primary colours. Firstly, the function of printers' primaries must follow the strict axiomatic logic of colour mixing: as few as possible basic colours must intermix in all possible colour perceptions in an absolutely predictable and repeatable way. Secondly, material equivalents of such exact

primary colours must result in minimal *spectral defects*;[4] if not, the actual mixing of material pigments will not match the abstract axiomatic logic of colour mixing.

The first prints produced by J. C. Le Blon around 1738 show us that at the time the choice of pigments was based on RYB primaries. Pigments like Prussian blue and dark yellow lake were used, and for red a mixture of madder-lake, carmine and cinnabar. As it turned out, these pigments did not match the rigorousness of printers' primaries, for the printing result was rather poor (Gage, 1993, p. 162, 169, 216, 221-226). Of course, we know today that pigment equivalents of CMY primaries are needed to fulfil the function of printers' primaries, and not of RYB primaries. Thus, in his time, Rembrandt would have had no chance of making a colour print of the desired quality because the knowledge of exact printers' primaries was not properly developed until 19th century.

Therefore, the first educational lesson of the presupposed hypothetical Rembrandt is related to the issue of the function of printers' primary colours. While modelling the hypothetical Rembrandt, a student of art can learn that without exact primaries and corresponding pigments successful colour printing could not have been developed. Thus, for printers the discovery of the principles of colour mixing and of synthetic colour pigments in the 19th century, which enabled the materialisation of exact primaries, were of the outmost importance.

However, what about the educational lesson concerning the function of painters' primary colours? Obviously, Rembrandt painted successfully enough with the chosen range of pigments. A general historical review of painters' palettes enables reflection on which primary colours and paints he actually used (Gage, 1993, pp. 177-190). Rembrandt's palette is a typical Dutch *tonal palette* of the time, with paints ranging from white, orange-red, yellow-ochre, cinnabar red, several browns to several blacks (Gage, 1993, p. 178, 184, colour plate no. 145). There is almost no sign of blues, apart from some dark Prussian blue.

Obviously, Rembrandt's range of painting pigments was also equivalent to RYB primaries; however, in this case these pigments, which were inadequate

4 Because none of the material pigments can ever perfectly match the abstract exactness of primary colours, *spectral defects* occur when mixing primary pigments in practice. This means that in practice colour mixing of primaries does not result in colour mixtures (i.e., *secondary colours*) of the same intensity and saturation as should occur in theory. In theory—as is evident from colour wheels where secondary mixtures, like green, violet and orange, lie on the same circumference as primary colours—the intensity and saturation of primary and secondary colours should be the same.

for colour printing, did their job well. Why is this so? What makes the difference? The reason lies in differentiating between the goals of printers' and painters' primaries. In contrast to printers, the painter's goal is not the repeatable colour reproduction of an image, which must be multiplied infinitely, but a unique artwork that should not be repeated. Therefore, painters need not rely only on a limited and unchangeable range of primary colours, but can use a repertoire of all of those pigments that can help them achieve the desired effect. Because painters do not have to prevision the effect of a picture in terms of colour with the intention of reproducing it infinitely, they do need not to control the colour mixing process of pigments with axiomatic precision. Consequently, for a painter colour mixing is not a strictly formalised and absolutely controllable process, but instead an intuitive and unpredictable creative flow, where *spectral defects* – a printers' worst nightmare – are not deficiencies that have to be annulled but rather the desired source of a painting's unpredictability and uniqueness, which can give the painting the mystic charm of being born uncontrollably. Thus, painters do not need to rely on *exact* primaries but can get along with *approximate* primaries just fine.

Modelling hypothetical Rembrandt can thus make a student of art experience that while pigment equivalents of RYB primaries were useless for printing, since printing demands a limited and fixed range of pigments, they functioned just fine in painting, where one can rely on a changeable and variable range of pigments.

The educational relevance of the two constructed hypothetical artwork models can be summed up as follows. Because these two hypothetical artworks draw attention to the essential difference in printers' and painters' primary colours, they can make a student of art experience that when evaluating the correctness of artistic colour theories, such as the theories of Goethe, Itten, Kandinsky, Klee and Albers, one cannot follow a strict division into *theory* and *history of theory*, for if one does so one must reject as wrong artworks that are in themselves entirely correct. Because printers were, due to the economic requirement of reproducibility, always preoccupied with the axiomatic problem of deriving complete colour perception from as few paints as possible, for them the principles of colour mixing discovered by developing science were of the utmost importance. On the other hand, painters at the beginning of 20th century did not need to share such enthusiasm about the newly discovered CMY primaries; instead, they could legitimately hold on to RYB primaries, which had a special historical and experiential value for them. Whereas printers must axiomatically derive complete colour perception from as few paints as possible, since they have to achieve the same result in each colour print, painters can

adjust their pallets to the uniqueness of the painting they are creating. Consequently, also in painters' colour theories, which are rooted in painting practice and tradition, primary colours need not be fully subordinated to the axiomatic formalism of colour mixing, but should instead be seen more as practical approximations of colour mixing as an intuitive and rather unpredictable creative process. Thus, painters' primary colours should not be understood as axioms, but more as symbols—a kind of »holy trinity«—with the emphasis on their intense cultural significance (e.g., primary colours as a symbol of the Holy Trinity in Christianity), material significance (e.g., the different economic values of colour pigments; the spectral particularities of different colour pigments, etc.) and experiential significance (the different »moral« value of different colour pigments).

Conclusion: The Educational Value of Hypothetical (Art) Experience

By the use of *the method of hypothetical artwork modelling* with regard to the example of the *painters' primary colours fallacy* I have tried to demonstrate hypothetical art's explicatory abilities, which can also be put to good use in the process of art education. I see its crucial explicatory, and thus also educational, advantage in attracting the student of art to become fictionally involved in the process of hypothetical artwork creation, thus giving him or her more of an experiential understanding of the art theoretical problems that accompany the process of creation of a real artwork. The usage of hypothetical art in art education can consequently transform art theoretical learning into a kind of *experiential learning*, since it enables the student to develop *hypothetical experience*, which can activate personal involvement and lived experience. When such hypothetical experience is gained, a student can reflect on and learn about the considered art issue in a more reasonable and realistic manner. This, however, prevents student's knowledge from losing its way in the anomalies and theoretical chimaeras that usually arise due to a lack of concrete and personal experience of problem solving in reality.

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Biographical note

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The Field Trip as Part of Spatial (Architectural) Design Art Classes

Janja Batič[1]

Spatial (architectural) design is one of five fields introduced to pupils as part of art education. In planning architectural design tasks, one should take into consideration the particularities of the architectural design process and enable pupils to experience space and relationships within space through their own movement. Furthermore, pupils should have an opportunity to play the roles of (critical) users as well as co-creators or spatial planners. In this respect, the field trip plays a vital role, as it allows pupils to experience (architectural) space through their own movement, their senses and in a real environment. The architectural experience that the pupils gain differs from their everyday experience of moving through space, as the former is based on education and training, and thus helps pupils develop architecture appreciation.

Keywords: Architecture appreciation, Art education, Field trip, Spatial (architectural) design, Spatial experience

Introduction

Spatial (architectural) design is one of five art forms taught as part of elementary school art education. The scope of these art classes is to introduce pupils from the first grade onwards to basic architectural concepts. The pupils redesign space and make models, while becoming acquainted with the evaluation of various architectural spaces. They develop their sensitivity towards the way a space is arranged, with regard to both its utility and its artistic value. When planning art tasks in architectural design, one should start from the specific nature of the architectural design process, with regard to which experience gained by means of one's own movement through space is particularly important. Pupils can gain such experience on a short excursion or field trip.

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In the continuation, we describe some particularities of spatial (architectural) design as an art form and the role of movement through space with regard to the perception and understanding of space (natural space as well as constructed space) as a whole. We also highlight the significance of the field trip with respect to the planning and execution of spatial (architectural) design tasks, through which pupils can gain experience as well as exploring and experiencing architectural space with all of their senses.

Spatial (architectural) design in art education

In elementary school art classes, pupils are introduced to five art forms: drawing, painting, sculpting, graphics and spatial (architectural)[2] design, whereby the latter is distinguished from other art forms by its function. Architecture is considered to be functional art, as it confines space so that we can dwell in it, thus creating the framework around our lives. Even the most abstract sculpture, limited to purely geometric shapes, is not architecture, for it lacks utility (Rasmussen, 1959). Furthermore, architecture is unavoidable art, as it surrounds us on every step, shaping the way we feel and determining our mood (Roth, 1993). Whether we are inside buildings or outdoors, we are inseparable from space (Lawson, 2001).

