EXPLORING ALTERNATIVE PEDAGOGICAL SPACES TO SUPPORT 21ST CENTURY SKILLS DEVELOPMENT

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Abstract

21st century skills include competences for everyday life and work, such as cooperation and teamwork, creativity, critical thinking, and problem-solving skills, which are also developed in the pedagogical space. In the framework of this research, we sought to find out in which pedagogical space alternative schools, which have declared to develop 21st century skills in their pedagogical programme, implement competence development.

Keywords: *Competence development, pedagogical space, autophotography.*

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1. Introduction

The need for the development of 21st century skills in school education has come to the forefront of professional interest and several attempts have been made to take them into account (Molnár, 2013). Taking into account different approaches, they include competences necessary for everyday life and employment such as cooperation and teamwork, creativity, critical thinking, problem-solving, information literacy, flexibility, adaptability, initiative and self-regulation (Molnár, 2013; Vass, 2020).

The learning environment plays a significant role in the development of learners' skills and competences, including the social and cultural context of teaching and learning, the method of teaching and assessment, the processes of learning organisation, the technical tools, media, materials, programmes, group size and composition, and the physical and online environment of learning at home and at school (Komenczi, 2016, Imms, 2016), i.e. the pedagogical space: School architecture, school space layout, the school's natural and infrastructural environment, classroom design (Hercz & Sántha, 2009). Furthermore, pedagogical space is both a functional and intentional expression of pedagogical thinking, and it influences communication and limits the pedagogical methods that can be applied (Kemnitz, 2001, 2003 cited in Hercz & Sántha, 2009).

2. Methods

The aim of our research is to investigate the implementation of program-appropriate pedagogical spaces in alternative schools. The starting point is that the development of 21st century skills presuppose the existence of suitable pedagogical spaces, therefore, in the framework of this research we sought to find out in which pedagogical spaces alternative schools, which have declared their commitment to the development of 21st century skills at the level of the pedagogical programme, implement this. In order to explore this, we analysed the pedagogical programme of the schools in relation to their goals for skills development and the pedagogical space, and we used the method of autophotography to analyse the pedagogical spaces; we used the method of visual content analysis to analyse the photos and qualitative content analysis to analyse the commentaries (Sántha, 2011). The research included 5 alternative schools that were founded 25-30 years ago and, in their case, the pedagogical space was "born out of necessity", i.e. they operate in a traditional school building, and 3 alternative schools that were founded in the last 5 years, so the choice of the "school building" and the design of the pedagogical space was made according to their own ideas.

3. Results

In Hungary, the freedom to design pedagogical spaces is limited. The design of spaces is influenced by the building in which it is located, when it was built and what its original function was, and by strict rules on the design of school buildings. "One of the most stable guardians of a school's history is the building, the classroom, the school desk. The traditional school, anchored in concrete, brick and building structure, does not allow change, even if the people inside it all want something different" (AKG Pedagogical Programme, 2009 cited in Hercz & Sántha,2009, AKG Pedagogical Programme 2020), and the mandatory legal requirements for school buildings give us the image of a "well-functioning children's factory, an efficient office" (AKG Pedagogical Programme, 2020). Nevertheless, the mandatory requirements, the environment and the lack of resources are obstacles to the programme-oriented transformation of the educational space, which is why the principles and functions of the layout of the educational space are not part of the educational programme in most schools (cf. AKG Pedagogical Programme 2020)

3.1. The original function of the school buildings

The above definition is supported by the fact that, in terms of the original function of the school building, only one of the alternative schools studied was specifically designed for the alternative school, taking into account the main educational objective of the school, namely proximity to nature and environmental education, and therefore, unlike the other schools studied, the school building was built of natural materials (stone, wood) and located on the edge of the forest, in the nature.

The situation of the other alternative schools is less favourable in terms of building. Some of them operate in school buildings that were built as traditional schools decades ago, while others were not originally designed as school buildings but were converted from shops, offices, apartments or family houses for the alternative school. All these factors and the possibilities offered by space also determine and define the space constraints of alternative schools.

3.2. Interpreting the learning environment in educational programmes

As already mentioned above, even in the case of alternative schools, there are only a few pedagogical programmes that describe the principles and functions of the pedagogical space, and in our case only four schools make reference to this. The schools that did discuss pedagogical space formulated their own concepts in terms of learning space, school and spatial layout. The results show that the learning environment (Figure 1) is understood as both an internal and an external learning environment. For the internal learning environment, its characteristics were named as open, real-life, extended, mobile, inclusive, diverse, but for the external learning environment, its possible locations: nature, society, online, VR, AR and informal learning settings, he above definition is supported by the fact that.

Figure 1. Interpreting the learning environment.

