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Pedagogical Semiotics of Space

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Abstract

In this paper, we deal with the consideration of space as materiality and space as a process in the broader context of childhood studies and, more specifically, in the context of school pedagogy. We outline the question of the material construction of childhood (in childhood geographies and geographies of education). Then, we consider the relationship between space and pedagogy, that is, the material aspect of learning, on an explicit level, presenting findings on the share of spatial components in student achievement. The central consideration in the paper is devoted to the concept of innovative learning environments (ILE) and its spatial requirements, especially to the renaissance of open school plans based on that concept. Furthermore, we deal with the issue of spatial mediation of power relations in open-plan schools but also in traditional corridor-type schools ("cells and bells" schools) and with the idea of shaping the identity of students and teachers through these processes. We conclude the paper with a brief review of the neoliberal nature of the concept of ILE and with recommendations on considering the space and environment for learning through the paradigms of critical pedagogy of place and common world pedagogies.

Key words: *innovative learning environments (ILE); material construction of childhood; open space school plans.*

Introduction

Every so often in the history of pedagogical thought, the consideration of space and physical elements of learning has reserved a very important place with some authors. For Malaguzzi, for instance, space will position itself in the "environment as the third teacher" syntagm and the insight that not only is furniture an agent of education, but it is also its "architect" (Malaguzzi, 2022). For Hubertus von Schönebeck (2006), this analysis will take an even more radical form in the essence of antipedagogy, questioning what even gives us the right to keep the children confined in classrooms until the bell rings. Critical pedagogical thought will contribute to the consideration of the spatial dimension of learning in recognizing the "situationality" of learning (Freire, 2005), as

well as the questioning of potentially oppressive elements of space in schools as part of a "hidden curriculum". Yet in contemporary pedagogical thought, the question of the material elements of childhood and processes of education has been actualized by the concept of "innovative environments for learning", with still vague and vast empirical findings about the result of the application of that concept in pedagogical practice. Today, this is not merely a question of pedagogical science but is especially materialized in several interdisciplinary areas, such as the geography of childhood and education in particular, the latter explicitly dealing with the position and role of space in education (Holloway, Jöns, 2012).

Over the next few chapters, we are to consider the mentioned questions, from the new material and spatial "turn" in the discourse on childhood and education, over the specific findings on the influence of space (school buildings and classrooms) on the students' achievements, followed by the reflection on the renaissance of building open-plan schools based on the idea of "innovative learning environments", ending with an overview of the questions of power in conventional "hallway" school buildings or the unique camouflage of power in the open school buildings. There is a particular inquiry on the nature of the "innovative learning environments" concept, that is, the nature of pedagogical practices within such physical environments. "Innovative learning environments" being yet another expression of the neoliberal agenda of education and effort to realize new spatial conditions set for the "students' preparation for the economy based on knowledge and corporative working environment" (Charteris, Smardon, Nelson, 2017), with which only a single dimension of the purpose of education – namely, the students' qualification (Biesta, 2015) is accomplished, in displaying the analysis of pedagogical practices, especially the practices of analyzing power manifesting in these sorts of environments, we have sought to inquire do they really manage to avoid the students (and teachers) being supervised and disciplined under the guise of "innovation" or do they merely give it a different form, thus only perpetuating the existing societal relations emphasizing *learning* in the discourse on education while neglecting the idea that every education should actually move towards realizing *freedom* (Biesta, 2010), and, at that, in a post-humanist manner, the freedom of the people *with* the world they inhabit.

In the paper, our starting point is the post-humanist paradigm (also known as the new materialism, relational materialism, or feminist post-humanism (Murris, 2016)), as a unique "navigational tool" assisting us in rethinking the place of people, children, natural and non-living material world anew, from a non-anthropocentric position that breaks up with the Cartesian's idea of Homo sapiens' dominance (Taylor, 2019) and the prevalence of the linguistic representation of the world which reduces it to the "social world" where everything non-human is disregarded (animals, nature, things, etc.) (Murris, 2016). In that sense, our stance is that of the *new wave* of childhood studies which surpass the dualism of the child and the biological and sociological

explanation of childhood (Ryan, 2011). It is through the prism of post-humanism that the involvement of the material world (the school objects) and instrumentality in the processes of considering education because the post-humanist pedagogy is adopting a unique "material turn" which ascribes the agency to the material world and "problematizes the idea that learning is taking place 'within' the child" (Murris, 2016: 6), but in the space between the person and the surrounding material world.

Material construction of childhood

Thinking about childhood as a social construct has been upgraded with the idea of "more-than-social" childhood (Prout, 2005), owing to the incentive that Deleuze and Guattari (1984, 1987) gave to the childhood theorists to start thinking about it as an assemblage of human and non-human entities (animals, plants, elements of material reality). There is now the requirement for considering *materiality, body and non-human objects,* as well as re-evaluation of the mind-body duality, triggering re-evaluation of the nurture-nature duality that the latter is based upon. There is an insistence on the intertwinement of everything in existence, with no possibility of setting boundaries clearly – everything is interrelated, and everything *is* because it is interrelated. That is precisely why *inter-action* is replaced by the act of *intra-action*, for it becomes clear that it is not about the influence, the effect of one thing on another, but about their mutual effect *within the relation* embodying both as one – "the intertwinement of human and non-human phenomena within intra-action of one with the other means it is impossible to determine where are the boundaries of a child, or a teacher, or furniture, or a drawing..." (Murris, 2016, p. 12). That way, the *post-human child* becomes the "bodymindmatter" (Murris, 2016, p. 128), being "simultaneously linguistic, social, political, natural, material and cultural" (Murris, 2016) and, as such, not being a *part* of the world but *one with it*.

Evidence from a plethora of disciplines is presently confirming that we have stepped into a new age of Anthropocene, that is, the "age of humans", as asserted by Crutzen and Stoermer (2000) at the beginning of the century. The Anthropocene childhood studies are starting to deal with the matter of "more-than-social" or "hybrid" childhood (Prout, 2005), chiefly through the "new wave" paradigms called "infra-paradigms", including the "new materialism", "posthumanism" and "non-representational theories" (or "more-than-representational theories") (Kraftl *et al*., 2020). Those traditions of thought take a somewhat different approach to the problem of a present-day person's life, so as to not again fall into the trap of an anthropocentric position in theories and research of this age. Anthropocentric position, whether deeming the man the "culprit" for or "saviour" from the state the world is today, still places the thinking in a typical Cartesian *grand narrative* of the man not living with the world, but *in* it and having an effect *on* it – the *grand narrative of the human's exclusive dominance*. Facing this, coming from the "new wave" paradigm, Braidotti insists on *post-human* ethics, the

"ethics of becoming" (Braidotti, 2013, p. 49), which are indeed to include children (but also nature and other material objects of reality) as those that are not an "incomplete human", within the "new ecologies of belonging" in which everything is as one. This post-child is, therefore, "multi-layered, nomadic, hybrid, related to both human and non-human factors and with technology as a mediator" (Aitken, 2019, p. 41).