Elementary school art classes are designed so that pupils can learn various concepts regarding spatial design. They can design architectural structures or models as well as developing and advancing their ability to observe space. Furthermore, they should become more conscious of environments that are well organised, develop a feeling for the sensible arrangement of spaces and nurture an ability to design spatial forms of their own invention. Pupils should also develop a critical attitude towards an uncontrolled environment, as well as a feeling for artistically designed architectural space (Učni načrt, 2004). Thus, pupils should gain knowhow and experience enabling them to evaluate the utility as well as the aesthetic value of architectural space with a critical eye. Architecture is basically intended for users; however, Lawson (2001) criticises architects for frequently being more interested in buildings than their users. He gives an interesting example to illustrate this, drawing attention to the fact that architectural magazines rarely show people, or the users of a particular space,

2 The curriculum defines this field rather broadly, as the scope of spatial design art classes to some extent also includes stage or film set design, theatre and theatrical plays, as well as the importance of cultural heritage and its preservation. However, the main goals remain focused on the architectural design process.

in the photographs reproduced on their pages. Rasmussen (1959) came to a similar conclusion much earlier, claiming that one proof of good architecture is when it is used as planned by the architect.

In art classes, pupils themselves take on the roles of (critical) users as well as co-creators or spatial planners/designers. As designers, they observe architecture in a familiar environment, suggest changes, make models based on their own ideas, etc. This means that, on an elementary level, pupils learn about the architectural design process. According to Ching (1996), problem recognition and the decision making involved in finding a solution are the first steps in any design process. The designer must first document the existing circumstances of the problem and define the context, as well as collecting and analysing any relevant data. Two prerequisites for recognising an architectural design problem are the perception and understanding of architectural space.

The Perception and understanding of (architectural) space

Perception is important in that it *informs* us about the properties of the environment that are *significant* for our survival, as well as building our attitude towards the environment (Goldstein, 2002). Pečjak (2006, p. 65) claims that a human being perceives space through four senses: sight, hearing, touch and the kinaesthetic sense, of which sight is the most important. According to Bonča (1994, p. 38), it is body movement[3] that enables us to acquire information on those segments of space that we cannot capture with one glance. Furthermore, it is movement that helps us to create some sort of network of spaces, in which different facilities appear in a certain relation and at definite distances as movement trajectories (Tomšič Čerkez & Zupančič, 2011, p. 25). With regard to perception, Rasmussen (1959) underlines the significance of experience. One needs to experience architecture, that is, observe the way a building has been designed for a particular purpose and walk through it, in order to gain a sense of the acoustic features of a particular room. Lawson (2001) claims that speed of movement plays an important role in reading an architectural object, as our experience changes depending on whether we walk slowly past a building or

3 Certain studies of the way children perceive space and spatial relations have highlighted the role of the individual's own movement in space, which helps children to develop a sense of spatial relations (such as: near, far, left, right, before, behind, etc.) in order to orient themselves and to develop accurate perception of space (cf. Hazen, Lockman & Pick, 1978; Reieser, Garing & Young, 1994).

drive by it. This is illustrated with the example of a pedestrian moving with a more or less constant speed. »The way buildings appear and move across our field of vision is largely dependent on this pace of life. As pedestrians we may walk directly past buildings, perhaps on the pavement of a street. In such circumstances we may not only be able to reach out and touch them, but also to feel their effects in a wide variety of ways. We might sense the change in temperature as they create shade or perhaps shield us from the wind; we may hear the sounds of the city reflected back off the walls; we may even smell the materials of the building or the preparation of food or other processes inside« (2001, p. 55). We do not only experience architecture through our eyes, we perceive space with our hearing as well. Blesser and Salter (2007) argue that we do not require any particular skills for this purpose. They claim (ibid.) that when blindfolded nearly all of us can approach a wall without touching it, simply by being attentive to how the wall changes the frequency balance of the background noise. Sound influences our perception of space even though we are not aware of it. For example, the acoustics of a grand cathedral can create an exalted mood, those of a chapel can enhance a feeling of privacy and quiet contemplation, those of an elevator can produce a feeling of encapsulation, whereas the acoustics of an open area can produce feelings of either freedom or insecurity (ibid.). Nevertheless, the perception of space and spatial relations with our eyes is completely different from the perception of space and spatial relations without visual experience.[4]

Norberg-Schulz (1997) compares the everyday experience of an individual to that of a tourist. Rushing to and from work every day, the buildings we pass create a relatively neutral background. Although this does not mean that these buildings are irrelevant, it does show that we limit ourselves to sensing

4 In her book *Na drugi strani vek* (a description of first-person phenomenological research on being blind), Aksinja Kermauner describes her perception of space while subjecting herself to self-imposed blindness (wearing a blindfold). She reports that initially she was completely confused and could not determine the shapes of the rooms. Later, she gained better control of space, although she had to be attentive to orientation points in order to be able to determine where she was at any given time. She drew the ground plan of the house she was living in on a positive film. At the end of the test, she removed the blindfold and compared the space she saw with her eyes with the space she had experienced earlier with her other senses. She discovered that her earlier perception was inadequate compared to the real physical space. The rooms felt considerably bigger when blindfolded and she could not determine the exact ground plan or the way the rooms were organised. There was something organic in the way they were arranged around her and she felt they were moving constantly, yet she did manage to come up with an approximate layout of the rooms (Kermauner, 2009, p. 48).

only some of their features. Butina calls this visual viewing and thinking, which he claims is spontaneous and non-reflected. For example, walking from the Ljubljana train station to Mestni trg we pass certain parts of the city that, in terms of architecture, reflect the cultural milieu of the time in which the buildings were built. In other words, we are on a journey through people's thinking and perception of the world and society in past eras, but we are not normally aware of this, instead noticing merely buildings, streets and traffic (1997, p. 137). However, our attitude changes as soon as we take part in an activity that directly concerns a building, e.g., when we view a building as a tourist. Norberg-Schulz says (ibid.) that we orient ourselves with regard to the situation, so our architectural experience is changing and versatile, even though the notion itself is rarely used in this sense. However, the notion of architectural experience is frequently used in the sense of experience that is not restricted to a single situation but refers to architecture as a whole, or to an entire cultural building or facility. In this case, our experience is based on the schema of searching for forms that we, as individuals, are accustomed to and that coincide with the fact that we tend to see only that which we expect to see. According to Smith (2003), our judgement of a new building is based on certain templates, and when a building deviates from these considerably we reject it and consider it a mistake. Norberg-Schulz (ibid.) labels these templates or schemata as prejudice, as we tend to apply them to architecture of a different time and space. Moreover, he says that most people easily define a building as either beautiful or ugly, which goes to show how superficial their perception is. Therefore, he believes that architectural experience should be based on education and experience, whereby the goal is to learn to see and thus understand the language of design and the meaning of forms. Considering the fact that architectural forms are essential components in our milieu, learning about architecture and its evaluation (i.e., appreciation of architecture) should be made part of elementary school education (Norberg-Schulz, 1997).

Furthermore, this has been included in the elementary school curriculum (Učni načrt, 2004) together with cognitive goals (e.g., learning about architectural concepts) and affective goals (such as imparting a sense of function and aesthetics with regard to form, raising awareness of the use of natural construction materials, developing a sense of artistically designed architectural space, and developing a feeling for balance of mass and for harmony of material, colour and surface). Betty Oliver Seabolt (2001) claims that only once both cognitive and affective goals have been achieved can we arrive at art appreciation that is the result of the entire process, signifying that one understands and enjoys art. Duh (2004) notes that artistic expression and art appreciation play

an equally important role. Furthermore, he establishes (ibid., p. 44) that while Slovenian children of all ages are encouraged through institutionalised education to freely express themselves artistically, there is little attention dedicated to art appreciation. The two are not, however, directly connected, as, according to Barrett (2007), making something does not necessarily imply appreciation of the result: if artmaking results in a negative experience this might be reflected in a negative response, yet when the experience is positive this does not necessarily secure the pupil's appreciation. Appreciation is a complex act of recognition; full appreciation involves engagement with the artwork in a way that comprises not only knowledge of various sorts but also emotion that informs knowledge (Barrett, 2007 quoting Scheffler, 1991). Art education in elementary school, as well as in the preschool[5] period, should include art appreciation in addition to artistic expression.

Planning art classes that incorporate perception, understanding and appreciation of architectural space requires the use of various teaching methods and forms, the most prominent being those that enable perception and understanding of space and spatial relations through the individual's own movement. One possibility is to organise a field trip, which, according to Babić (1978), enables pupils to perceive things that they have only been able to see as reproductions in the classroom in a real-time environment. This is particularly relevant with regard to architecture, which can be experienced much better on a field trip than through viewing photographs.

The field trip in spatial (architectural) design

Perceiving space through one's own movement is something completely different from viewing photographs or videos in class. We can enable pupils to have such an experience by organising a didactic field trip during which they can perceive objects in their natural environment and with their natural connections (Cencič & Cencič, 2002, p. 131). This makes the whole thing more explicit, which, according to Strmčnik, involves the active perception of the world through all sensory channels, including the kinaesthetic sense, which tends to be neglected (2003, p. 192). The author also notes that when straightforward reality is slighted it is more difficult for pupils to fathom it rationally and in terms

5 Epstein and Trimis (2002, quoted in Eckhoff, 2008) caution that preschool teachers should be familiar with terminology as well as with strategies to incorporate art appreciation activities, as this is the necessary first step to sharing the experience of art appreciation in the preschool period.

of its value, as they are unable to observe its natural relations and connections with the environment (ibid., p. 194). The objectives and value of gaining knowledge outside the classroom are: active learning outdoors, motivating pupils with new and enjoyable experiences, developing their research skills as well as their skills of observation, taking notes, *in situ* analysis, gaining knowledge and understanding with regard to »real world« context, developing sensitivity to the environment, etc. (Catling, 2010). Research on the effect of field trips in natural science subjects points to an important advantage; namely, students tend to retain the knowledge acquired on a field trip (cf. Morrell, 2003). Educational field trips enable pupils to gain new experience and make them more aware of the world in which they live (Nabors, Edwards & Murray, 2009).