Figure 2 summarises the school's approach. Here again, the emphasis is on the naming of characteristics: familiar, demanding, inspiring, motivating, transparent, providing security, cozy, and, in the case of the adjective open, which is already used for the learning environment, not only the openness of the internal school spaces but also the openness towards the immediate environment of the school, which is in line with the principle of placing the learning environment outside the school.

Figure 2. Interpreting the school.

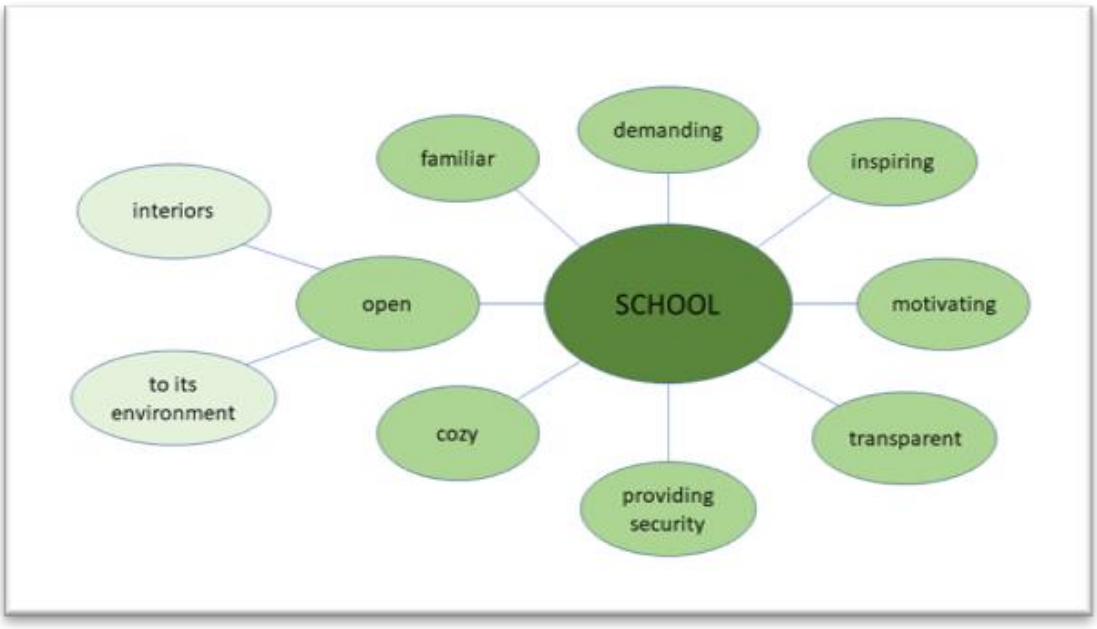
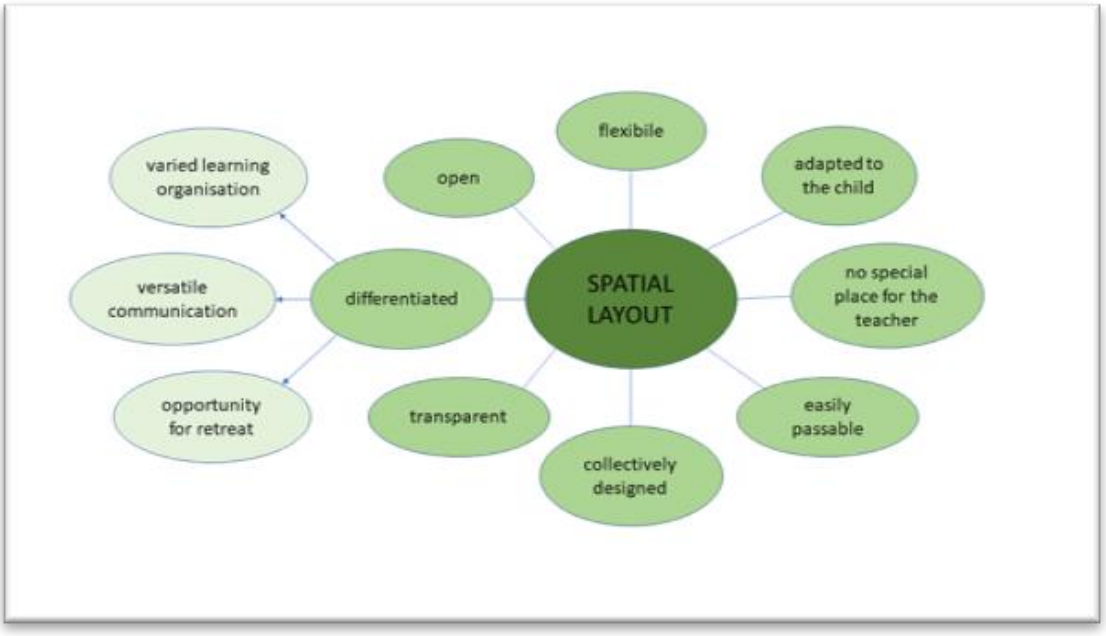


Figure 3 shows the principles for the layout of alternative schools. These include collaborative design, the importance of which has been pointed out by architects and environmental psychologists involved in the design of school buildings (Flutter, 2006; Rauch, 2000; Heylighen, 2015). In addition, emphasis is placed on openness, flexibility, adaptability to the child, accessibility, transparency and differentiation, that allow for variated learning organization, versatile communication and opportunity for retreat.