Such world-human-child conceptualization also urges the constitution of different pedagogies. In the so-called "common world pedagogies" (Taylor, 2017), a departure from the pedagogy as an exclusively interpersonal activity is at hand and towards the research of collective learning, the learning not *of the world* but *with the world*, the mutual relations of the human and non-human, especially, hence, through the examples of learning generated by the children's everyday interactions with animals or the material reality surrounding them (Taylor, 2017). Research in the area of the geography of childhood, geography of education, early and pre-school education and care is "scaling down" the narrative (Taylor, 2020) and bringing the "minor players" into focus – children, animals, and non-material objects of reality. From the anthropocentric position, children qualify for the "minor" attribute by the *pre-* or *non*-rationality being ascribed to them, i.e., a unique "deficiency of credibility that is age-related" (Murris, 2016, p. 135). The idea is that preschool children are just the ones who still have not completely learned the "'Man vs. Nature' rules of the game" (Taylor, 2020), the ones who "successfully ignore the onto-epistemic borders separating the world into humans and others" (2017, p. 9), being, in that sense, just the ones from whom we ought to learn the potential new ways of living in a "damaged" world.

From the non-anthropocentric position, the consideration of space (space as materiality but also a process) makes a similar "entrance" into childhood studies and pedagogy.

Kraftl observes the process of "ideal childhood's material construction" (Kraftl, 2006), noting that childhood studies often disregard the involvement of the material and material practices, i.e., the effect of space in constituting the idea of childhood. Still, within the geographies of architecture, the approach to the material quite often stays on "reading" the symbols in buildings by means of the so-called representational or iconographic approach to exploring space and artifacts for children within which spaces are seen as a sign, i.e., a symbol, i.e., a language of class, race, culture, etc. Although important, that kind of approach is insufficient for understanding how those symbols are revived in the practices of everyday life in specific spaces, considering that space is conceptualized as "open, complex and relational, incomplete and constantly in the making..." (Massey, 2005, p. 59). A critical-geographical approach to architecture is therefore a necessity (Lees, 2001), through which it is possible to cover the process and the way in which architecture, with its materiality and practices, directly participates in constituting and manifesting a specific childhood. It is precisely with the assistance of architecture's critical geography that Kraftl (2006, 2008, 2013), with his alternative schools' analyses, showed how the practices of living in such spaces constitute childhood. Kraftl (2015) also offers the concept of "alter-childhood" as an analytical

apparatus for questioning those modes of childhood that are perceived as normative (today that is the neoliberal narrative of childhood (Katz, 2008)), where the concept of "alter-childhood" is not assigned as a countermeasure for the neoliberal or as anti-neoliberal, but as the other, alter- or post-, the meta- compared to the dominant one (Braidotti, 2011). Such models of childhood are shaped by the spaces of alternative pedagogical systems, schools based on the pedagogical ideas of Rudolf Steiner (the Waldorf schools) or Loris Malaguzzi (the Reggio Emilia kindergartens), the Human Scale schools, Care Farming, Forest Schooling, etc., shaped by "channeling" children's bodies and emotions through "collective habits" (Kraftl, 2016) forming within space.

So, a unique turn in the childhood sciences and pedagogy and in the architecture and geography of childhood and education has occurred. As Holloway and Valentine assert (2000), on the one hand, there is a unique "spatial turn" at work in education and childhood sciences, and, on the other, a unique "social turn" in the geography of childhood that is becoming more and more interested in children as social participants in spaces. It is apparent in the typical patterns of research in the area of childhood and education geographies. Here we have, for instance, the research of establishing children's identity in and by the spaces, i.e., the research in what way the spaces participate in "making" a child, by means of body and spirit's spatial discipline embodied in the idea that by placing a child in school we get – a scholarized child (Gorsvwnora and Rasmussen, 2018). On the other hand, the way where the perception of childhood determines the meaning and use of place and space is also researched, that is, how the perception of the position and role of children in public spaces changes depending on the notion of a child as "innocent" or "mischievous", or similar (Holloway, Valentine, 2000). It is about a bilateral influence; as Kraftl points out (2019), the school both "symbolizes and materializes childhood" (2019, p. 444).

Kraftl (2016) speaks of "channeling the body" in and by space, Gorsvenor and Rasmussen (2018) discuss "managing by design", Lange (2018) talks about "designing childhood" by the material world, whereas shades of Lefebvre's thesis (2007) suggest that space actually "breaks" or "contorts" the body through specific spatio-temporal practices and routines, actually "house-training" it (Lefebvre, 2007, p. 39). This "training" type is based on repetition and rhythms. Discussing "managing by design", Grosvenor and Rasmussen remark that it is not about a unilateral act with which, through the decisions of educational policies and an adequate school design, the space is simply created in order to produce desirable citizens – it is that the design of space is more of a "working process" than a "project of the mind" (Ingold, 2013, per Grosvenor, Rasmussen, 2018, p. 22), i.e., it contains materiality (and not only conceptuality), the materiality which is "produced, but also productive, generated, but also generative" (Barad, 2007, p. 137), which only confirms the bilateralism of the relation between space and childhood.

Let us now briefly consider the empirical findings on the nature of the physical environment in relation to learning.

Space and pedagogy: at first glance

The interest in pedagogic theory dealing with the material aspects of education and, in particular, physical space, then also embodied within educational policies, arises because of the growing empirical evidence about spatial elements of reality influencing the process and outcomes of learning. The relationship between pedagogy and space (of a school building) has been considered in abundant research that points to the unambiguous influence of physical elements of a place on student achievements. One obvious example is the research of Clever Classrooms organization, conducted as part of the HEAD project (Holistic Evidence and Design) in 153 classrooms, 27 very different schools, for 3766 students. With complex, multilevel statistical modelling, it managed to measure the impact, i.e., the influence of school/classroom physical elements on the students' achievements, isolating them from the other factors that could influence academic success. It is the first study of this sort that succeeded in treating the problematics of the space influence on the students' achievements holistically, with the key finding that the entire 16 % of the achievements' variance is possible to explain with the space factors (Barret *et al.*). If it appears that the 16 % variance is a small percentage, for comparison purposes, a meta-analysis of Ney *et al.* (2004, per Barret *et al.* 2015) shows that the teachers' influence on their students' achievements varies from 7 % to the maximal 21 %. In the research of Barret *et al.* (2015), three groups of factors influencing the achievements have separated themselves: 1) naturalness — the light, the temperature, the quality of air, etc. (49 % of the overall space influence on the students' achievements); 2) individualization —the adjustment of space to the needs of the group or the individual since every person has a highly personalized response and reaction to space (28 % of the student achievement influence); and 3) the level of stimulation, that is, the visual complexity and appropriate use of colours (23 % of the overall space influence). On the authority of the results stemming from the meta-analysis of 129 publications (Barret *et al*., 2019), the school's accessibility is added to the mentioned factors: smaller schools, with geospatial implications of denser arrangements in a local community, also contribute to student achievements, as well as the classes with fewer students.

Considering the materiality of education on an example of "innovative learning environments"

On the authority of the ever-growing base of empirical evidence about the involvement of the material dimension in the learning context, the outcomes of education (measured by the specific school achievements, or, as we are to see in later chapters, materialized in the forming of certain identities of students and teachers in schools), contemporary theory and education policy also unambiguously include the demands for material construction of learning. For example, emphasizing the spatiality of education is very clearly connoted in the "environment for learning" context, actualized since the mid-

2000s within the OECD/CERI project dedicated to "innovative learning environments" (ILEs)[1]. In that syntagm, the environment is understood holistically, dominantly as an interaction of multiple components: the student, the teacher, the content and space, as well as the technologies that mediate learning being the key (Dumont *et al*., 2010). We are only to sketch the typical understandings of learning in that project, and how they also paved new ways in comprehending the role of space in learning.