Some less recent authors have dealt with the classification of educational excursions. Šilih (1961), for example, classified them into *educational walks* (the objective of these is normally a specific problem and they are frequently used in elementary and secondary schools), *field trips* (which normally last one school day and incorporate intersubject connections), and *school journeys* (more complex excursions that last several days). On the other hand, Babić (1978) distinguishes between *nomadic excursions* (shorter visits of a single location, perhaps resulting in superficial observation) and *stationary excursions* (bound to a certain location), noting that of all of the fields of art it is architecture that can only be experienced fully through a field trip.

On the other hand, Izumi Taylor, Gunn Morris and Coureau-Young (1997) specify short walks that are appropriate for younger children:

- Within the school building. Pupils might visit the head teacher's office, the kitchen, etc.
- Outside the building. Pupils might view the school building on the outside and the adjacent buildings.
- Walks through the school site. Pupils view the buildings in the school's vicinity that have different purposes (e.g., hospital, shop, petrol station).

An educational walk through the school building as part of architectural design classes enables pupils to have a look at different school areas (classrooms, studies, hallways, staircases, etc.) or to observe the school site and the buildings in its vicinity. According to Milena Ivanuš Grmek, a school yard may function as a space that completes other school facilities, contributing to the realisation of school goals, in particular those related to the culture of living and dwelling (2003, p. 328).

The space with which pupils are familiar represents the basis. Beatriz Tomšič Čerkez notes that raising awareness with regard to the values of space in

light of sustainable development must begin in pupils' and students' home places, which they have come to know through their everyday experience (2007, p. 29).

The purpose of an educational walk in spatial (architectural) design art classes is for pupils to experience space through their own movement, to asses the utility of individual areas as well as their aesthetics. Such a walk might also serve as the basis for solving art assignments in architectural (spatial) design. Thus, pupils can identify a certain architectural (spatial) problem just by moving through space on their own, and subsequently suggest improvements.[6] In this case, pupils take part actively in the creation of an art assignment, as the assignment itself is based on a problem that they have sensed themselves in a certain situation as users of architectural space. However, an educational walk may also serve as an introduction to a task with a more complex scope, its objective being the redevelopment of pupils' sensitivity towards space and spatial relations, identifying different architectural elements and similar.[7] The goal of an educational walk in spatial (architectural) design is for pupils to gain their own experience by means of moving through either a familiar space or an unfamiliar space indoors or outdoors, whereby they perceive and experience space through all of their senses. The planning and execution of spatial (architectural) design classes based on the pupils' own experience results in their improved appreciation of the architectural milieu (cf. Hickman, 2001).

6 The experience pupils gain during an educational walk might be reflected in their work. Action research we have conducted with fifth graders (elementary school) proves this point. The pupils were taken on a walk during which they photographed those parts of the school building and its vicinity that they disliked. Subsequently, they showcased their ideas in redesigned photographs. When later given a new assignment and a new problem, the pupils incorporated some details from the redesigned photographs onto the new sketches and models presenting their solutions (cf. Batič, 2010).

7 A case study involving two classes of first-graders (elementary school) and their teachers proves this point. The objective of this research was to highlight which art activities are suitable for including spatial (architectural) design topics, and to determine how these can be incorporated in the artmaking of six-year-olds. We planned and executed a thematic cluster (architectural space) in which pupils were able to experience a known spatial actively by moving through it, observing it, and finally, transposing their experiences into a drawing. As part of sculpting, the pupils engaged with rhythm, which is a compositional element that pupils normally tend to feel very strongly within architectural space (repetition of windows, balconies, etc.). In graphics, architectural space appeared as a part of a motif, representing a kind of scene for the happening, while painting in oil pastels onto black and white photographs was used for planning the changes to be made in the familiar environment. Finally, pupils made a model of a school of the future from floral foam, corrugated cardboard, and sticks (cf. Batič & Herzog, 2009)

Organisation of a field trip, teaching methods and aids

Regardless of whether the planned field trip is a short educational walk or an extensive excursion, it should be organised and executed properly. Each field trip should have clearly defined goals, objectives and a plan of execution (Roca, 1979). Furthermore, the field trip should ensure that pupils learn from the experience. Andrea Sabatini McLoughlin (2004) cautions that younger teachers often focus on the execution of a field trip, that is, how to bring pupils from one location to another, thus neglecting the planning of the activities to be undertaken before, during and after the field trip. According to Roca (1979), regardless of the length of the field trip an art teacher is expected to study the conditions, decide on the content and ensure the necessary aids, all in order to ensure that lessons outside the classroom will not be conducted in a disorganised or unbridled manner.

The use of aids on a field trip depends on the approach chosen by the teacher. Kimber and Smith (1999, quoted by Catling, 2010) identify five options: research activity in a preselected space (e.g., pupils observe a specific object such as an exhibit piece at a museum), research activity based on inquiry, problem solving (e.g., pupils find a 'problematic' area and search for ways to improve it), enacting (pupils use role playing to illustrate how people live/d in a different place/time), a guided walk (teachers choose a specific route for pupils, along which they are exposed to particularities that they should observe and note down on their worksheets). As part of spatial (architectural) design classes, pupils can (depending on the curriculum goals for each class) research the equipment and its arrangement in class or other facilities (school cafeteria, gymnasium, locker room, etc.) from the point of view of utility and artistic arrangement, and they can also discover special features outdoors (playground, school yard, parking area). Some teaching aids pupils might use are ready-made worksheets, pens and drawing tools. We can encourage pupils' observation by composing a worksheet that includes photographed details of individual architectural elements; their task is to locate those details on the actual buildings. This is to ensure that pupils' attention is focused on a specific element, while at the same time stimulating their interest and their drive for discovery. Another aid pupils might use during such an educational walk is a camera, enabling them to take photographs of certain views or details (depending on the art assignment). Although this might have been a problem in the past, pupils nowadays frequently have mobile phones that can take photographs or shoot short videos.

A didactic field trip is closely associated with the demonstration method[8] as well as observation (Roca, 1979). According to Kramar, this method is about realising the principle of explicitness through the logical intertwining of sensory perceptions with mental and physical (psycho-motoric) activities (2003, p. 368). During a field trip, pupils observe, learn about and experience architecture, combining their sensory perception with reason. Strmčnik (2003) claims that we use our senses to fathom that which we see, while our reason and logic enable us to comprehend in-depth relations. Both are then merged in a single cognitive process.

According to Tacol, the demonstration method is successful when combined with the methods of discussion and explanation (2003, p. 100). It is for this reason that when organising a field trip one needs to prepare a special form of the discussion method with which we encourage pupils to consider purpose, arrangement, forms, colours, and materials. The term used in books is *»art investigation methodology«*.[9] Rebecca Shulman Herz (2010) describes the use of this particular method as follows: prior to viewing artworks, the teacher prepares three to five open-form questions, the objective of which is to stimulate, firstly, pupils' observation and, secondly, their interpretation. Furthermore, the teacher encourages pupils to search for connections between an artwork and their personal lives and experiences from other spheres of life. Pupils should have enough time to answer the questions, while the teacher should encourage them to provide arguments for their thoughts. Moreover, the teacher is expected to provide information on the observed artwork at critical points of the discussion, thus enabling a better understanding of the artwork concerned. Such investigation and discussion will lead to pupils developing their own thoughts and producing ideas and interpretations the teacher cannot foresee in advance (ibid., 2010). Architectural design as part of art education is about pupils

8 Various authors have used several names for this: the illustration and demonstration method (Filipović, 1988), where illustration refers to showing objects, drawings, paintings, etc. and demonstration refers to dynamic reality; the illustrative and demonstration method (Tomić, 2003); the representation method (Kramar, 2003); depiction (the demonstration method) (Tacol, 2003); the method of demonstrating (Duh & Vrlič, 2003), etc.

9 This method is used in class but originates from museum pedagogy and is based on research and partly on constructivism. The acquired knowledge is the intersection of what pupils already know and the newly acquired ideas and knowledge. For art teachers, this means that they can offer their pupils a chance to connect their ideas and knowledge to the art activities they have previously undertaken, thus creating new meaning. The above method (»The Guggenheim Museum's Art Investigation Methodology«) is one example of such an approach (Shulman Herz, 2010).

discovering the architectural space by investigating purpose and utility, form, size, artistic arrangement, interior and exterior furniture, etc. The teacher must create the conditions for the individual to be able to express his or her views and judgements and to develop his or her sensitivity with regard to the perception and understanding of aesthetic messages. The latter may be realised by two specific methods used in art education: the method of aesthetic cultivation and the method of expansion and elaboration of art sensitivity, both of which derive from the specific nature of aesthetic communication (Karlavaris, 1987).

