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Tanulmány

21st century learning: what about "normal schools"? Messages from primary school teachers in Hungary

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Abstract:

Schools in the 21st century face a diversity of challenges, while society urges them to contribute to preparing active future citizens to combat the planetary crisis. Although many good examples are known of schools taking part in future-leading efforts, and some environmental and infrastructural factors are well researched to improve the quality of learning, yet most schools refer to some routine and their inherited infrastructure to meet all requirements set by policy recommendations. In a survey involving 283 teachers from 63 schools from 3 countries, we examined the relation between the school's missions, didactical approaches and infrastructure (including building use). In this paper we highlight findings from responses by primary school (ISCED 1) teachers in Hungary. Despite the motivation and intention to use active learning, some factors – infrastructural deficiencies and the lack of collaboration – impede this mission. Until teachers are not empowered to engage in reflection about the role and future of education and are not introduced a diversity of architectural and technological solutions, they stay imprisoned in their classroom, left with limited resources to act for global change, while many policies refer to them as main empowering actors.

Keywords:

future learning, 21st century competences, school infrastructure, learning environments

Introduction

Social and economic transformation from the late 20th century raised the need the redefine the role and mission of schools. Earlier OECD school

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future scenarios (OECD, 2001) only mention one possibility out of six where the "traditional" school and schooling prevails, and in the two re-schooling scenarios as well as in one of the two status quo scenarios the schools open towards the communities. Later OECD scenarios (OECD, 2020) include one scenario out of four where schools continue to expand, and in this case the tensions mentioned in the same publication may grow, making it evident that instead of knowledge-transfer schools need to find how to serve the community as well as global needs by pedagogical innovations in an environment that leaves little space for failure (that is part of any innovation process) due to its high risk-avoidance and the conflicting interests between old structures (including infrastructure and systemic approaches as well) and new goals and potentials. Considerable effort has been made in all European countries to focus on competence development and active learning, making teachers meet new didactic approaches, values, while challenging schools to reflect on their mission in the light of the profound changes of societal needs and expectations. How are these policy intentions reflected in teacher's views and practices? Can teachers identify with these concepts and show ownership towards the schools' aims in their daily activities? What general views teachers have on their school's mission and on general educational aims – and more largely, on the overall aim of education?

The mission and the context of school learning has again become a hot topic following the COVID pandemics, especially in the light of the triple planetary crisis and the Sustainable Development Goals, calling for transnational collaboration to face the multifold encounters of the 21st century. The United Nations' first summit dedicated directly and exclusively to education took place in 2022 and was largely grounded on the conceptual framework presented in UNESCO's landmark report Futures of Education, which aimed at redefining the purposes of education. The report states that "education must aim to unite us around collective endeavours and provide the knowledge, science, and innovation needed to shape sustainable futures for all anchored in social, economic, and environmental justice" (UNESCO, 2021). This may give a chance for humanity and future generations to get prepared to tackle environmental, technological, and social challenges and changes. It envisions education "as a public societal endeavour and a common good" (UNESCO, 2021), accessible for everyone.

Transformative learning, which builds on active learning, contextualizing and meaning making (Mezirow, 1978, 2018) is considered as one of the most efficient ways to prepare students for global challenges (OECD, 2019; UNESCO, 2021, 2022) and appears in most relevant international processes linked to education for sustainable development, health, peace and global education (United Nations, 2022a, 2022b; World Health Organisation, 2024). However, there are opinions that for transformative learning, only certain infrastructures – for example, organic spaces and approaches (Mayes, 2010) – or specific school arrangements – living laboratories of school-community

collaborations (Wals, 2019) – could qualify: hence the traditional schools are not appropriate places for such learning. This raises the question about what to do with the majority of the learning facilities. Should teachers accept the fact that these facilities are not suitable for transformative learning and give up any piloting or innovation that leads towards? Or should these facilities be transformed or adapted in a way that they can serve such approaches? And if we are to adapt them, in which way to start?