Per Dumont *et al*. (2010), several major courses of changes have caused "learning to be(come) the center of attention", ergo causing new/old rethinking of the learning environments as pedagogical and physical spaces to arise: the transformation of societies from those based on industry to those based on knowledge, thus bringing the "21st-century competencies" into focus; standardized international measuring of the learning outcomes; the growth of the knowledge on the multidisciplinary basis of learning; development and influence of ICT on every public sphere, even the education with the possibility for polysynchronous learning through a combination of face-to-face learning and asynchronous and synchronous online communication, i.e. learning (Dalgrano, 2014), etc. That has most certainly caused an emphasis on the importance of lifelong learning as well, with "21st-century competencies" being its elementary prerequisite. On the basis of the mentioned skills and as per numerous authors, the ultimate goal of learning lies in the acquisition of adaptive expertise/competencies (Bradford *et al*., 2006; Hatano and Inagaki, 1986; De Conte, 2007) – the ability to (in different situations) apply the knowledge and skills acquired by meaningful learning flexibly and creatively. Therefore, it is not about mastering some knowledge and skills within a discipline, but about the will and ability for the constant expansion of core competencies, which consequently makes the adaptive skill the basis of lifelong learning. Per De Corpe (2010), in the process of developing adaptive competence, it is essential to comprehend four different qualities of effective learning (CSSC learning): learning is constructive (C), self-regulated (S), and situated (S), i.e., contextualized and collaborative (C). Each new episode of learning is contextualized, and precisely as a part of a direct environment for learning. The key principles of "innovative learning environments" (Dumont *et al*., 2010; OECD, 2017) are these:

1 The students are at the center of the learning process – their active involvement is encouraged, and their own perception of the things they learn is developed (metacognitive skills). The key is to make the students "self-regulated", that is, the students developing metacognitive skills; supervising, evaluating and optimizing the acquisition and use of knowledge; regulating their emotions and motivation; successfully managing their learning time; setting more personal and distinct goals, supervising and managing them.

[1] We talk about "innovative learning environments" on the authority of *The Nature of Learning: Using Research to Inspire Practice* (2010), *Innovative Learning Environments* (2013) and *The OECD Handbook for Innovative Learning Environments* (2017).

2 The social nature of learning is recognized and cooperative learning is encouraged.
3 The teachers recognize the key role of emotions and motivation of students in learning and adhere to that, the application of technology in learning, cooperative learning, research learning, learning for the purposes of community, and the like.
4 Individual differences among students, including their prior knowledge are recognized and accepted in classes.
5 Classes should be challenging to all students – guiding them to the zone of their future development.
6 Classes are such that the outcomes are clear and the strategies of evaluation analogous to the outcomes.
7 The learning environment strongly encourages the horizontal alignment of knowledge across the subjects (an integrated, phenomenological curriculum), but also across the social/natural community and the whole wide world (the true example being the concept of service-learning).

Pedagogical modes through which the listed principles could be satisfied are certainly diverse and can hardly be accomplished by exclusively engaging frontal teaching. Among other things, the contemporary clusters of innovative pedagogies (Paniagua, Istance, 2018; Istance, Panigua, 2019) recommend the pedagogical modes of physical learning, computational thinking (a combination of mathematical, scientific and digital literacy for the learning of diverse transversal skills through ICT), multiliteracy and discussion, gamification of learning (Flatt, 2015), experiential learning (project-based learning and service-learning) and blended learning ("flipped" classroom, laboratory learning and a combination of online and face-to-face learning models).

Although not a novelty in numerous segments, such conceptualization of innovative learning environments requires a shift in pedagogical paradigm which would have to happen on four key levels. On the level of the teaching practice, it is about the shift from individual work to the teacher's work in pairs or teams; on the level of pedagogy, there is a demand for the shift from the pedagogy focused on the teacher's actions to the student's activities; regarding the curriculum, the change implies the shift from the subject-based curriculum to the integrated/phenomenological ones, and last but not least is the change in the community level, requiring the shift of focus from the classroom as the primary space of learning to the environment for learning, the communities and the learning network (Nair, 2014; Nair *et al.*, 2019). Thus altered pedagogical paradigm also requires different schools – "even the most subtle changes in the school design can significantly affect teaching and learning" (Nair *et al.*, 2019, p. 26). The authors cited see the pedagogy-school space relation as the software-hardware relation in which, for the successful functioning of a unit, both components have to be completely compatible (Nair *et al.*, 2019). With their design, modern schools would have to follow the principles of learning as an authentic act carried out by means of multimodal pedagogies within the interdisciplinary curricula, connected to the environment, direct and broader social community, with the learning personal and

personalized and not time-limited, self-centered and age-heterogenous, entailing the teachers' teamwork (Nair and assoc., 2019). In practice, it would mean that the new school buildings are actually going to look differently from day to day, week to week, and year to year (Nair, 2014, p. 40) because the school spaces are essentially to become the hardware complementing the variable and multimodal software (pedagogy), thus becoming the "learning buildings", that is, the buildings "changing in time by 'learning' from the users occupying them" (Nair *et al*., 2019, p. 28).

Spatial requirements of "innovative learning environments"

The pedagogy of innovative environments also makes new requests about school architecture. It has been acknowledged that the typical "traditional" schools with classrooms, the so-called "cells and bells" schools (Nair, 2014), or corridor-type schools (typically, the schools with classrooms along the hallways) are not adequate for maximizing the effects of the described learning concepts. We do not need to go so far as to declare classrooms pedagogically outdated and redundant (as did Nair, 2011), but it cannot go unobserved that the classroom concept has been gradually perishing from educational policy documents (in Western Europe, at least) and that is being replaced by the concepts of different pedagogical-spatial meanings, such as the "learning environment", "learning studio", "learning street", "learning community", "learning ecosystem", and the like (Nair, 2011, 2014).

Regarding school architecture, those visions of innovative learning environments are typically embodied in the new wave of "open schools", i.e., "open plan" schools. Many countries are following suit – the United Kingdom, Iceland, Australia, New Zealand, Sweden, Finland, Norway, and many others (Niemi, 2020; Grannas, Stavem, 2021; Sigurðardóttir, Hjartarson, 2018; Benade, 2016). Learning environments in such schools usually imply several modes, with a diminishing participation or total exclusion of traditional classrooms (Dovey, Fisher, 2014; Nair, 2014; Nair, Doctori, Elmore, 2019):

– commons – a space larger than a single classroom that must not be enclosed/rearranged into a classroom; it is not a transit area, that is, it is not a link for other classrooms and common rooms; there is not too much crowd in it, i.e., the circulation of students and teachers – therefore, it is not a typical hallway space with the primary function of communication and transit; on the contrary, it is primarily a large learning space;

– streetplace/learning street – an open, three metres wide learning space (wider than a typical school hallway) allowing both learning activities and transit; it also must not be enclosed/ rearranged into a classroom; it is transit-friendly because it is connected to all other classrooms; that is the space for the circulation, informal meetings, spontaneous conversations, and organized learning;

– meeting area – a smaller learning space for 5 to 20 students, smaller than a typical classroom, that is, smaller than 40 m^2; seminars and lectures can be organized there, and the main criterium of the space is not to be the size of a traditional classroom;

– **the fixed purpose spaces** – spaces intended for the specific subjects/cabinets;

– **the outdoor learning space** – an external component, but is, by design, also defined as an integral part of the learning cluster, usually called "outdoor learning" or "outdoor classroom";

– **learning studio** – where, combining them, that is, removing the separating walls, i.e., partitions, we can get a larger learning suite;

– **quiet commons** – usually the space between the learning studios which allows individual work, work in silence and similar things;

– **breakout** – a space that allows the student a short break, i.e., isolation.