Conclusion

Modern technology with the World Wide Web has flooded classrooms with images, photographs of artworks, video clips and virtual galleries. However, that which it foregrounds is merely a substitute for reality. A photograph or video, no matter how good it might be, only carries information on the appearance of, for example, a building. We cannot walk through it, touch it, check the acoustics, make judgements on its utility, etc. Yet even a short field trip can enable all of these. Pupils can gain their own experience of architectural space, which can later serve as a basis for planning a spatial (architectural) design task. Thus, the art problem derives from real experience and the pupils take part in the co-creation of the architectural design task.

When combined with certain general or specific methods, the spatial (architectural) design field trip may prompt the perception, experience and evaluation of architectural space, all of which contribute to the development of pupils' appreciation of architecture, also enabling their knowledge to be complemented with emotions. Thus, instead of being the result of prejudices or acquired schemas, a pupil's architectural experience can derive from training and education.

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Biographical note

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Education as a Factor of Intercultural Communication

Grozdanka Gojkov[1]

The paper considers alternative constructivism as a possibility of theoretical starting point regarding education as a factor of intercultural communication. The introductory part of the paper deals with Kelly's personal construct theory permeating the arguments in favour of the theoretical research thesis referring to the issue of the extent the pluralism of European culture space interferes with national culture through education. Furthermore, the paper considers the way pedagogy has been searching for more comprehensive self-observation, self-reflection and self-determination on its way to self-change in order to ensure freedom of personal action according to contemporary philosophical discussions. The importance of education as a factor of intercultural communication has been supported by the outcomes of an explorative empirical research, which is an element bonding all the reflections in the text. Finally, the key competences for intercultural communication have been stated in the paper.

Keywords: Education, Intercultural communication, Pedagogy

Introduction

Constructivist approaches within contemporary theoretical pluralism have brought about new approaches to the explication and understanding of processes and phenomena in both the individual and social functioning of the individual. The changed perception of man, the different approach to the development and possibility to educate human potential, has strongly influenced the field of education, opening new perspectives for reflection. The concepts of development and education of an individual have in this sense taken increasingly more space; in accordance with the acceptance of the »challenge model« the

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concept of competence has been created, estimated by contemporary authors as a notion that in the best way sublimes the model of human functioning, based on developmental theoretical directions. The adoption of the concept is based on its insistence on the link between personal development and the features and meanings of social discourse, and it is grounded in a developmental-humanistic, mutual and responsible relation individual-community. Education has a special role to play in the concept, having in mind the encouragement of the development of human potential to acquire competences as the general ability of an individual. Competence is understood in contemporary pedagogical approaches as a complex of potentials, the developmental capacity of an individual who can be educated and leads to the successful achievement of one's own aims, needs and roles in various fields of social and professional life, as well as to interpersonal and satisfactory communication with others. For pedagogy and education the latter is especially important since it is considered that European integration will have stronger support if full attention is paid to the acquisition of competences whose key attributes are considered to be the following: the power of analytic thinking, team work skills, independence, professionalism followed by self-initiative, as well as **intercultural communication competence.**

The literature offers numerous concepts of competences; what has, among others, frequently been stated is Richter's understanding of the concept of competence (Gojkov & Stojanović, 2009), taking into consideration a person and influencing his/her self-reflection and self-determination. In this sense, the attitude towards a learner in education has changed significantly. A learner is no longer in a position to apply the learned, the specific and what is adaptable to a situation; he/she is rather in a position:

- to change what he/she has learned according to his/her own needs,
- to integrate new alternative ways of action into the system,
- to choose between more alternatives, in order to behave properly,
- to connect new learnt abilities with other abilities,
- to broaden his/her own repertoire of behaviour and displace it from that which is in itself grounded synergy to others, i.e., to expand the alternatives of his/her behaviour by linking previous abilities and those newly acquired.

Education as a Factor of Intercultural Communication

We will now turn to education as a factor that could - through the promotion of a shared civil culture grounded on the human, through the encouragement of the mutual respect of the cultures of others, as well as through the

acknowledgement of the collective rights of all nations as equally valuable - make a significant step towards the ability of an individual to better understand all of the increasing complexity and changes occurring around him/her. This could further make a contribution to the struggle against the feeling of insecurity arising out of everything that has been mentioned. The first step is the acquisition of adequate knowledge, followed by its articulation in the temporal perspective, along with a constant critical approach. Consequently, education is a reference point that can help an individual to become a citizen of a changing Europe, bearing in mind that the purpose of education is not for an individual to develop features making him/her similar to others, but rather to provide him/her with abilities to valorise his/her existence and achieve the expression of his/her own features. Another question arises here regarding the extent to which the processes of mobility of people and ideas, the appearance of new information and communication technologies, have created new circumstances »making it difficult« for an individual »to grow up and mature«, bringing about an identity crisis with the consequence that people are now inclined to more readily emphasise the identity of a community grounded on ethnic values, nation, religion and territory.

What is today pointed out in common resolutions, conclusions and other documents issued by the bodies of the European Union is that education has a more emphasised critical responsibility to transfer values to young people and help them make not only wise but humane and moral decisions. As a consequence, young people have to be provided with possibilities to build a system of values appropriate to these aims, characterised by altruism, empathy and human understanding, to develop self-respect and an ability to love, to be trained to plan and anticipate the consequences of their own decisions and actions, implying tolerance, listening skills, problem solving skills, an ability to perceive the sense in everything we do, in what is going on around us. Also worth mentioning are the skills of taking responsibility and initiative, as well as many other characteristics implied by team work. On a practical level this means that young people can be involved in team work, demanding creativity and individual contributions to qualitative results (often even in *ad hoc* teams). To what extent are these qualities developed in individuals and how much attention is paid to them? Can individuals with an expressed inclination towards the development of knowledge with the promise of practical use neglect their own needs and turn to the needs and interests of others? To what extent is moral competence inevitably implied by teaching content nurtured and promoted? How much attention is paid to mastering successful social integration? How much do we care for the competences permeating free decision making on when and how we should take mature steps?

We should now for a moment focus on the findings of an explorative empirical research project[2] attempting to consider the extent to which purpose, a life ideal, is manifested as an expression of giftedness, a mature manifestation of intrapersonal intelligence (an inner control system, a compass) and orientation according to which a gifted individual guides him/herself, self-regulates his/her engagement in culturally valuable activities. Furthermore, a relation has been considered between purpose assessment and the meaning of life as one of the values in the structure of values and achievements of the gifted, with the assumption that the gifted have more expressed orientation in the sense of the purpose of their engagement, as well as a stronger self-understanding, a more consistent self-image, as a critical ability leading to both greater academic achievements and the overall contribution to the society in which they live. The research was undertaken on a sample of 96 MENSA members in Vojvodina, and the basic finding refers to the following.

As an ideal, purpose is conceptualised in the case of the gifted as a manifestation, a regulator (a guide) and an inner moral compass significantly correlating with achievements, as well as with an inclination to make a greater contribution to their social setting and a self-orientation towards positive aspirations. Why do I consider this worth mentioning here? The relevant literature considers the purpose of life to be a moral value, i.e., a special giftedness in intrapersonal intelligence. In other words, purpose is an inner moral compass, a stable and general intention to do something considered essential for the personality, having consequences that go beyond the personal context (Damon et al., 2003). Some authors have also emphasised that purpose is a question of getting to know oneself as well as one's own place in the world, which is very important as a regulator, i.e., it facilitates self-regulation of the way a person is engaged in culturally valuable activities (Zimmerman, 2008), emphasising that the value of this feature of intellectual maturity is above the personality itself (Gestottir & Lerner, 2007). This is relevant to the research undertaken, bearing in mind that the assumption has established a connection between two sides of giftedness, i.e., the moral and the intellectual, which each in its own way has been of great interest and has found a place in the considerations of the interactivity of these processes in the gifted. The starting point of the research was the definition of purpose, whose main characteristics imply that purpose

2 See: Grozdanka Gojkov and Aleksandar Stojanović (2010), *Svrha u strukturi vrednosti darovitih u Srbiji kao kritička sposobnost i moralni vodič [Purpose in Value Structure of the Gifted as Critical Ability and Inner Moral Guide]*, Socijalne in čuvstvene potrebe nadarjenih in talentiranih, Zbornik II. mednarodna znanstvena konferenca, MIB, 2010. Bled.

is an inner compass involving engagement in activities influencing other people, as well as self-awareness and intention, a readiness to take further steps in this direction. It seems important to note that purpose is viewed by many authors as intention in the sense of a psychological cybernetic control system (Marken, 1990), managing behaviour in the sense of control ranging from extrinsic stimulations to intrinsic hints (Kerpelman, 2001), giving clear direction and guiding behaviour.

Attempting to define the notion of purpose, many authors consider it significant to emphasise that we are talking about a special ability that, like other forms of giftedness, has been equated with expert level achievement rather than being in accordance with prescribed norms (Bloom, 1985; Feldman, 1986); therefore, it has been defined as extraordinary or early achievement. In other words, many authors apply both of the characteristics that are typical features of the gifted to purpose as well, broadening the space of giftedness beyond the field of academic achievement to outstanding achievements in the fields of leadership and morality (Morgan & Gardner, 2006). This is an additional argument in favour of the recent theories of giftedness that, when considering abilities, put stress on the importance of the way individuals use their abilities in constructive social purposes (Renzulli, 2002); this is important for the matter we are dealing with in the present paper, bearing in mind that it casts more light on the field of morality, which can be significant for the promotion of intercultural communications.