There seems to emerge a consensus that educational facilities that are suitable for meeting the expectations of 21st century learning need to provide a diversity of spaces, with flexibility to serve different, changing and tailored needs of students and teachers, also opening towards local communities (OECD, 2018, 2023). This raises the question whether infrastructure could act as a limiting factor to active, innovative learning. Research evidence supports the notion that schools as facilities even taking into consideration existing infrastructural constraints may support 21st century learning even by gradual, small and very economic adaptations (Barrett et al., 2019). Undoubtedly, if the physical layout and the flexible design of the school reflect the desired or intended pedagogical practice, a more meaningful and harmonic learning takes place, remarkably if local climatic and cultural conditions are also taken into account (Barrett et al., 2019). However, schools may also better facilitate learning if teachers consider the entire facility as a space for potential education – and a skilful way to achieve this is to design the learning journeys using learning environment models. Learning environment as a concept (considered to originate from 1968) had already been used in 1985, and since then, a diversity of pedagogical models and approaches emerged with the intention to improve students' learning outcomes and learning experiences (Fraser, 2018). But has the model infiltered in teachers' routine of planning and choice of places and didactics? And if so, do teachers use the learning environment approach to improve the educational experience, or to attain declared educational aims, finding and using the most suitable physical space for given didactic purposes?

In this paper we introduce findings from a European project "LEARNITECT – Meeting of innovative learning design and inclusive learning spaces" that aimed to support participatory approaches in infrastructural development for active learning that meets 21st century expectations.

Besides the questions raised above, the project was interested to find out how much teachers experience from the schools as a learning facility, how thoroughly they reflect on and contextualise their teaching experiences in term of infrastructure use, and in this context, what changes teachers envision to make their efforts more beneficial for the teaching.

Methodology

The project completed a data collection in the three participating countries: Hungary, Italy and Portugal, with the participation of 283 teachers and 26 school leaders. The voluntary, anonymous, online questionnaire contained 95 items of closed and open-ended questions regarding the specific schools' infrastructure, the educators' views on the school's purpose and mission, the teaching practice and teachers' habits, intentions and experiences about their school's infrastructure. There were also open-ended questions about desired improvements to the responders' specific school infrastructure. The questionnaire primarily focused on learning as envisioned in the aforementioned policy recommendations on 21st century education, not on other functions such as safety, health, well-being, legibility, place attachment or the representation of the local context.

The questionnaire was based on Manninen's model on learning environments (Manninen, 2007), which contains five main aspects: (1) the didactical aspect embraces all others and serves as a basis for contextualisation as well as for designing choices for the others; (2) the physical aspect satisfies the basic needs for physical well-being and motivation; (3) the technical aspect supports learning by equipping teachers and students with appropriate technology (therefore, together with the physical aspect of the learning environment, forms the classical infrastructure); (4) the social aspect provides meaning and motivation as well as possibilities for community engagement and inclusion; and (5) the local aspect enforces place attachment and realises connection to the local community. The questionnaire thus contained items that refer to the physical and technical, but also the didactical, social and local aspects of learning environments.

The questionnaire was distributed to schools that the project partners had already had some experience with involving school infrastructure and innovation projects. These schools were considered as ones with future-leading, innovative practice, that had already shown interest in or taken steps to collaboration to improve education. This way the sampling cannot be considered as research, rather a structured data collection. However, responses sufficiently oriented project work and provide basis for further inquiry about connections between teaching-learning methods and school infrastructure. They also represent important messages from teachers in "normal" schools (state schools that do not follow specific, alternative curricula).

Overall, 63 different schools were invited to take part in the project's inquiry into teachers' voices about school practice and infrastructure. The responders came from a diversity of school types: secondary schools (ISCED 3), middle schools (ISCED 2), primary schools (ISCED 1) and mixed schools (serving an age range of students from 6 up to 18). Table 1 summarizes the distribution of respondents across participating countries.

Table 1

Responders taking part in the data collection

country	number of		
	schools	responding school leaders	responding teachers
Hungary	11	12	104 (ISCED 1: 16, ISCED 2: 32, ISCED 3: 56)
Italy	18	9	76 (ISCED 1: 17, ISCED 2: 29, ISCED 3: 30)
Portugal	24	5	103 (ISCED 1: 34, ISCED 2: 28, ISCED 3: 41)
Total	**63**	**26**	**283 (67 ISCED 1 89 ISCED 2, 127 ISCED 3)**

The self-reported survey data implies certain limitations and potential biases in our case as well. Many schools and teachers in our sample took part in past research and development activities, where they had a chance to get informed about some desired aspects of 21st century teaching and learning, hence a desirability bias may occur, although with specific items after general questions can be suitable to filter some of these (e.g.: general use of active learning, use of specific teaching methods, views on infrastructural needs of specific methods). In some cases, such biases could be considered. On the other hand, self-administered questionnaires are appropriate tools to collect data on infrastructure use and needs, as well as individual opinions on facilities. The open-ended questions in the survey also served as filters for potential biases. A special challenge in the international context was to formulate questions on school infrastructure and learning that are understood by responders in the same way. Alternative representations (as well as translation issues) were thoroughly assessed by experts involved in the project in the frame of which the survey took place. These measures improved data validity.