In their design of school spaces, Nair and Bosch are particularly inspired by the primordial metaphors of learning (Thornburg, 2001) as a campfire, that is, learning from experts/teachers; the watering hole learning, that is, learning from peers and alongside them; the cave learning, that is, learning through introspection, and finally the life learning, that is, learning through work and by solving the specific life problems. Those metaphors are unambiguously recognized in the school interior of the mentioned architects in the form of various space modes – conspicuous and open spaces for assemblies and collective learning, small, inconspicuous niches for introspective learning and individual work, etc. (some of the mentioned designer solutions can be seen at https://rosanbosch.com/).

In order to create spatial conditions for different pedagogical modes acknowledging innovative learning environments, flexibility is also the key spatial feature of schools based on these ideas, unlike the wide openness of space, something that certain authors are radically advocating (Nair, 2011). Per Dovey and Fisher (2014), flexibility can be understood as reverse malleability that implies the possibility of departing from the traditional pedagogy and frontal teaching and going toward the aforementioned co-constructivist pedagogy, which is recognized in space as the possibility of opening, i.e., of closing the space (of a classroom) anew through an "architecture of reversible change", according to the needs of a learning activity. Apart from that, flexibility can be understood as the fluidity or agility of space, as regards the capacity for the flow and change of the learning space in such a way that it can support various learning modes. The authors assert that new schools must offer a stable sense of space, yet not in a way to resist the pressure of changes and revert to the original state, but to actually adjust to the changes without falling into a negative pattern of discipline (of a rigidly structured classroom school) or finding themselves on the edge of a precipice (of a wide open "no-walls" school). In that sense, the designs of diverse learning spaces and high levels of fluidity are the most resilient ones.

Pedagogy of open-plan schools – *pros* and *cons*

Pedagogical practice in open-plan (or atypical classroom-plan) schools can look very diverse – combining more classes (40 to 100 students) and more grades, teachers working in pairs or teams, occasional lecture-style teaching with larger groups of students excluded, yet it dominantly implies students working in smaller groups or

teams and pairs, as well as the teacher-student individual work. The openness "breaks" the material, social and cultural structure of the traditional classroom and schooling, specifically, by preferring teacher collaborative work in pairs and/or teams" (Niemi, 2020). That also entails a more flexible architecture of the time, i.e., a schoolday, the pedagogical and spatial change in some of the countries thence also requiring a transition from the double-shift to the full-day school system, within which the time most often is not fragmented into 45 or 90 minutes, but the rhythm of learning is adjusted to the students' individual rhythms. The ILE environment research shows that thus spaced pedagogical practices take place precisely there where the emphasis is not on the regimes of scheduling classes, routines, movement, and the like, but on the teacher's and student's understanding of using space as a learning resource (Saltmarsh *et al*., 2015).

"The first wave of the open-school building started in the 1960s. From England, it carried over to America, but by the 1980s, the popularity of building such schools was already in a significant decline (Nair, 2014). The reason for it was dominantly seen (by the authors) in a discrepancy between the architectural and the pedagogical shift since the new, open spaces with no classrooms also demanded new pedagogical practices for which, as it turned out, the teachers were not ready enough. Nair points out that the key oversight was that 'nobody notified the teachers' about the upcoming spatial change (Nair, 2014) so they did not even have the core education for the particularities of pedagogical work in such environments, nor the support for the emerging pedagogical problems in the new school ambiance they were undoubtedly facing (Brogden, 2007). Most often it has resulted in reverting to the "default pedagogies" under the strong influence of institutional memory and routines (Niemi, 2020), even in the reconstruction of the open-space compartmentalization and classroom walls" (Franklin, 2015; Grannas, Stavem, 2021). In many present-day open-space schools based on the concept of innovative learning environments, the challenges of disharmony between the pedagogical and architectural change also appear. The research has shown that the present-day open-space schools could easily repeat the 70's and 80's failure if the coordination between the clearly defined meaning of innovative learning environments (ILE) and the teacher support for establishing the pedagogies adequate for such spaces is insufficient.

What stands apart as a special challenge in plentiful research of present-day open-space schools is the complexity of teachers working in teams (Campbell *et al*., 2013), which, among other things, also means a singular deprivatization of the teaching process (Charteris *et al*., 2017; Charteris, Smardon, 2018) and brings about a "psychological change" for the teachers (Niemi, 2020). According to some research findings, a complete "success" of the open-plan schools (or those more open and flexible) takes place in those schools that have a strong unified vision of the entire teaching and managerial staff. This way, the problems and challenges of teachers working in pairs or teams are eliminated (Gislason, 2009, Cardellino, Woolner, 2020). The idea of transformation,

both pedagogical and spatial, must be clear and transparent and every single teacher must accept it (Niemi, 2020). That is when teachers demonstrate a significantly higher level of engagement and inclusion in the development and defending of their pedagogical ideas in a team, their ethical responsibility thus also solidifies in a way. That certainly only contributes to the quality of work in such schools thanks to the accumulation of professional capital (Hargreaves, Fullan, 2012), because open plans essentially require a professional collaboration among teachers (Sigurðardóttir, Hjartarson, 2011; Sigurðardóttir, Hjartarson, 2018). The success of such pedagogical and spatial transformation in a school greatly depends on "adopting a unified vision" of change (Niemi, 2020, p. 14), which points to the bottom-up (or inside-out) approach to the pedagogical change that, hence, does not commence on the level of educational policy and grand narratives of any kind, but on the level of pedagogical transformation of every single teacher, within the school as a network and community of learning.

How a school space forms identities: the practices of power in school architecture

After we sketched out the understanding of learning space in the context of contemporary theories and educational policies, as well as shortly introduced the evidence for the role of physical space in student achievements, we will also examine the effects of space as an educational factor in the process of shaping the identity of students and teachers.

In order to deal with this matter, we have to begin with an understanding of space as the process of social construction (Lefebvre, 1991). Namely, in his dialectics, Lefebvre concludes that school space is but a fluid process that shapes and is shaped by the everyday spatial practices of teachers and students (Lefebvre, 1991). He sees space as a tridimensional set, with spatial dialectics at the centre of it, providing the basis for interpreting the creation of space as a dialectical process. Hence, the very analysis of social processes should shift its focus from the things in space towards the space production – how, as a social-material phenomenon, it comes to be and is in a constant process of "creation". The productive connections of spatial-social relations are discernible (Benade, 2016), the physical aspects and space being the intermediaries of social relations (McGregor, 2004). In that sense, no space can have neutral value, it being a party in the education process that is never neutral, i.e., is "necessarily ethical" (Meirieu, 2014). The schools, therefore, are not some objective set of physical things, i.e., entities, but an active organization of "agents, factors, within the complex networks which include beliefs, actions, and practices of the employees and the students" (Gislason, 2010; Mulcahy *et al*., 2015).