The question permeating the research refers to the following: **to what extent in the case of the gifted in Serbia is purpose, i.e., the meaning of life, manifested?**

Purpose, i.e., the meaning of life, grounded in the multiple intelligence theory and the purpose theory, as one aspect of moral giftedness, has been operationalised according to the dimensions adopted by Seana Moran. Consequently, sense, i.e., purpose, is considered through the issue of an awareness of what sense belongs to, through the value structure that is fundamental to meaning, and to what extent sense, i.e., purpose, has been built into intentions, activities and pro-social judgement. This covers the following questions:

- On what do gifted persons in Serbia place ethical focus, i.e., ethical sensibility?
- Can they be classified as moral experts due to their understanding of the moral social situation, and if so to what extent?
- To what extent do they understand the importance of living a moral life?

Bearing in mind that the research searched for giftedness expressed in intrapersonal intelligence, i.e., for purpose as an inner moral compass, which has in numerous studies revealed itself as an indicator of intrapersonal intelligence, several basic findings point to the fact that this feature is present in a lower number of MENSA members in Serbia. Descriptive analysis of life meaning has shown that the life meaning of the subjects consists of the following values: personal development, a happy life, family, enjoying one's life, making **a positive mark in life (doing something that lasts permanently for the benefit of the world in which the person lives), love in its broadest sense,** self-respect, dedication to work, health and friends.

A relatively low percentage of the gifted (27.6%) stated values that open up possibilities for progress on both a personal level and the level of humanity. At this point, these have been classified as subjects having a pronounced sense of self-understanding, a significant purpose dimension. It should be noted here that along with the statement that the obtained number of subjects with the expressed features of moral giftedness is small, it should be borne in mind that we are dealing with an exceptionally selected sample, expected to offer the presence of this form of giftedness to a higher degree. When talking about a descriptive analysis of the field in which the subjects have achieved the most, they were classified into the following categories: science, art, personal education, interpersonal relations, education of others and emotional plan, which could be another indicator of purpose, i.e., grasping the meaning of life in the activities determining the accepted definition of purpose, the meaning of life. Furthermore, they are an indicator of the existence of not only pro-social thinking, but also engagement in the activities that can be in accordance with the operationalisation of purpose accepted in this paper. Finally, they are a confirmation of the assumption of the existence of a moral compass. In other words, the existence of this connection is a confirmation of the thesis on the existence of highly expressed intrapersonal intelligence in the case of every other subject, i.e., subjects with a self-organised life aim overcoming their own personality. However, this is not a finding that could seem satisfactory from the perspective of the theme we are dealing with, bearing in mind that what is generally expected from highly capable individuals is better understanding, early manifested mature interpersonal intelligence (the inner control system, the compass), as well as an orientation guiding gifted individuals, the ability to self-regulate their own engagement in culturally valuable activities, self-understanding as a critical ability leading to higher academic achievements and contributing to the society in which the individuals live, with a strongly expressed awareness of how they have found a way to integrate something personal and significant into

their vision of tomorrow and the activities available to them. The individuality of these purposes is not such that we could conclude that the subjects would in greater number guide themselves more efficiently than others towards positive aspirations for others. It does not seem likely that if we compared these findings with the findings of the non-selected sample in the sense of high intellectual potentials, and if we checked the varying ethical giftedness in regard to age, we would gain the same findings that we obtained in this analysis. As a consequence, the conclusion might be reached that in the race for contemporary educational competences value orientation has been lost. Although the findings of the research outlined above are in a sense not connected with intercultural communication, it is important to reflect on the question as to how and to what extent it is possible to develop intercultural communication in the case of people who are absorbed only by the cognitive sphere and whose development of moral values is only implicitly involved. The world scene has already been threatened by communication dominated by individualism and this has been felt as a liability in the efforts insisting on group communication competencies. It seems that the stated outcomes - in spite of the fact that we are dealing with the results of explorative research on an intended sample including a highly selected population expected to have more expressed moral maturity and a value system with higher pro-social orientation - can be significant for the issue we are dealing with in the present paper. It would be good to keep these outcomes in the mind as we proceed through the text.

Intercultural Communication Competencies

The attitudes found in the literature regarding cultures, i.e., intercultural dialogues, are significant for reflection on intercultural communication. Many authors, including Avramović (2007) and Fayerstein, consider that culture shapes individual and collective lives in mysterious ways; it offers sense and meaning to life, shaping relations towards nature, man, the world, etc. Symbols are created and adopted according to culture, along with their explications and attitudes towards norms, enabling a person to interpret reality and project models of thinking and behaviour. Furthermore, the national form of culture is to be recognised in all of this. However, the national understanding of culture is not as simple as it may seem at first sight. Difficulties and dilemmas appear in any individual cultural shaping, due to the fact that the individual encouragement of personal development is inseparable from universal cultural meanings. All cultures have the same cultural phenomena (family, religious systems, artistic forms, etc.), but they are differently shaped and expressed.

The inevitable link between a national and universal culture is not the only obstacle to those who have difficulties in accepting existing differences. Consequently, the differences within one culture (thinking styles, sub-cultures, etc.) are felt as a counterbalance to similarities within one culture (language, customs, beliefs, knowledge, etc., considered to be a continuum created for centuries). Many authors have expressed fear that these differences might lead to a distancing from national cultural identity acknowledgement. In spite of the fact that they are ready to see that in the admiration of one's own culture we fail to notice the great tension between what has been shaped by cultural tradition and what has been taken from other cultures, the question of openness of one culture towards others remains unanswered through the spread of cultural elements and the realisation of cultural encounters. The answer to the question has been sought in multiculturalism, i.e., interculturalism. Contemporary views on the turmoil in the cultures of small nations and their attitudes towards greater cultures suggest that they should now be called cultural pluralism, interculturalism, etc., thus only renaming the old phenomenon of cultural encounters and the spread of cultural values. Contacts between cultures are unstoppable. Educational programmes are only one of the channels of linking cultures. According to numerous authors in the field, while construing one's own I, an individual is free to choose how much he/she will take from the multicultural and how much from national culture while creating his/her spiritual portrait. Not even an escape to national culture can erase the clues and traces of the meanings and symbols of other nations gained in the family and school.

These issues have become a part of the discussions on curriculum design for various levels of educations. Questions regarding the limits of freedom of choice of cultural values of others have been discussed, as well as where the line is regarding multiculturalism, i.e., what is a reasonable extent to which another culture should participate in a national culture. Consensus has not yet been reached. According to many, the task of our cultural politics is, among other things, to make efforts in the preservation of national cultural identity. However, this aim is faced with the everyday spiritual obstructions of culture, i.e., the cultural dynamics in whose centre a clash has arisen between what culture has created and what it is becoming. According to the opinions of the advocates of this standpoint, the culture of the *other* is involved in this clash. In other words, no state politics has the mechanisms to draw a line between redundant and optimal multiculturalism in a national culture. Some other questions have also been raised: whether and why this is necessary or rational, and even whether it is possible. Numerous authors hold that given that every culture has historically built and shaped a language of meanings and a way of perceiving facts, giving

meanings to the generations who in such a language and way of thinking can find answers to the secrets of existence, coexistence permeated with multiculturalism can also guide the spiritual power of an individual.

Some authors (Avramović, 2003) view this as a form of open culture, which in a way is both close to and far away from another culture. Searching for a new cultural perspective, foreign culture is, as a rule, a stimulus for new searches for similarities and differences in comparison to domestic culture. The literature offers the standpoint that the danger of eclecticism, as well as the threat to national cultural identity, can only be an excuse for incorrect political orientations, rather than real grounds for fear. State preservation of national cultures or political protection of cultural individuality is not something directly related to multiculturalism. On the contrary, the fictive fear of loss of cultural identity can, on certain levels of individual development, result in an escape into tradition and the creation of an imaginary structure of cultural awareness (Avramović, 2003).

It seems that in the culture of Serbia the relation of personal and group identity towards multiculturalism differs depending on the region, the historical past, i.e., the historical and diachronic determination of personality and, in the view of Kelly and the constructivists, only in regard to the approach *here* and *now.*

In the literature one can find Kelly's standpoints (Stojnov, 2003) that a personality can be better understood if it is viewed in the perspective of ages, rather than in the sparkle of passing moments. This moves us further towards those authors who hold that the relation between multicultural and national can be considered as two poles of culture, as seen by Avramovic. Consequently, the issues of their relation have always been relevant, but they have been explicated in various ways. So, it seems that we could accept that the current issue will always be a matter of choice between the cultural politics of a state, an individual and a creative group. What is interesting for the present paper is the perspective of education as a factor of the multicultural communication of an individual, his/her determination in relation to the cultural heritage of his/her own people and other nations.