The aim of the questionnaire was to get a holistic view on learning environments in the facilities involved and examine teachers' messages about them. Being aware of the limitations of our data collection, we considered that some assumptions – taking it into special consideration that using school infrastructure is still not widely researched – might inspire the research community to engage in specific further inquiries in the future.

In this paper, we provide an insight to data from primary school teachers, focusing on the views and experiences of the responding primary school teachers from Hungary, augmenting and contextualising them with responses from the other two countries and other school types, where relevant.

Results

School infrastructure: physical aspects of learning environments

All responding schools in our sample follow their respective national core curricula and can be considered as "traditional" in terms of infrastructure. Each responding school follows the learning hub approach in terms of education, and in terms of infrastructure, they mostly reflect the "school as a fortress" infrastructural model (Building Futures, 2004), with some (or in a few cases: declared and established) intentions to open towards the community. In this school typology, the school as a fortress type facility preserves its barriers from the community and functions in isolation from it, however, also treasures specific values, safety and tranquillity. In this school, as the most general process and activity, "the teachers teach, monitor, assess and lead, whilst the students learn, perform, attain and follow", with the challenge "to balance security with a culture of openness and agility" (Building Futures, 2004). This infrastructural model allows to design efficient learning environments, but these will not necessarily reflect 21st century needs as they limit possibilities of school-community collaborations (OECD 2006; 2011; 2013). This was also reflected in the part of the questionnaire referring to school-community connections and in responses to the questions about how different parts of the facility serves the school community. In the latter case, the school yard or the library was not envisioned by responders as "buzzy, community spaces". As for the library, for example, 68.75% of responders from Hungary considered it architecturally (totally or fairly: 43.75%, moderately: 25%) well designed and 62% of them declared that it is well equipped, only 18.75% of them agreed that it served as a centre for the school community. While 81.25% of responding teachers from Hungary envisioned the school yard as a space optimal for leisure activities, only 43.75% of them considered it as a social space as well, and they did not specify the school yard in open-ended responses as a space suitable for school-community collaboration.

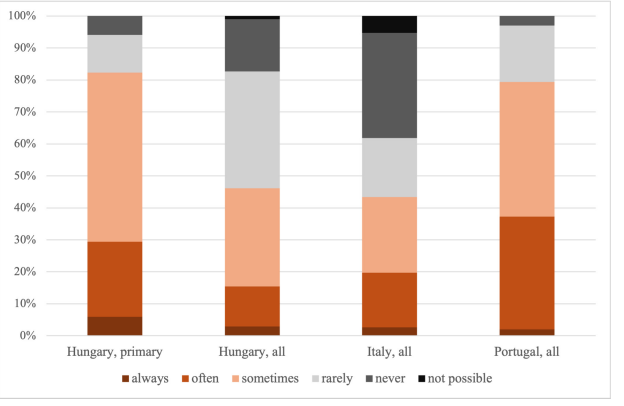
Half of the responding teachers work in schools that have modern buildings, where another five teachers work in schools that were built in the second half of the last century (31.25%), and two in older buildings. We found no correlation of the age of the building and teachers' willingness to engage in 21st century learning. The classroom sizes (in terms of floor area) vary between 30 m^2 and over 90 m^2, while the number of pupils per classroom varies between 10 and over 36 – however, the largest classroom mentioned accepts a medium size class, and generally, the floor area does not correlate with the number of students in the room. 75% of responding primary school teachers in Hungary considered the classroom size suitable for active learning. On contrast, in the whole sample 47% of teachers mentioned issues with classroom sizes when asked about specific methods and techniques of active learning. (Another contradiction, that the teacher having the classroom with the largest floor area and an average number of

pupils (4 m^2/pupil) responded that the classroom size is too small and hence unsuitable for a diversity of didactical approaches.)