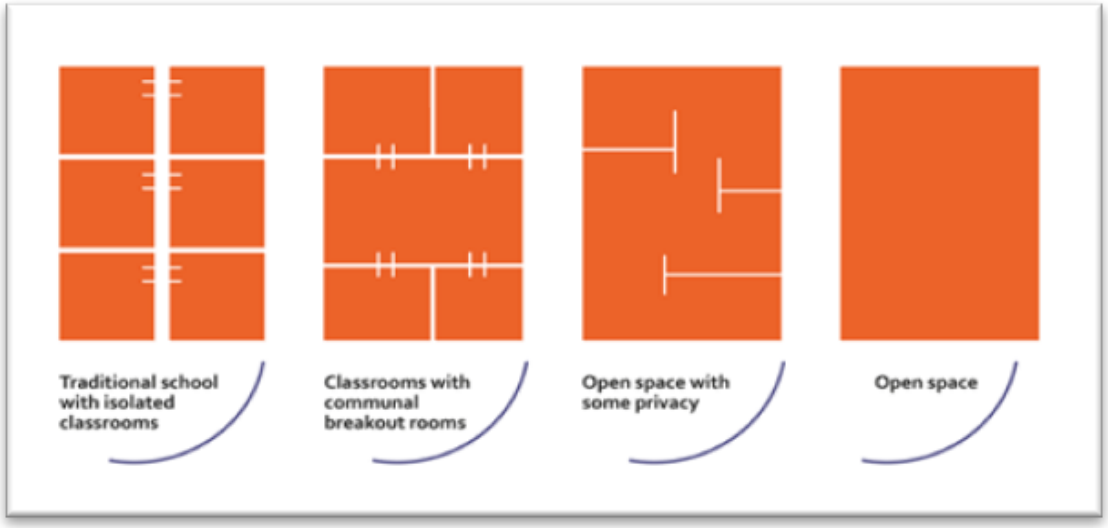
Figure 3. Principles for the layout of alternative schools.



3.3. Space design models

The photos of the schools were compared with Imms' (2016) models of learning spaces and it was found that all of the possible configurations of learning spaces (Figure 4) were identifiable.

Figure 4. Typology the learning spaces (Imms, 2016).



In alternative schools that found a place in a traditional school building and could not afford a major conversion, the traditional isolated classroom layout with a corridor was retained. In these schools, the interior design and layout of classrooms and corridors and common spaces are being adapted to make the pedagogical space suitable for the development of 21st century competences. The schools that have undertaken the conversion of old school buildings have been able to implement the concept of the 'tenement school', in which individual small schools, made up of several classes, are given independent housing as communities (cf. Classroom with communal breakout rooms). This includes classrooms, free-use communal space, a changing room and locker area, a study room, restrooms and a kitchen. In addition, as far as the building allows, there will be open spaces for free communication and personal space for students.

Newly established alternative schools also strive to create classrooms with communal spaces or, where possible, open learning spaces, taking into account the building used for the school. One of the new alternative schools has deviated from this approach and has developed a specific solution for the layout of its spaces. The school is made up of a network of independent, spatially separated 'micro-schools'. Therefore, the heterogeneous age composition of the groups that make up each micro-school is not confined to a single building, but is scattered throughout the city or in several cities, and the micro-school is often located in a family house, flat or office. In these micro-schools, open learning spaces are preferred, but there is only one group of pupils per learning space and the groups are not connected.

The results were also compared with effective school models such as "school outside the city", "school of encounters", "school on an island", "school in the city", " school closures", "life space school", "castle school" and "ring school" using the circular architecture solution (Hercz & Sántha, 2009). Of these, the 'school outside the city' model was clearly identified for one school, while for the other schools, regardless of the school building, the 'life space school' and the 'school of encounters' models were identified, which differ significantly from the design of pedagogical spaces in the majority of schools.

4. Conclusion

Summarizing the results of the research, it can be said that the external and internal environment, functional spaces and spaces of pedagogical action of the schools studied are suitable for the application of methods supporting the development of 21st century skills, due to their openness, flexibility, transparency and interoperability. Even alternative schools operating in traditional school buildings have shown a number of specific solutions that suggest that, while respecting the legislation on school buildings, alternative school spaces can be adapted to mainstream school spaces.

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