In that sense, school stops being solely seen as the space within which an educational activity is taking place, the interest also gradually moves on to the socio-spatial processes in them, the functioning of social norms within the institution, the body regulation in spaces, the identity (re)production, very often pointing to the matter of controlling

the individual in a space and the (in)capability of resisting it (Cook-Hemming, 2011). This way, the school space is notably connected to the functioning of the hidden curriculum, the specific architecture of space, and the architecture of time which establish strictly determined power relations among all the factors in the education process – the students, the teachers, and the material factors. In that sense, the shift from the traditional to constructivist pedagogy and from schools with classrooms to more open spatial assemblages can be seen as the shift from the Foucauldian to the Deleuzian power-relations approach (Dovey, Fisher, 2014, p. 59).

Material "production" of power: classrooms and open spaces

In the traditional "cells and bells" schools, Piro (2008) detects the surveillance architecture on the principle of Bentham's panopticon, especially the part on the physical discipline, serializations, and classifications, that is, the malleability of "docile bodies" (Foucault, 1997). That is also accomplished in the "traditional" classroom schools with an appropriate architecture of the time, the "disciplinary time" (Foucault, 1995, p. 159) or "school bell tyranny" (Nair *et al*., 2019, p. 35).

Let us consider a few typical examples of school spatial elements' hidden formative meaning.

Namely, in his study, Zhang (2021, 2019) reveals that the classroom space is not a passive, objective factor of the environment, but a meaningful space which, in the case of his study, transmits ideological beliefs by means of student seating arrangement. Numerous authors recognize that the seating arrangement in a classroom is used as a very important factor in managing school activities and interactions (Zhang, 2019). In his research, Zhang also gives a hierarchy of positions in a classroom: from the "golden" ones to those less desirable, the least desirable, and "special" places – the least desirable ones being the most common. He asserts that, in arranging the students to their seating places and even arranging their seat partners (in the process of additional fine-tuning of controlling the student with space), a special ethos is created. As he subsequently points out, the classroom is a socio-moral space that, as such, can influence learning both positively and negatively. In moralizing over the seating arrangement in a classroom, teachers influence students' academic achievement (Zhang, 2019). This research speaks in favour of space as a permanent process of creation, because the meaning of space is socially mediated – "as teachers ascribe meanings to certain places in a classroom, the physical configuration within it is being transformed in the semiotics of space" (Zhang, 2021, p. 12).

Teachers implement their pedagogical practice by using the entire array of semantic resources that, apart from the language, also imply gestures, eye contact, images, movements, etc. Specifically, the "spatial pedagogy" (Lim *et al*., 2012, p. 236), based on the semiotics of space, i.e., the teacher's choice of positioning, movement, and the rhythm of moving or standing at a particular place in a classroom (Lim *et al*., 2012, p. 248) is also at work. Spatial pedagogy works through the ways in which a teacher

would use the classroom, i.e., moving and positioning in space. The classroom spaces are constantly negotiated and reconfigured in two distinct ways: statically – by the teacher's positioning in space, at a specific location, and dynamically, by the teacher's movement and the movement tempo through the space. The specific location in the space becomes meaningful because, from a specific position and through gestures and language, teachers send certain meanings, messages about their behaviour, intentions, etc., so the strictly determined configuration of semiotic choices in the pedagogical discourse occurs at a strictly determined place and identifies with it.

In the classroom context, the majority of interactions occur within the social-consulting space (Hall, 1966). In that context, based on their research, the mentioned authors suggest a division into the authoritative space, personal space, supervision space, and interaction space (Lim *et al.*, 2012).

– The authoritative space: usually the one distanced from the students the most, located behind the teacher's desk and chair; most frequently, it is the place from which the "lectures" are held.

– The supervisory space: it is a space a teacher uses to "control" the students and usually implies the walk, i.e., the "patrol" (Lim *et al.*, 2012, p. 238) between the desk rows while the students are preoccupied with an assignment, with no concrete interactions, i.e., consultations with the students.

– The surveillance space falls under the supervision space, having the position of particular control and power implemented implicitly, through the teacher's "invisible" supervision of students; it is usually the space at the back of the classroom, the students having their backs turned to their teacher, aware of the supervision; it is some sort of the panopticon sending the message of "constant supervision".

– The interactional space: occurring with the teacher standing between the rows or next to a student's desk during the student's activity, thus implying proximity enabling an interaction, communication, and reduction of interpersonal distance; that interaction usually has the form of personal consultations in which the teacher explains or corrects a thing, gives further instructions and things like that.

– Personal space: usually the space around the teacher's desk which, according to the meaning the teacher could assign can also be turned into the authoritative space or "simply" personal space for the teacher's possessions and things like that.

The authors conclude how the teachers' use of space through their positioning and moving represents a significant semiotic source for effective pedagogical discourse.

Although we discussed the "disciplinary" use of space in classrooms, a question emerges about whether the no-classrooms/walls schools, the open space schools are necessarily stripped of the mechanisms of supervision and discrimination mediated by the elements of material reality, or are the mechanisms merely remodelled or camouflaged.

Traditional classrooms imply the architecture of order and supervision and assign a specific task to a specific space, with firm boundaries between certain places within the

school. In the contemporary, usually open-space schools, what is at work from the spatial perspective is less categorization and standardization and more connectivity and flow; in a certain way, spaces are "smooth" and function in the rhizomatic or network spatial structures. The transition from classroom to open (or semi-open) spaces represents a unique movement from the discipline assemblage to the assemblage of becoming. The top-down hierarchy, characteristic of the typical corridor schools, implying a *power over* (or *predominance*), shifts into the distributed, shared empowerment of students (and all the other participants), that is, shifts to a *power for*. In open-space or cluster-organized schools, the management is not centralized – in a way, there is an absence of the centre, an absence of predictability at work, while the system is self-organizing, with its rhizomatic approach to learning, and managing, whereas space organization is emphasized (Deleuze, Guattari, 1987). Even though all schools are established through certain hierarchical structures (some sort of control and management of the principal, teachers, curriculum, class schedule, and other similar systems), learning in innovative learning environments (and often in open-plan spaces) revolves around the horizontal rhizomatic networks of interactions.

Open-space schools are understood as the connectivity-and-flow architecture. Such learning spaces are assemblages, the units formed through the mutual connectivity and flow between the parts – a socio-spatial cluster of mutual connections between the parts where identities and functions of both the parts and the whole arise, i.e., rise from the flow/overflow between them. The dynamism of such assemblage includes the way in which the territories and boundaries are established and erased and the ways in which the identities are expressed, formed, or transformed – the way in which the learning space closes, that is, opens, i.e., its fluidity is used. A classroom, nevertheless, is not an assemblage, but a territory, a stabilized zone of order "keeping the chaos at bay" (Dovey, Fisher, 2014). Deterritorialization, i.e., freeing a classroom of its walls implies a movement, an act by which the territories erode simultaneously with the formation of the new assemblage – the teacher "possessing" the classroom merges into the "physical assemblage of resources, bodies, and spatial conditions" (Charteris *et al*., 2017, p. 12). In that regard, the traditional classrooms are fixed territories, while the spaces designed for the new pedagogies are relatively deterritorialized.