Most schools have school yards: as for the primary schools taking part in the survey in Hungary, 93.75% of teachers responded that their school had a school yard and 75% of them considered the school yard suitable for pedagogical purposes. Responding primary school teachers use the school yard more often than other responding schoolteachers in Hungary, and none of them sees it as irrelevant. (As for the whole sample, 12% of the responders considered school yards as irrelevant, inappropriate or unsuitable for pedagogical purposes in general.) Many teachers regard the classroom as the primary (or exclusive) place for learning, and in questions referring to space use in the entire facility, very few of them reflect on using other areas of the school for pedagogical purposes at all. Also, most teachers do not provide frequent outdoor experiences for their students. As Figure 1 presents, less than 30% of primary school teachers reported to take students outside frequently, while over 5% never leaves the classroom with pupils; and it is still a more favourable proportion than other school types. Data from Italy and Hungary shows some similarities, while teachers from schools in Portugal seem to be more open to include at least some outdoor learning activities.

Figure 1

Outdoor experiences in responding schools in Hungary



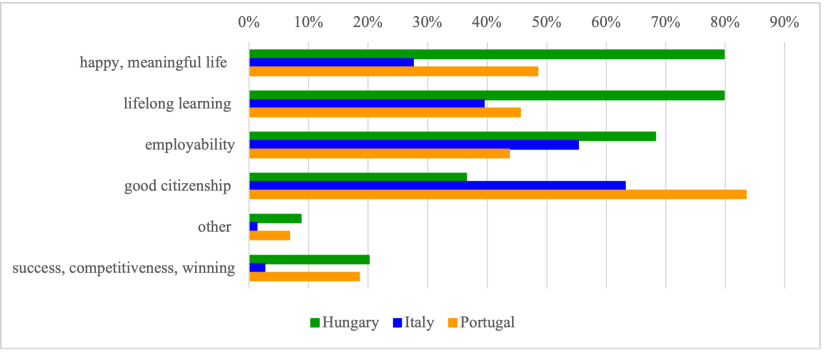
Schools' mission as local and didactical aspects of learning environments

As seen in Figure 2, responding teachers embraced shared European values about lifelong learning. A distinct difference emerged between Hungarian schools and their mediterranean counterparts though in terms of their school's mission. If taking all responders (N=283), responders in Hungary favoured social resourcefulness (happy, meaningful life), while responding

schools in Italy and Portugal prioritized preparation for democratic and economic success. Responders also listed a set of diverse other missions – often referring to local context.

Figure 2

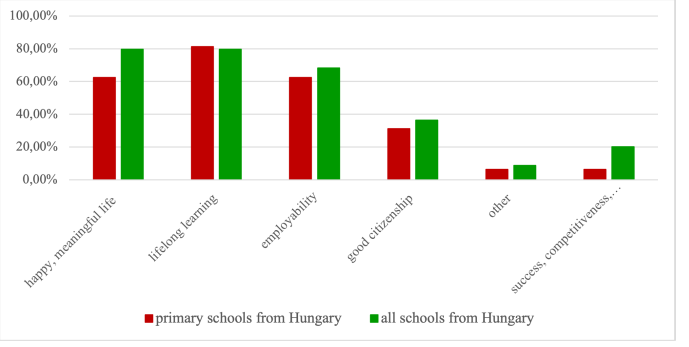
How responders envision the mission of schools in Hungary, Italy and Portugal



Comparing responses from primary school teachers to all teachers in Hungary, some other differences emerge (Figure 3). Despite the notion that the primary school places more emphasis on emotional development of pupils, fewer primary school teachers considered the aim of preparing for a happy, meaningful life relevant than other schoolteachers. Generally, they considered all offered areas less important than teachers from other school levels. Responders also mentioned a range of other missions. These were connected to values at ISCED 1 level, and generally to skills and competences at ISCED 2 and 3 levels (such as creativity, problem-solving, resilience and adaptation).

Figure 3

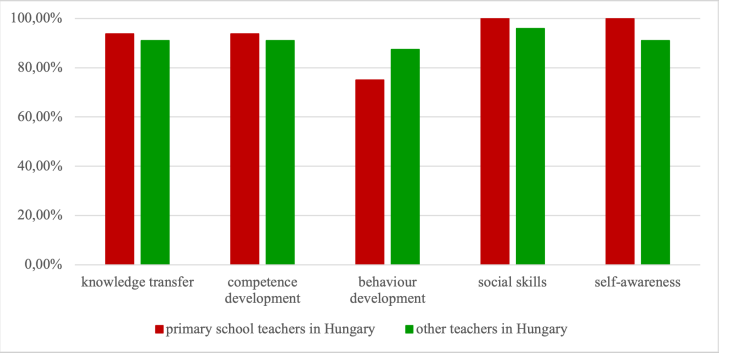
How responders envision the mission of schools in Hungary