Alternative constructivism (Kelly's psychology of personal constructs) could be a suitable theoretical framework for the theme of education as a factor of intercultural communications, advocating a historical and diachronic understanding of personality as a never-ending flow, constant change, carrying from the gnoseological perspective a certain amount of contradiction, bearing in mind that it is at the same time a form of rationalism, considering that people construe through reasonable categories, as well as a type of empiricism, since

each construction, no matter how rational it might be, has to be validated in behaviour. The validation is not aimed at confirming whether a construction is truthful or not, but whether it is useful, classifying the theory of personal constructs into the group of pragmatic ones, directing the cultural determination of a person towards diachronic understanding – rather than understanding the here and now.

The ontological status of Kelly's theory of personal constructs is determined by monism, i.e., understanding that the ultimate factor of the world is the one and only. What the world is made of can be construed in a variety of ways, making the position pluralistic. His efforts to determine the psychology of personal constructs ontologically shows an inclination to confront it with realism, i.e., to express disbelief of a great number of his advocates in the existence of one external reality beyond the knowledge and thought of men. Namely, people themselves construe their own versions of reality and behave as if they were »real«, with each person construing his/her own alternative constructions. We can conclude that in his theory Kelly has postulated an outer reality, i.e., culture. From the perspective of the cultural determination of a person we would say that culture is one phenomenon, something that is going on and that we understand, thus anticipating it. Therefore, the psychology of personal constructs is interested in anticipations, i.e., constructs of people, not in material objects existing independently of their experience. Knowledge of culture is not limited by the inherent qualities of culture itself (European or national), and it is not beyond the act of knowing itself, but it is limited by the imaginative capacity of the human mind; thus the limitations of the reaches of all knowledge up to now are implicitly emphasised, since everything is subjected to replacement and revision. Kelly did not deny the existence of the world beyond the experience of people, but he, according to Stojnov, just like Niche, considered that such a world existed in a completely undetermined way. According to Kelly, the world cannot be known beyond the limitations of people's experience, outside a referent frame that serves to enable people know the world. And all of this, as an attempt to provide argumentation for the frame of the thesis permeating the text, refers to the issue of education as an intercultural factor, with the culture striving to become Europeanised itself through the Europeanisation of education. It also refers to the extent to which the pluralism of the cultural European space is involved in national culture through education, leading to a pluralism that today increasingly turns to issues of values disputing the legitimacy of tradition. At first sight, distant elements like culture - or educational content in the broadest sense in contemporary views on personality, touched through a brief outline of Kelly's alternative constructivism in order to create a context for getting closer

to pluralism as a contemporary feature of European didactics - have found their place in the chain of elements closing the circle of postmodern didactics. In didactics, postmodern thinking emphasises a call for adjustment to a pluralism of life styles, i.e., cognitive functioning, meaning a need for didactics to search for individuality rather than identity. Beyond all of this we could consider the aspirations towards interculturalism as a pluralistic educational context. Numerous authors find the argumentation for this in one of the accents of postmodernism in pedagogy, even in didactics. This is derived from the Berlin pedagogic circle, the so-called reflexive relation of theory on education towards education itself – practice. The new definition of this relation (between theory and practice) as a significant feature has a standpoint according to which educational science is no longer a science of action (it does not prescribe, it does not give suggestions as to what should be done). Another angle is offered by the Hamburg pedagogue H. Pojkert and deals with the normative consequences of pedagogical interaction. Within this framework, pedagogy is searching for ways of more comprehensive self-perception and morally-reflected self-guidance and self-changes in order to ensure the freedom of a person's actions. All of this, under the influence of contemporary philosophical discussions, has made it possible for pedagogy to abandon the scene of so-called »closed didactics« and to embrace »open didactics«, formed according to Habermas's model of interests, within the phenomenological-anthropological, even holistic, tradition of thought that is open towards unstable forms of practise, ideas and cases, giving more freedom and competencies to the teacher and emphasising the individuality of the student and his/her capability for social action.

It seems that theoretical pluralism and anarchistic epistemology can well serve as grounds for understanding the needs for the diachronic cultural determination of a personality in European integration. As a consequence, open emancipatory pedagogy is turned to the student, with phenomenological approaches making it difficult for general structure and pedagogical elements to function, bearing in mind that, turned to the student, they have a personal note, practical-interactive, social-emancipatory, etc. It is considered that the essence of pedagogy lies in striving for creating the points enabling a student to guide »co-determined« learning, self-responsible and co-responsible action. Literature points to the fact that emancipatory pedagogy anticipates the tendency towards the relativisation of content, i.e., the open curriculum underlined by clear tones of anarchistic epistemology. Kelly talks about and the avoidance of dogmatism of method and theory, dogmatism of education of the rational term of rationalistic method, as well as thinking principles subjected to change. Based on Popper's philosophical orientation, as well as Feyerabend's

attitude, beyond all of these standpoints it can be recognised that there are ways to create different paradigms, bans, pre-formulations, etc., in different cultures. This is the point where we could get closer to the current issue for which the matter of the emphasis on context seems to be very important. Context awareness, i.e., education as a factor of intercultural communication, anticipates the world in which young people live in a time of the Internet and other forms of telecommunications that know no limits, barriers, bans. Changes, permeations, are inevitable and unstoppable. Furthermore, as has been emphasised by numerous authors, these changes should be viewed from an enriching perspective, i.e., from the perspective of possibilities to form competences through education that contribute to the creation of competencies for intercultural communication.

The understanding of competencies in the text thus far has, as a construct, its essence in the complexity of individual-social relations, based on various abilities and characteristics conditioned by numerous factors and manifested in various levels of individual and social human functioning. In a less complicated manner, competency could be determined as a capacity for the successful achievement of an individual in the social world. This capacity is based on a set of dispositional features, verbally and socially construed meanings, thus representing a whole that is something more than their simple sum. The quality and extent to which the aforementioned features will be developed are conditioned by the dynamic actions of individual-social interactions and their feedback effects. Competency of the individual is therefore considered to be not only an individual feature but an interpersonal and social feature. Capacity for individual competence, as it is nowadays considered by numerous authors, develops throughout one's life, and does not refer solely to personal advancement and happiness. Thus it is seen as a relational category, gaining its full meaning, form and measure of successfulness in interaction with other people and the level of quality of their progress.

The previous view on the construct of competency is indisputably based on cognitive processes, bearing in mind that these processes enable the understanding of social relations, phenomena, changes, a familiarisation with one's own roles and the roles of others in the family, professional and community life: to judge what should be done in each of these roles if one is to achieve success. Decision making ability, problem solving ability, as well as the planning of future activities are the cornerstone of the successful individual and social behaviour of an individual. This is also a basis for an ability to self-develop, known as the ability of self-competence (along with social competence, the second basic feature of competence). Relying on this, it could be said that the most

important features thought to be necessary if an individual is to achieve in both individual and social life, and which can also be considered to be the criteria for the guidance of his/her competency development, are the following: autonomy, tolerance, participation, openness, flexibility.

The above outlined desirable communicative and self-reflexive features are considered to be in close relation and mutually dependant, influencing a person as a whole system and his/her interaction with the setting. On the other hand, they are considered to be indicators of success of the development of interaction and total social behaviour. As guidelines and criteria for competency development they are build into concepts of both of the aforementioned aspects of competence – self-competence and social competence.

Self-competence would thus include both aspects, individual and social, since development, understood as a life-long process, takes place in the process of socialisation – as the development of both the individual and social being. The social side in this conception does not have a limiting aspect in relation to individual, personal progress, to aspirations towards the freedom of individual advancement. Or, to put it differently, balance is expected in relations with others, organised so that it does not limit either side in the relation. The concept of competence in itself carries personal characteristics (thinking, judgment, evaluation, emotional expression, etc.), but, on the other hand, its »products«, expressed in construed meanings and a readiness to react based upon them, have deep social meaning and origin. Therefore, dynamic interaction is considered to be two sides of one conditionally divided process. At the same time, the view of reality, although determined by numerous exterior circumstances, is comprehended and experienced in personal way, subjectively and individually by every individual. Behind all of this, the phenomenon of competence could easily be classified under those competences that are in a manifold way determined by subjective meanings, evaluation, the orientation and experience of the individual, serving as a basis for the process of the individual's self-competence development.

It seems that a better understanding of self-competence cannot be achieved without Jung's individuation concept, according to which a man is a self-understanding being, striving for autonomy and personal efficacy, self-competence. We point to the following as frequently highlighted features of self-competence:

- readiness to accept new experiences and ideas, open-mindedness and cognitive flexibility;
- independence and autonomy in relation to traditional sources of influence;

- an explicit sense of personal efficacy in individual and social settings;
- being informed and ready to participate.

These complex features, formed in the period of individualisation, are a great challenge, not only for the individual but also for society, as well as for education. From the perspective of self-competence they help the individual to understand it as an ability to organise him/herself and his/her own everyday life, according to his/her own view but with respect to those with whom everyday life is shared. Numerous authors hold that the key competences of education for intercultural communication are the following:

- Self-understanding skills:
  - an ability for dialogue and a readiness for communication (intercultural orientation);
  - (self-)reflection ability (articulates personal motives and interests, determination of one's own viewpoints, along with an ability for self-criticism and an accurate perception of one's own learning potentials and achievements);
  - value orientation (the guideline of life orientation is humanistic, and ethical principles are rightfulness, responsibility, etc);
  - ability for conflict solving (search for reasonable and acceptable compromises, non-violent conflict resolutions, etc.).