In innovative learning environments, a matter of student aggression is also possible to contemplate in a new, socio-material way – as Charteris and Smardon do in their research, through the agency of new materialism, with the onto-epistemological approach in which the cognitive process is understood as a distributed practice, in relation to everything existing in the space – human and non-human beings and materials, discourses and objects (Charteris, Smardon, 2017; Charteris and assoc., 2017). New materialism positively leads to the decentralization of human centrality, adopting the idea of the matter's agency (Charteris *et al*., 2017, p. 2). The things influence the student and teacher activity in the space with their flexibility, and as the agency objects, they take part in "what was possible in the spaces and made learning in different parts of the classroom possible" (Charteris, Smardon, 2017, p. 12).

So, what about the matter of supervising the students in open-space schools?

In their analysis of the school principles' attitudes about the functioning of innovative learning environments in New Zealand, Charteris *et al.* (2017) highlight recognizing the staff's urgency for the students not to "escape the pedagogic gaze" in such environments, considering the spatial distance and fluidity in such space, as well as the body's unrestraint within the rows of chairs and desks. The new spaces require a unique "self-surveillance" of the students themselves because the teacher relation is also being lost as the primary thing since they now work in groups of two or more classes. In innovative learning environments, the teachers' spaces (the staffrooms) are most frequently incorporated within a smaller learning cluster (unlike the "cells and bells" schools where they were physically separated, usually in the autonomous parts of a school building), for the most part with no distinct name on the door of such room/space – all for the purposes of a singular students-teachers co-location, i.e., the distance diminishment. This poses the question of whether these tries appear as the new forms of discipline and control, in a unique "camouflaged surveillance" (Dovey, Fisher, 2014, p. 60), i.e., "by producing new forms of surveillance: one panoptic regime is replaced by another" (Dovey, Fisher, 2014, p. 60). That way, we actually move from the *regime of discipline* towards the *regime of control* (Dovey, Fisher, 2014; Charteris *et al.*, 2017).

To *be* or *work* in "innovative learning environments"

We would like to conclude this paper with a short overview of the nature of the concepts regarding innovative learning environments and warn about the need for a different understanding of "environment" in that syntagm, outside the education market discourse.

The idea of innovative learning environments (ILE) rests on a neoliberal hypothesis which is, essentially, of the anthropocentric orientation, embodied in the idea of autonomous, self-regulated individuals that, in the education process, should develop the key competencies which should enable them to be optimally competitive on the labour market, simultaneously making national economies optimally competitive on the global market, all with a key premise of investing in human capital and developing economies based on knowledge (Olssen, Peters, 2005). In the ILE rhetoric, looking up to the job/workplace/labour market is openly present, promoting the capitalist values of profit, responsibility, and the like, as a typical "top-down" political paradigm "applied to education" (Deerness *et al.*, 2018, p. 160). As Deleuze points out, "just like the corporations have replaced the factories, continuous training aims to replace schools, with continuous control replacing the examination. It is the safest way for schools to give in to corporations (Deleuze, 1992, p. 5). Instead of constantly questioning the effectiveness of education, Biesta believes that the focus should be on "good education" (Biesta, 2015). In the modern-day discourse about education, Biesta discerns the dominance of the "learning" idea (unmistakably present in the syntagm

of innovative learning environment), that is, a singular "learnification of education" (Biesta, 2010), that has in a way replaced the education theories (as a phenomenon and a process) and clouds a fundamental question of the purpose of education as a teleological human activity (Biesta, 2015).

We agree with Deerness *et al*. (2018) about the necessity of re-considering the understanding of *E* (environment) in ILE, relating to the ecology of those that learn and the place of learning, particularly pointing out the "everything's related" principle (Deerness *et al*., 2018, p. 156), so that in thus understood architecture, the "bodies and spaces are in a relation creating people and places". Here, the use of *critical pedagogy of place* (Gruenewald, 2003), resting on the postulates of cultural decolonization and ecological rehabilitation and not being solely interested in the struggle against the oppressive elements of social relations and *freedom from* but also *freedom with* the world, the world of humans and the world of nature and material reality. Critical pedagogy of place distances itself from the standardized learning experiences (even through the standardized spaces and environments for learning) and the standardized adjustment of students to the needs of the global economy. Rather, it insists on the space as the "primary experiential or educational context" (Gruenewald, 2003, p. 7), through which the students' engagement in multidisciplinary, multigenerational learning can be increased, which is not only educationally relevant but also socially engaged and it contributes to the well-being of the community it is immersed in (through *service learning*, for instance) (Gruenewald, 2003). Critical pedagogy of place is thus interested in the identification and recovery of the place and space that provides us with a good cohabitation (re-inhabitation), as well as identification of those thought patterns that colonize the "others" – people, spaces, places (decolonization). *Common world pedagogies* (Taylor, 2017) are on the same trail, based on the posthuman ontology, by means of which learning and childhood are seen as inseparably attached to life, biological, social, and material world, and pedagogy stops being immanent to humans alone – it is not about "learning about the world", but "learning with the world", in the intertwined relationships of human and non-human entities (animals, nature, material world).

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Pedagoška semiotika prostora

Sažetak

U radu se govori o razmatranju prostora kao materijalnosti i prostora kao procesa, u širem kontekstu studija o djetinjstvu, a konkretnije u kontekstu školske pedagogije. Skiciramo pitanje materijalne konstrukcije djetinjstva (u geografijama djetinjstva i geografijama obrazovanja). Potom se analizira odnos prostora i pedagogije, odnosno materijalne dimenzije učenja, na eksplicitnoj ravni, dajući prikaz nalaza o udjelu prostornih komponenti u učeničkom postignuću. Središnje razmatranje u radu usredotočeno je na koncept inovativnih okružja za učenje (ILE) i njegovim prostornim zahtjevima te naročito renesansi otvorenih planova škola zasnovanoj na tom konceptu. Nadalje, govori se o pitanju prostornoga posredovanja odnosa moći u školama otvorenoga, ali i tradicionalnog koridor-tipa („cells and bells" škole) te oblikovanjem identiteta učenika i nastavnika tim procesima. U zaključnom dijelu donosi se kratki osvrt na neoliberalnu prirodu koncepta ILE-a i preporukama o razmatranju prostora i okružja za učenje kroz paradigme kritičke pedagogije mjesta i pedagogijâ zajedničkoga svijeta.

Ključne riječi: *inovativna okružja za učenje (ILE); materijalna konstrukcija djetinjstva; otvoreni planovi škola.*

Uvod

U povijesti pedagoške misli je, s vremena na vrijeme, u pojedinih autora razmatranje prostora i fizičkih elemenata učenja zauzelo vrlo važno mjesto. Kod Malaguzzija će se, na primjer, prostor pozicionirati u sintagmi „okružja kao trećeg učitelja" i u uvidu da namještaj ne samo posreduje obrazovanje, već ga i „proizvodi" (Malaguzzi, 2022). Kod Hubertusa von Schöebecka (2006) ta će analiza uzeti i radikalniji oblik, u duhu antipedagogije, u pitanju odakle nam uopće pravo držati djecu zatvorenu u učionicama dok ne pozvoni. Kritička pedagoška misao dat će svoj doprinos razmatranju prostorne dimenzije učenja u prepoznavanju „situacionosti" učenja (Freire, 2005), kao i u propitivanju potencijalno opresivnih elemenata prostora škole kao dijela „skrivenog kurikula". U suvremenoj pedagoškoj misli, pak, pitanje materijalnih elemenata djetinjstva i procesa obrazovanja aktualizirano je, posebno u europskoj obrazovnoj politici, kroz koncept „inovativnih okružja za učenje", s još uvijek nejasnim i nejednoznačnim empirijskim nalazima o učincima primjene toga koncepta u pedagoškoj praksi. Danas ovo nije samo pitanje pedagoške znanosti, već je naročito materijalizirano u nekoliko interdisciplinarnih područja, posebice u područjima geografije djetinjstva i

obrazovanja, od koji se, ova potonja, eksplicitno bavi pozicijom i ulogom prostora u obrazovanju (Holloway, Jöns, 2012).