As for schools’ aims, responding school leaders from the same schools in Hungary agreed that schools need to develop students’ competences and their self-awareness, but also improving social skills and building communities (as the most important services the school provides with 100% opting for it), and considered providing knowledge transfer (92%) and shaping students’ behaviour (83%) important as well. When examining responses from primary school teachers (Figure 4), they favour developing self-awareness and social skills (100%). Compared to other school types, primary school teachers consider knowledge transfer more important than other schoolteachers, but place somewhat less emphasis on behaviour development. This also somewhat contradicts to concepts about the role of primary and upper school levels and slightly to the mission of preparing students for happy, meaningful lives, where behaviour development at this age group could probably outscore knowledge transfer.

Figure 4

Teachers’ preferences from the responding school’s general aims in Hungary



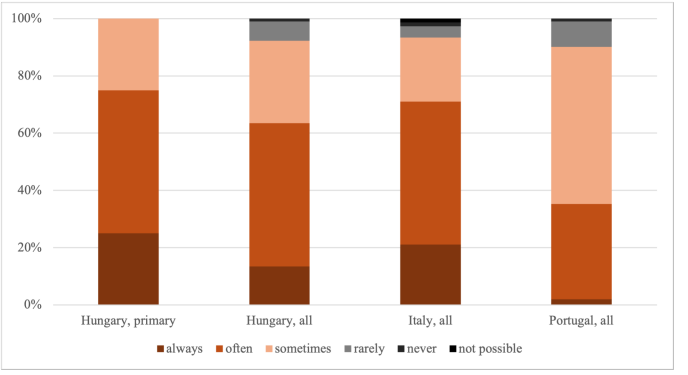
It is also interesting that while the responding teachers from other school levels in Hungary listed 16 other aims, primary school teachers did not add any more. The diversity of aims may reflect motivation but can also refer to the lack of thorough reflection in this case. Considering that the aims listed by teachers under the option ‘other’ did not correspond with that of school leaders, this may also highlight the lack of involvement in strategic thinking about the school and the challenges. Although further inquiries (including qualitative data) would be needed to identify the exact reasons, this divergent thinking is also represented in other sections where teachers reflected about the possible improvement of the schools. It is also worth noting that these added responses to the aim (as well as to the mission of the school) hardly reflected any of the future-oriented policy recommendations about transformative learning, sustainability or global education.

Teaching and learning in schools: methods as didactical elements

Most teachers self-declared the use active learning: in this respect, primary school teachers generally reported to use active learning, while in other school types it is less favoured didactics. As Figure 5 presents, the responding primary school teachers in Hungary seem more dedicated to use active learning than other teachers.

Figure 5

Teachers' self-declared use of active learning methods and techniques



When comparing responders with less frequent use of active learning or reflecting on obstacles of active learning, it appears that the willingness or the frequency of using active learning shows no correlation to infrastructure. Moreover, with the same classroom sizes and equal pupil numbers, different teachers use active learning differently. Therefore, the willingness of teachers to use active learning seems to result from professional motivation than from appropriate infrastructure. Teachers appear to be flexible about infrastructure once a motivation emerges to use active learning more often (or at all).

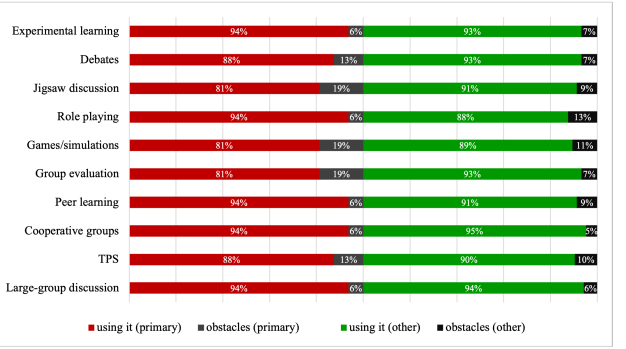
As for the obstacles, most teachers mention classroom sizes – and those who refer to small classroom sizes or inappropriate shape or organisation of the room, mention the same concerning it as obstacle to all forms of active learning mentioned in the questionnaire: even with the ones that would not necessarily require large spaces, such as peer learning or peer evaluation. Yet, the emerging didactical landscape in Figure 5 is flattering to the responding primary schools' practice in Hungary, as in the overall survey from all participating schools in the three respective countries, less than half of the teachers self-declared to use any of the specific methods. It also seems though that primary school teachers declared the active use of less methods than other teachers, which may be related to the fact that the specific methods that are embedded in their practice cover a different toolbox than included the literature serving as the source for compiling

the questionnaire. The fact that the same obstacles (size of the classroom) are mentioned with each approach that is not well grounded in the daily practice of schools in Hungary (including debates, simulations, peer or group evaluation techniques) is especially to be noticed. Research established no direct correlation between spatial organization, classroom size and the efficiency of didactic approaches (UNESCO, 2012), however design can influence the dynamics of learning (Blackmore et al., 2011), therefore this could be a reason behind these responses.