- Cooperation skills:
  - readiness for international cooperation;
  - team work skill;
  - community orientation;
  - networked learning (an ability to consider and get closer to various sources of information, experience, in order to develop a network of informal contacts and offers for help and cooperation).

- Efficiency skills:
  - decision making skill (in various complex and risk situations);
  - action competence;
  - participation competence (with an accent on responsibility).

- Self-organisation skills:
  - guidance of one's own learning process (metacognitive features development);

- evaluation competence (self-evaluative competence);
- life-long learning (learning is seen as life quality enrichment).

- Comprehension skills:
  - an ability to view from various angles (different dimensions and meanings);
  - constructivist treatment with multiple approaches (making connections between various methods, ways of looking and competences when problem solving – pluralistic thinking);
  - global perspective (local experiences and ways of their solution are connected to possible actions on a global level).

Conclusion

Communication and self-reflective skills are nowadays considered to be key competences of intercultural dialogue and integration in contemporary European and broader frames. One of the important questions contemporary pedagogues ask themselves is how they see the possible models of efficient education for a contemporary society characterised by rapid changes and currents, and for a Europe that is making huge strides towards ever closer integration, thus building specific human intercultural relations. In such an educational concept, nowadays called »a concept of education for action competence«, the ability and readiness of an individual to follow and guide changes, as well as the readiness of an individual to solve problems of personal and social reality, anticipating, among other things, competence for intercultural communication, emphasis is placed on education that will contribute to the development of a capacity for constructive determination towards the development of an ability to develop a suitable and acceptable relation towards differences in an intensified sensitivity for the interests of others, differences that do not have to be a cause of conflict. Many European educational models emphasise the importance of critical judgement as a necessary precondition for conflict resolution, the autonomous behaviour of an individual in the contemporary world, as well as an omen of the development of critical, autonomous individuals and »self-directed« education. That which is expected of education is to encourage the development of such »reflexive« individuals, thus enabling the influence of a citizen on the process of reaching and developing democracy. For education in Serbia, which is attempting to catch up with European tendencies and to make it possible for society to entered the processes of a »learning society«, communicative and self-reflexive skills are also important. As already pointed out,

these skills are considered to be the *key competencies of intercultural dialogue.* Therefore, it would be significant to study what the competence for intercultural communication really is and to go a step further in consideration of the role of education in the provision of the aforementioned intercultural dialogue competences. This would certainly be a guideline for practical actions to be undertaken to make curricula more modern and to pay attention to other aspects of educational care.

According to the standpoints offered in the above text, what should be of great importance is a system of values that, as has already been mentioned, represents the orienting point, the purpose, the meaning in life, guiding and directing life while creating and guiding the aforementioned competences, or vice-versa.

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What can be expected when a group of eminent experts in teacher education (TE) is invited to answer a questionnaire and write a report on some facets of recent developments in teacher education (TE) in their respective countries? The result – the collection of reports from 13 European countries – is an interesting publication that can be read in two ways:

- to search for commonalities and differences in a certain area or
- to regard every report as a case study in its own right, to see how a blend of tradition, given circumstances and context generates particular solutions and also frictions, dilemmas and problems.

Both approaches help us to better understand the interplay of different variables in shaping TE and thus also one's own situation. Solutions presented can be the source of ideas for policy makers and teacher educators. We can not always search for common solutions; the differences among countries can also be seen as enrichment.

The present introduction to the text is not meant to be an »executive summary« of the reports, but a personal selection of interesting common points and also points of diversity in views, problems or solutions.

In the questionnaire, the following three broad areas were covered:

- **initial TE** (the level education required of teachers, institutions responsible for TE, admission procedures, the renewal of study programmes according to Bologna process, induction period, postgraduate studies,
- **in-service training** (institutions, areas, financing; teacher promotion policies), and
- **broader issues** (areas of current discussions, research studies and proposals for further development).

The texts that resulted from the answers show beside some commonalities a wide variety and diversity of approaches that reflect not only differences between countries but also between experts themselves, their perspectives and conceptions, their personal judgement of what they regarded as important and worth mentioning. One of the important differences is that some case studies are mainly descriptive – presenting data, regulations, describing programmes while others are more problem-oriented, with a personal touch – arguing about solutions, mentioning dilemmas, unsatisfactory processes and open problems, as can be seen already from the subtitles: »Teacher Education in the Netherlands: Balancing between autonomous institutions and a steering government«, »Teacher education in France: persistent tensions between profession and civil service«, »Teacher Education in Norway between scientific ambition and professional relevance.«

There are differences already in the **introductory section**. Some reports start with description of the school system, some give the historical background – and some include **theoretical background** and **main principles** that guide curriculum construction and the overall policy of TE. These principles are, for example, mentioned in the report from Estonia, or Finland, among others the serious attempt to bring together high quality academic subject matter knowledge with pedagogical knowledge, metaknowledge and high quality pedagogical skills with reflection as a bridge between academic and professional development.

Another important component of some reports (maybe it should find a place in all of them) is the description of **main competencies** required from teachers in the changing society as a basis of curriculum renewal. Reports from Sweden, Poland, Norway and some others include a detailed list of knowledge, skills and competences. In Finland and the Netherlands where a broad consensus regarding competencies is being achieved, also the ethical dimension of teacher profession is being stressed. Certainly most of the countries involved have done some efforts in defining competencies, as it is a »conditio sine qua« for any renewal, but not all reports presented them.

The level of education required

In the descriptions of the renewal of initial TE study programmes according to Bologna process, there are some commonalities. In all countries, teacher education is an area that remains more regulated than other sectors of higher education. It means that TE is at the very centre of public attention. Minimal standards or at least recommendations were set up by ministries or universities. Sometimes, the level of regulation is being regarded as too strict,

like in the Netherlands where the ministry decides not only about qualification framework, but also about the knowledge base of teachers, even national tests for teachers are being planned.

Following Bologna process, a renewal of TE curricula took place in all countries. They had first to make a decision about the level of the required TE for different types of teachers - whether to educate them at the first or second cycle of studies. The countries like Finland, Estonia, Czech Republic, Croatia, Slovenia, have decided to educate all (except preschool) teachers at the second cycle which means 300 ECTS or the equivalent of 5 years of study (the so-called »masterisation« of TE). Other countries embraced a different, sometimes more flexible system, like Norway, the Netherlands, Sweden (which requires 210 ECTS for preschool and primary teachers and 270 ECTS for subject and secondary teachers). In the Netherlands, all secondary teachers are being educated in a consecutive mode, after finishing the academic study of their subject. In Norway, there are different paths to become a teacher, but usually for a teacher certificate a broad integrated 4-year TE-program at bachelor-level (240 ECTS) is being required. In most of the countries, the minimum of 90 ECTS of subject matter study are required, in Sweden, they require 120 ECTS to teach mother tongue.

For some countries, the transition from the previous situation to Bologna system represented a big challenge and a fundamental structural change. For others, like Finland, that already before had a Master degree for all prospective teachers, Bologna process was more a phase of national analysis and evaluation of the teacher education curriculum than a fundamental change.

Institutions responsible for TE

are now more or less everywhere part of the universities (the so-called process of »universitisation« of TE which some observe with mixed feelings). The usual, but not universal pattern is that faculties of education are responsible mainly for education of teachers for compulsory school; other faculties (of humanities, art, science), that offer academic training also for other professions, train secondary school teachers. The fate of specialised institutions, like the French IUMF, is uncertain.

Admission procedures

As regards admission procedures, we find a great variety among countries. A lot depends on shortage or surplus of teachers for a certain subject or

area and the number of candidates. Admission procedures have to be better defined when there is more competition for the places, like in Finland or Russia. Usually, there is more interest to study for preschool and primary level than to be a secondary school teacher.

In most of the cases, the main criteria are results of final (usually external) secondary school leaving exams, also combined with school marks and sometimes with exams of knowledge in the subject of academic study (the Netherlands, Poland) or proficiency in English (Sweden). Importance of other characteristics like communication and cooperation skills, interest in education, educational experiences… is being widely recognised, but only rarely included in admission procedures, for example in the form of admission interviews (Croatia, Czech Republic, Romania), more so in the case of primary teachers where also musical abilities play a certain role. Interesting is the case of Estonia where beside academic results also personal characteristics are taken into account, such as interpersonal, communication and cooperation skills. In order to evaluate those, the applicants are given group discussion exercises. At another extreme is Poland where it is against the law for universities to hold additional examinations to test candidate's pedagogical abilities.

In view of these differences, there is certainly still a lot of thinking and research to be done to find the optimal solution and combination of selection and admission procedures. Another problem is how to motivate more able young people to decide and apply for studies in TE.