U nekoliko narednih poglavlja razmatraju se spomenuta pitanja, od novoga, materijalnoga i prostornoga „zaokreta" u diskursu o djetinjstvu i obrazovanju, preko konkretnih nalaza o utjecaju prostora (školske zgrade i učionica) na učenička postignuća do razmatranja renesanse izgradnje otvorenih planova škola zasnovanih na ideji „inovativnih okruženja za učenje", zaključno s osvrtom na pitanja moći u konvencionalnim, „hodničkim" školskim zgradama ili svojevrsne kamuflaže te moći u školskim zgradama otvorenoga tipa. Naročito se propituje priroda koncepta „inovativnih okružja za učenje", odnosno prirodu pedagoških praksi unutar takvih fizičkih okružja. Budući da su „inovativna okružja za učenje" još jedan izraz neoliberalne agende obrazovanja i nastojanja da se ostvare novi prostorni uvjeti podešeni za „pripremu učenika za ekonomiju zasnovanu na znanju i korporativnom radnom okružju" (Charteris, Smardon, Nelson 2017), čime se zapravo realizira samo jedna dimenzija svrhe obrazovanja – kvalificiranje učenika (Biesta, 2015), nastojalo se, prikazom analize pedagoških praksi, a naročito analizom praksi moći koje se manifestiraju u ovakvim okružjima, propitati uspijevaju li zaista pod maskom „inovativnosti" izbjeći nadgledanje i discipliniranje učenika (i nastavnika) ili mu samo zadaju drugačiji oblik, te perpetuiraju li samo postojeće društvene odnose naglašavajući *učenje* u priči o obrazovanju i odgoju, a zanemarujući ideju da bi se svako obrazovanje zapravo trebalo kretati k ostvarivanju *slobode* (Biesta, 2010), i to, u posthumanističkom maniru, slobode čovjeka *sa* svijetom u kojem živi.

U radu se polazi od posthumanističke paradigme (poznate i kao novi materijalizam, relacijski materijalizam, kritički ili feministički posthumanizam (Murris, 2016)), kao svojevrsne „navigacione alatke" koja nam pomaže da nanovo promislimo mjesto ljudi, djece, prirode i neživoga materijalnog svijeta, iz neantropocentrične pozicije koja raskida s kartezijanskom idejom o dominaciji mislećeg Čovjeka (Taylor, 2019) i prevalenciji jezične reprezentacije svijeta, koja ga onda svodi na „socijalni svijet" u kome se zanemaruje sve što nije ljudsko (životinje, priroda, stvari...) (Murris, 2016). U tom smislu stoji se na poziciji *novog vala* studija djetinjstva koji nadilaze dualizam biološkoga i sociološkoga objašnjenja djeteta i djetinjstva (Ryan, 2011). Kroz prizmu posthumanizma razmatra se udio i agensivnost materijalnoga svijeta (školskih objekata) u procesima obrazovanja, jer posthumanistička pedagogija usvaja svojevrsni „materijalni zaokret" koji pripisuje agensivnost materijalnom svijetu i „problematizuje ideju da se učenje odvija „u" djetetu" (Murris, 2016: 6), već u prostoru između osobe i materijalnoga svijeta koji ga okružuje.

Materijalna konstrukcija djetinjstva

Razmišljanje o djetinjstvu kao socijalnom konstruktu nadograđeno je idejom o „više-nego-socijalnom" djetinjstvu (Prout, 2005) zahvaljujući poticaju koji su Deleuze i Guattari (1984, 1987) dali teoretičarima djetinjstva da o njemu počnu razmišljati kao o asamblažu ljudi i ne-ljudskih entiteta (životinja, biljaka, elemenata materijalne

stvarnosti). Postavlja se zahtjev za razmatranjem *materijalnosti, tijela i ne-ljudskih objekata* i za prevrednovanjem dualizma um-tijelo, pa samim tim i prevrednovanjem dualizma kultura-priroda (*nurture vs. nature*) koji se na potonjem temelji. Inzistira se na isprepletenosti svega što postoji, bez mogućnosti jasnoga određivanja granica – sve je u odnosu, sve jest jer je u odnosu. Upravo zato i *interakcija* biva zamijenjena aktom *intra*akcije jer postaje jasno da nije riječ o utjecaju, djelovanju jednoga na drugo, već o njihovu međusobnom djelovanju *u odnosu* koji ih oboje obuhvaća kao jedno – „isprepletenost ljudi i ne-ljudskih fenomena u intra-akciji jednih s drugima znači da je nemoguće odrediti gdje su granice djeteta, ili učitelja, ili namještaja, ili crteža..." (Murris, 2016, str. 12). *Postljudsko dijete (post-human child)* tako postaje „tijeloumtvar" (*bodymindmatter*) (Murris, 2016, str. 128) i „u isto vrijeme je jezično, socijalno, političko, prirodno, materijalno i kulturno" (Murris, 2016) te kao takvo, ono nije *dio* svijeta, već je *sa svijetom.*

Dokazi iz mnoštva disciplina danas potvrđuju da smo zagazili u novo doba antropocena, odnosno u „doba čovjeka", kako su početkom tisućljeća konstatirali Crutzen i Stoermer (2000). Studije djetinjstva u antropocenu počinju se baviti pitanjima „više-od-socijalnoga" ili „hibridnoga" djetinjstva (Prout, 2005), uglavnom kroz paradigme „novog vala", „infraparadigme", uključujući „novi materijalizam", „posthumanizam" i „nereprezentacijske teorije" (ili „više-nego-reprezentacijske teorije") (Kraftl i sur., 2020). Te tradicije mišljenja zauzimaju nešto drukčiji pristup problemu života suvremenoga čovjeka, kako se opet ne bi upalo u zamku antropocentrične pozicije u teorijama i istraživanjima ovoga doba. Antropocentrična pozicija, bilo da čovjeka proglašava „krivcem" ili „spasiteljem" iz stanja u kome se svijet danas nalazi, i dalje postavlja razmišljanje u tipično kartezijanskom *velikom narativu* čovjeka koji ne živi *sa* svijetom, već živi *u* njemu i djeluje *na* njega – u *velikom narativu isključive dominacije čovjeka.* Nasuprot tome, nastupajući iz paradigme „novog vala", Braidotti inzistira *na postljudskoj* etici, „etici postajanja" (Braidotti, 2013, str. 49), koja će upravo obuhvatiti i djecu (ali i prirodu i druge materijalne objekte stvarnosti) kao one koji nisu „nepotpun čovjek", u „novim ekologijama pripadanja" u kojima je sve jedno. Postdijete je, dakle „višeslojno, nomadsko, hibridno i u odnosu je s ljudima i ne-ljudskim činbenicima i posredovano je i tehnologijom" (Aitken, 2019, str. 41).