Figure 6 represents the proportion of responding teachers from Hungary regularly using specific active learning techniques and those who face obstacles (and hence do not use them). ISCED 1 teachers self-report to use all forms of active learning listed in the questionnaire, despite the fact that many of them are traditionally more often used in ISCED 2 or 3 schools. This can be explained by the sampling, which predominantly focused on innovative, ambitious schools that project partners already had connection with. An average 11.25% of responding primary school teachers faces obstacles in using them, while in other schools, this is a smaller proportion (8.07%) in spite of using active learning less frequently. While the organisation and markedly the size of the classroom is the most frequently mentioned obstacle (over 90% of mentions among obstacles, far outscoring others such as acoustics), few teachers try to rearrange the classroom. Some responders stated not to use the majority of these techniques due to spatial obstacles, while others reported to use all of them; the surprising data is that there is no profound difference between the infrastructural data provided on the classrooms by the two different groups. It seems that those who are devoted to pilot with a variety of active learning techniques find solutions to that, while others with similar circumstances cannot cope with the same problem. Besides, it can be stated that the least frequently used techniques in these primary schools (such as jigsaw discussions or group evaluation) do not have more specific infrastructural requirements than the most frequently used ones (such as role playing or cooperative groups). According to responders from Hungary, 25% of primary school teachers rearrange the classroom often, 37.5% rarely, while 5.7% of ISCED 2 or 3 teachers never and 39.4% rarely engage in rearranging or reorganizing the space. Teachers who often use active learning are the ones that often take measures to shape the environment to make it more suitable for that. It also seems that teachers using active learning more frequently are also more critical towards their school infrastructure in general.

Figure 6

Engagement in active learning and obstacles in responding schools in Hungary



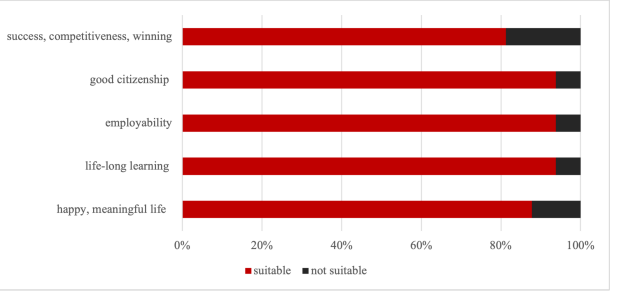
A set of questions referring to school-community collaboration and the implications to infrastructure and space use on the school's role in the community were also included in the survey. The following closed options were listed: the school (1) provides facilities and venues for local community weekend activities (0 response from Hungary); (2) supports/improves the access to information through internet access (Wi-Fi point) and/or ICT tools (0 response from Hungary); (3) provides facilities and equipment for children's playhouses, children's activities (2 responses from Hungary); (4) assists the aged people of the local community with active ageing programmes (2 responses from Hungary); (5) the school is a cultural, social and leisure centre for the local community (3 responses from Hungary). Primary schools in the sample seems have little connection to communities in the three participating countries, which in itself is an obstacle to transformative educational endeavours. Even the teachers reporting "good connection" to the community, specify this as regular parent-teacher meetings or other forms of (basically obligatory and the least minimum) cooperation. Only one school in the whole sample could underpin their statement with examples of real collaboration with their local community. As "fortress schools" are not respected as best examples of re-schooling scenarios, the isolation hinders teachers to meet a diversity of didactical approaches and impedes any cumulative, collaborative knowledge building effort teachers could take part in – although innovative and efficient schools all engage in some sort of collaboration and exchange with their broader environment (OECD, 2013). Therefore, discovering opportunities for school-community collaboration (such as community service learning and collaborative projects) could open new horizons to these schools, which could also better connect them with 21st century challenges.