Curriculum renewal according to Bologna process

One of the consequences of Bologna process is a more unified and **better defined professional part** of TE which consists in most cases of 60 ECTS (equivalent of one study year) and includes beside the more traditional components (psychology, didactics, subject teaching methods) increasingly also elements of sociology, philosophy of education, ICT, communication. In some countries, the research methodology, with the stress on action and qualitative research is being included to enable teachers to develop a research orientation to their professional work (Finland, also Slovenia).

This means in many cases also a better **balance between academic and professional parts** of curricula also for future secondary teachers, where the professional part has been traditionally neglected, sometimes to the point of complete deprofessionalisation – mentioned in case of Czech Republic. The process of »professionalisation« of TE in traditional academic institutions is slow as it requires changes in conception of identity and mission.

Another common feature of renewed curricula is strengthening of **practical school based training,** in qualitative and quantitative terms. Many regard this as the central issue of curriculum renewal (see the report from Russia). The practice comprises between 15 and 20 ECTS (which means from 5 up to 15 weeks), but is in many cases still longer and better organised for primary than for secondary teachers. Some countries have already a long-term tradition of an intensive confrontation with the future profession during the studies, from the first year on; others are developing it anew. The practical part has a different focus in different phases, like: initial, observational, subject, research, complex practice in Czech Republic, observation, active teaching under supervision of some lessons and finally independent teaching in Slovenia (better defined for primary than for secondary teachers) or in the Netherlands. In the last case, students have an independent teaching practice for half a year at the end of the study.

The practice is being supervised by university lecturers jointly with mentors from cooperating schools; the partnership of faculties and schools has been strengthened also by the corresponding EU projects, like in Slovenia. In some countries there exist special training schools. In the evaluation of the practice, the portfolio is increasingly being used.

Who are teacher educators?

In accordance with the process of »universitisation« of TE, teacher educators have to comply to university regulations for appointment and promotion; the criteria are in most cases based entirely on scientific publications, sometimes only in the academic subject field; pedagogical qualifications or practical experiences in teaching (at primary or secondary level) are not required. Also the quality of work with students is rarely taken into account. The Netherlands represents a positive example by defining teacher educators as a separate profession and supporting their professional development. Hopefully, other countries are going to follow this example. On the other hand, the importance of mentors at schools is being increasingly recognised in many countries; more and more attention is given to their status and training.

At the end of the studies, the candidate has usually to write and defend a thesis that is more or less orientated toward the area of teaching. For secondary teachers, it may be based entirely on the academic subject chosen. For primary teachers, the thesis may represent the proof that they can perform research on the problems of their own teaching.

Induction period, state examination

Here, there is again a lot of variation among the countries concerned. In some, there is no induction or probationary period at all - the teacher gets the full qualification or licence at the moment of graduation (the Netherlands, Russia). In the case of the Netherlands, maybe the large amount of independent practice in school during studies does make a special induction period less necessary. In Russia, the teacher is fully qualified upon graduation, but gets a mentor to help him/her at the beginning.

But in most of the cases, the newly qualified teacher spends the first year, maybe two, as a probationer, under a close supervision of a mentor (sometimes also principal) at the school, with part-time teaching duties and a somewhat reduced wage. At the end of this period, there is a state exam which makes him/her a fully licenced teacher. The university institutions are usually not involved in this process, like in Sweden where the induction period is a question for the municipalities or the private schools. The mentor may have less teaching hours as a compensation for the mentoring work. The case of Estonia can be mentioned as an example of a very systematic attempt to give support to newly qualified teachers. In 2004/2005, the induction year programme was initiated for all teachers. They have to attend in-service courses organised by university induction year centres. These centres also train mentors for their task of supporting novice teachers' learning. The evaluation research performed on this induction programme found three areas in need of improvement (this certainly applies also in other countries): to increase novice's readiness for reflection, to train mentors for their role and to increase school principals' readiness to support novice teachers. The training of mentors is being offered in many countries (the Netherlands, Sweden, Slovenia), but is not obligatory.

Also the **state exams** at the end of probationary period vary a lot in terms of scope and content. In some cases, the process is very demanding, comprising oral and written exams in subject matter, didactics, school laws etc., like a »second diploma« (Romania). In some cases, the candidate has to prove his/her teaching abilities by performing a model lesson before a committee (Croatia). In Slovenia, the candidate has to present documentation of a certain number of observed lessons which were positively evaluated by the mentor and principal and has also to pass exams on the legal system of EU and Slovenia, the legislation in the area of education and in Slovene language.

In most of the countries, **postgraduate studies** are being offered to teachers, some at the doctoral level, some to qualify to teach another (second or third) subject or to be able to perform special duties (like school counselling, working with children with special needs).

In-service training and promotion

In-service training is being organised and offered by universities and numerous other public and also private institutions. The amount of structure and obligations for teachers and schools vary a lot. For example in Romania, every teacher has to collect 90 points from in-service courses every 5 years, half of those from formal in-service; there is a similar situation in Russia that has 100 centres for in-service training of teachers. Also in Poland there is a strong institutional basis, consisting of a national and many local centres. In Slovenia, teachers collect points in accordance with the duration of courses (in-service training seminar that lasts 8-15 hours is rated with 0.5 points, a seminar that lasts 16-23 hours is rated with 1 point etc.) and those points count toward promotion.

On the contrary, in the Netherlands, there is no national programme or obligation; full responsibility for in-service stays with schools and teachers, there is also a lot of school-based in-service in accordance with school needs. In many countries (France, Croatia, Russia, Slovenia…) the courses in information communication technology and the use of computers in teaching are becoming one of the priorities, set by the governments. Other areas in which teachers express wishes for in-service training are teaching students with special needs, mastering discipline and behaviour problems and class management. Also projects, carried out by school teams, sometimes with international cooperation, represent an excellent way to promote teachers' professional growth and affect deeper changes in thinking and teaching (see examples from France, Slovenia, Finland).

It is interesting to note that the **system of teacher promotion** with the help of special titles is mentioned only in the reports of former socialist countries, like Poland, Czech Republic, Russia, Croatia, Slovenia, Estonia, Romania. The system is usually quite elaborate. Some examples: in Estonia, there are four consecutive levels – junior teacher, teacher, senior teacher and teacher-methodologist. The first promotion is being performed by the principal, for the next, the teacher has to apply and perform a self-evaluation. In Poland, the titles are trainee teacher (first year), then contract teacher, appointed and chartered teacher. Titles are awarded by special committees, the highest by the Ministry of education.

In Slovenia, the teachers can be awarded the titles of Mentor, Adviser or Consulter, according to detailed regulations. For example: for promotion into the title of mentor, the teacher needs to get at least 4 points from in-service training (points depend on the length of the training) and 3 points from the

area of professional work (mentoring students, organizing different activities for colleagues, students, parents, doing research, writing articles or textbooks, etc).

All the titles are awarded by the Ministry. In Romania, there are three didactic degrees that are linked to a training programme and formal evaluation. In Russian Federation, there is a national system of grading teachers based on their experience, etnure and level of education. Besides, for very special achievements, teachers can be awarded titles, like Honoured teacher.

The weak point of these systems, mentioned in some of the reports, is an excessive formalisation and bureaucratisation, while the quality of teaching is not being given the proper attention.

In other countries, career promotion does not consist of titles, but of new or expanded professional tasks and responsibilities, linked to the newly acquired competencies, like leading teams or projects, becoming a special needs teacher or counsellor. There are many plans to create master programmes for teachers to expand or create new career opportunities for them.

Open problems and suggestions for improvement

Let us list here only some of the typical problems and issues, raised in reports:

- a decreasing level of motivation and cognitive abilities of candidates for TE,
- a low social status and self esteem of teachers,
- a shortage of qualified teachers for certain subjects,
- employment of unqualified teachers,
- lack of systematic monitoring and research in TE,
- research results (on teaching, learning…) are not being put to practice,
- teachers are not able and motivated to analyse their performance, participate in team work and learn from each other,
- lack of balance between theory and practice and between academic and professional parts of TE (especially for secondary school teachers),
- occupational burn-out of teachers,
- inability to cope with behavioural problems of students and excessive expectations of parents,
- low level of professional autonomy in face of government control,
- lack of clear policy in this area.

Some suggestions for improvement:

- TE should be based on internationally recognised research,
- a radical change of the philosophy of TE from quantity-oriented to quality-oriented.

What else is needed?

- formulation of clear professional standards and also criteria to assess them,
- a revision of procedures for accreditation of TE institutions and programmes,
- allocation of sufficient resources,
- improving the flow of information (on didactic recourses, multimedia…) also on international scale,
- increase teacher mobility and different (also international) partnerships.

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The final word

Let us conclude with an important suggestion from Estonia: there should be focus on **coherence and cooperation** between actors that enter into this field: state, higher education institutions, responsible for TE and teachers themselves and their associations.

At the moment, diversities seem to be larger than similarities. What about the future? Are national perspectives in TE going to be adapted to and give way to a European perspective? Is it a desirable process? The Swedish report concludes: With knowledge and a comparative perspective our discussions and suggestions probably will be more informed, pragmatic but also critical. There is a similar statement from Romania: »The efforts of harmonisation of teacher training policies and structures in the EU member states should be continued.« But not everything can be regulated, as: »Teaching is more than an occupation, it is a mission«.

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