Teachers' satisfaction with the facility

In the light of the learning environment, we expected that teachers would not be fully satisfied with the opportunities they offer. However, this hypothesis proved to be false. Generally, responding teachers were satisfied with the school infrastructure, stating that it is suitable for attaining the school's pedagogical aims (Figure 7).

Figure 7

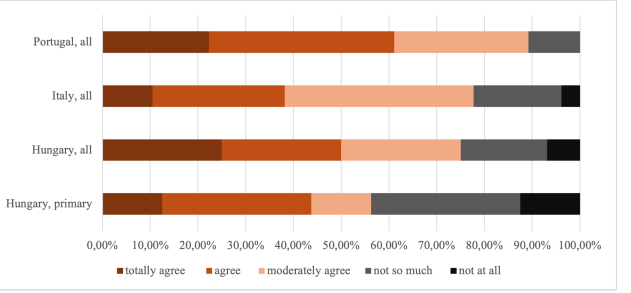
Satisfaction with school infrastructure in the light of pedagogical aims in responding primary schools in Hungary



This general satisfaction however, again, is basically influenced by the satisfaction with the classroom, as even teachers that stated that certain infrastructural elements (such as the schoolyard) were either completely missing or not satisfactory in their facility, showed overall satisfaction, which is most probably possible if the missing (or improper) elements are less important in their vision of the facility as a learning environment. The rate of general satisfaction also outscores satisfaction with the staff room or teachers' lounge, which is overall 62.5% (from individual, architectural, technical and social aspects) and 56.25% finds it at least moderately appropriate for relaxation between two lessons. Therefore, we can state that some teachers, despite their moderate satisfaction or dissatisfaction with the teachers' lounge, find the facility yet satisfactory. This is underpinned by the considerable overall satisfaction with the classroom, as Figure 8 supports, though it is worth noting that there is a correlation with the moderate satisfaction or dissatisfaction with the classroom and the active engagement in using 21st century didactics in primary schools in Hungary.

Figure 8

Responding teachers' opinions about the suitability of the classrooms to fulfil the requirements of 21st century teaching and learning



Teacher voices on improvements

Reflecting on possible improvement to the school building, responding primary school teachers in Hungary focused exclusively on classrooms, providing rather uniform responses to a whole range of questions (only considering floor area, arrangement of furniture and mostly decoration) – and in this respect shows no considerable deviation from the rest of the sample.

Responding teachers do not tend to think about community areas (including the library) or the school yard, not to mention corridors. They do not seem to reflect on the school as a whole, not even as a building – most of their reflections focus on the classroom. While they use other parts of the facility, they generally do not attain educational potential to it. Moreover, they usually suggest for improving basic well-being and 'cosmetic' factors in the classroom, with over 95% of responders mentioning decoration for all questions regarding infrastructural improvement. Although the colours, the decoration elements do influence learning (UNESCO, 2012), especially mood and performance (Stone, 2001) and may have beneficial elements on learning processes and outcomes (Davies et al., 2013), some factors have more direct effect on students' learning. Sufficient (natural) light and low noise disturbance as well as the role of sound and acoustics are well researched and envisioned as baseline factors of efficient learning (OECD, 2011; UNESCO, 2012) – yet teachers only mentioned acoustics as obstacles. It is also worth noting that although conditions that allow clear communications are inevitably beneficial, there is little evidence that classroom noise could have a real negative effect on learning quality (Bluyssen, 2016). It is also important to mention the cumulative effect of environmental factors on learning (Schneider, 2002; Earthman 2004), hence mere decoration or a bigger classroom will not resolve all obstacles.

Some teachers mentioned the need for the agility of spaces. In literature, there is a distinction between open and flexible spaces (Barrett et al., 2019),

with the remark that flexibility is more beneficial to improving educational processes. It is also relevant from the aspect of the several different stages of a learning or collaborative process that all have distinct spatial requirements (Losonczi, 2014). A well-arranged classroom can have a range of beneficial effects on students' learning (OECD 2006; Marchand et al., 2014), but the improvement of other spaces – even with such design elements as most teachers suggested in this survey – can also interact with the classroom work and the students' involvement and place attachment (Bluyssen, 2016). Also, there is evidence that once the infrastructure is above the minimum standard, the improvement has less profound effect (UNESCO, 2012). Sadly, no responder mentioned infrastructural changes that are referred in literature to improve school infrastructure making it suitable for transformative, active learning.

Conclusions: paradoxes and implications

The survey disproved the notion that "normal" schools have a limited pedagogical toolkit and are not suitable for engaging in transformative learning. Responding teachers use a wide range of active learning techniques. However, opening towards using other areas of the school building as a whole could enhance the learning experience, increasing the efficiency of the technique used. A school building may serve as a learning tool in itself (OECD, 2006) – once the users are ready to discover and utilise its potential. Responding teachers seemed to design the teaching-learning process in a way that they mainly try to tailor the didactical aspects of the learning environment to the physical and technical ones. Manninen (2007) however suggests for the inverse: to find appropriate physical, technical (and social and local) aspects based on the desired didactics. It is certainly not possible to find all these in all cases merely in the classroom – therefore, if teachers were empowered to design educational processes using the learning environment model, it is possible that they would be more motivated to move out of the classroom when relevant. Action research into using learning environment models to design teaching and learning could highlight whether this is a possible way to expand school learning from the classrooms towards the real-life settings. Also, future research could better reflect on space use in educational facilities, possibly with the involvement of students and other staff members – especially if extended to more schools, conceivably with representative sampling.

From the improvement suggestions it also emerges that responding teachers reflect on education or the school's mission in general, whereas to a considerably lesser extent on connections between the 21st century world challenges and the school itself. Although many of them make efforts to shape their environment (by regular rearrangements or decoration), this focuses solely on the classroom and the pedagogical thinking is also limited

to the actual classroom they spend most of their time in. More direct communication to teachers on future-oriented policy recommendations concerning schools' mission could create more ownership to these targets as well as stronger pedagogical awareness to the relevance of their practice. This could also trigger collaboration with local communities.

Responses to infrastructure improvement questions also suggest that a better involvement and empowerment of teachers may also initiate discourse about adapting or creating school infrastructure that serves 21st century needs. Teachers are able to provide the user's insight to educational facilities: but rarely without empowerment to see the facility as a holistic unit and without the knowledge and experience of technological and technical possibilities.

Although there was a consensus across schools and teachers involved in the survey about envisioning the school as a learning hub, this rarely corresponded with openness towards the local community of experts – these schools still envision themselves as lonely islands treasuring values and knowledge that has little link to the outside world. Experts and other stakeholders have a responsibility in initiating dialogues and establishing collaboration with schools, taking them closer to communities so that the mutual learning journey towards school types that may serve reschooling or transforming education may start. Without this, "normal schools" might stay isolated from the community as well as from the realm of the 21st century, with teachers closed up in classrooms, limiting their otherwise colourful toolbox to prepare future generations to fight crucial challenges.

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21. századi tanulás: mi a helyzet a „normál iskolákkal”? Magyarországi tanítók üzenetei

A 21. századi iskolák sokféle kihívással néznek szembe, miközben a társadalom arra ösztönzi őket, hogy készítsék fel a jövőbeli cselekvő polgárokat a bolygóméretű válság leküzdésére. Bár számos jó példa ismert arra, hogy az iskolák részt vesznek a jövőt meghatározó erőfeszítésekben, és néhány környezeti és infrastrukturális tényezőt alaposan kutattak már a tanulás minőségének javítása érdekében, mégis a legtöbb iskola valamilyen rutinra és az örökölt infrastruktúrájára alapozva próbál megfelelni a szakpolitikai ajánlások által meghatározott összes követelménynek. Egy 3 ország 63 iskolájából 283 tanár bevonásával végzett felmérésben megvizsgáltuk az iskolák küldetése, a didaktikai megközelítésmódja és az (épülethasználattal együtt értelmezett) infrastruktúra közötti kapcsolatot. Ebben a tanulmányban a magyarországi tanítók (ISCED 1) válaszaiból származó eredményeket emeljük ki és értelmezzük. A motiváció és az aktív tanulás alkalmazásának szándéka ellenére bizonyos tényezők – az infrastrukturális hiányosságok és az együttműködés hiánya – akadályozzák ezt a küldetést. Amíg a tanárokat nem tesszük képessé arra, hogy reflektáljanak az oktatás szerepére és jövőjére, és nem ismerkednek meg az építészet, a technológia és a tanterem belső berendezése adta pedagógiai lehetőségek sokféleségével, addig a tantermük fogságába eshetnek, és korlátozott erőforrásokkal rendelkezve tehetnek csak a globális változásért, miközben számos szakpolitika az oktatástól várja annak megerősítését.

Kulcsszavak

jövőbeli tanulás, 21. századi kompetenciák, iskolai infrastruktúra, tanulási környezet