Takva konceptualizacija svijeta, čovjeka i djeteta zahtijeva i konstituiranje drukčijih pedagogija. U takozvanim „pedagogijama zajedničkoga svijeta" (Taylor, 2017) na djelu je otklon od pedagogije kao isključivo interpersonalne djelatnosti i ide se prema istraživanju kolektivnoga učenja, i to učenja ne *o svijetu* već *sa svijetom,* u međusobnim odnosima ljudi i ne-ljudi, naročito, dakle, kroz primjere učenja generiranoga dječjim svakodnevnim interakcijama sa životinjama ili materijalnom stvarnošću koja ih okružuje (Taylor, 2017). Istraživanja u području geografije djetinjstva, geografije obrazovanja, ranoga i predškolskog odgoja i obrazovanja na neki način spuštaju narativ „na zemlju" (*scaling down,* Taylor, 2020) i u fokus stavljaju „male igrače" – djecu, životinje, nematerijalne objekte stvarnosti. Za atribut „malih", iz antropocentrične pozicije, djecu

kvalificira *pred* odnosno *ne*-racionalnost koja im se pripisuje, tj. svojevrsni „deficit kredibiliteta vezan za godine" (Murris, 2016, str. 135). Ideja je da upravo predškolska djeca još uvijek nisu potpuno naučila „pravila igre 'Čovjek protiv Prirode'" (Taylor, 2020) i da upravo ona „uspješno ignoriraju ontoepistemičke granice koje dijele svijet na ljude i ostale" (2017, str. 9) te u tom smislu upravo od njih imamo naučiti moguće nove načine življenja u „oštećenom" svijetu.

Na slična „vrata", iz neantropocentrične pozicije, i razmatranje prostora (prostora kao materijalnosti, ali i prostora kao procesa) ulazi u studije o djetinjstvu i u pedagogiju.

Kraftl zapaža proces „materijalne konstrukcije idealnoga djetinjstva" (Kraftl, 2006), napominjući kako studije djetinjstva često zanemaruju udio materijalnoga i materijalnih praksi, odnosno djelovanje prostora u konstituiranju ideje djetinjstva. U okviru geografija arhitekture, pak, vrlo često se pristup materijalnom zadržava na „čitanju" simbola u građevinama, putem takozvanoga reprezentacijskoga ili ikonografskoga pristupa istraživanju prostora i artefakata za djecu u sklopu kojeg se prostori vide kao znak, tj. simbol, tj. jezik klase, rase, kulture i slično. Iako važan, takav e pristup nedostatan za razumijevanje kako u praksama svakodnevnoga života u konkretnim prostorima ti simboli bivaju oživljeni, s obzirom na to da se prostor konceptualizira kao „otvoren, višestruk i odnosan, nedovršen i uvijek u nastajanju..." (Massey, 2005, str. 59). Stoga je nužan kritičko-geografski pristup arhitekturi (Lees, 2001) kojim je moguće obuhvatiti proces i način na koji arhitektura, svojom materijalnošću i praksama, izravno sudjeluje u konstituiranju i manifestiranju konkretnoga djetinjstva. Upravo pomoću kritičke geografije arhitekture Kraftl (2006, 2008, 2013) je svojim analizama alternativnih škola pokazao kako prakse življenja u takvim prostorima konstituiraju djetinjstvo. Kraftl (2015) nudi i koncept „alter-djetinjstva" kao analitičkoga aparata za preispitivanje onih modusa djetinjstva koji se doživljavaju kao normativni (danas je to neoliberalni narativ djetinjstva (Katz, 2008)), pri čemu se koncept „alter-djetinjstva" ne postavlja kao protuteža neoliberalnom ili kao antineoliberalan, nego kao drugi, alter- ili post-, meta- u odnosu na dominantni (Braidotti, 2011). Takve modele djetinjstva oblikuju prostori alternativnih pedagoških sustava, škola temeljenih na pedagoškim idejama Rudolfa Steinera (valdorfske škole) ili Lorisa Malaguzzija (vrtići u Reggio Emilia), *Human-Scale* škola, *Care Farmering*, *Forest Schooling* i slično, i to „kanaliziranjem" tijela/emocija djece putem „kolektivnih navika" (Kraftl, 2016) koje se stvaraju u prostoru.

Dakle, i u znanostima o djetinjstvu i pedagogiji, i u arhitekturi i geografiji djetinjstva i obrazovanja dogodio se svojevrstan preokret – kako Holloway i Valentine (2000) konstatiraju, na djelu je s jedne strane svojevrsni „prostorni zaokret" (*spatial turn)* u znanostima o obrazovanju i djetinjstvu, a s druge svojevrsni „socijalni" zaokret u geografiji djetinjstva, koja je sve zainteresiranija za djecu kao socijalne aktere u prostorima. To je jasno vidljivo u tipičnim obrascima istraživanja u području geografija djetinjstva i geografija obrazovanja. Tu su, na primjer, istraživanja konstituiranja identiteta djece u prostorima i putem prostora, odnosno istraživanja na koji način prostori sudjeluju u „stvaranju" djeteta, primjerice putem prostornoga disciplineranja tijela i

duha utjelovljenoga u ideji da postavljanjem djeteta u školu dobivamo –skolarizirano dijete (Gorsvwnora i Rasmussen, 2018). S druge strane istražuje se i način na koji poimanje djetinjstva određuje značenje i upotrebu mjesta i prostora, odnosno kako se poimanje položaja i uloge djece u javnim prostorima mijenja ovisno o predodžbi o djetetu kao „nevinom" ili kao „zločestom" i slično (Holloway, Valentine, 2000). Riječ je, dakle, o dvosmjernom utjecaju, kako ističe Kraftl (2019), sama škola i „simbolizira i materijalizira djetinjstvo" (2019, str. 444).

Kraftl (2016) govori o „kanaliziranju tijela" u prostoru i prostorom, Gorsvenor i Rasmussen (2018) o „upravljanju preko dizajna", Lange (2018) o „dizajniranju djetinjstva" materijalnim svijetom, podsjećajući na Lefebvreovu (2007) tezu da se tijelo zapravo „lomi" ili „savija" prema prostoru preko konkretnih prostorno-vremenskih praksi i rutina kojima se zapravo „dresira" (Lefebvre, 2007, str. 39). To se „dresiranje" temelji na ponavljanju i ritmovima. Govoreći o „upravljanju preko dizajna" Grosvenor i Rasmunssen napominju kako nije riječ o jednosmjernom postupku kojim se odlukama obrazovne politike i odgovarajućega dizajna škole jednostavno stvara prostor tako da formira željene građane – riječ je o tome da je dizajniranje prostora prije „proces rada" nego li „projekt uma" (Ingold, 2013 prema Grosvenor, Rasmunssen, 2018, str. 22), odnosno da u sebi sadrži materijalnost (ne samo idejnost), materijalnost koja je „producirana ali i produktivna, generirana ali i generativna" (Barad, 2007, str. 137), čime se zapravo potvrđuje dvosmjernost odnosa prostora i djetinjstva.

Slijedi kratko razmatranje empirijskih nalaza ukratko empirijske nalaze o prirodi veze fizičkog okružja i učenja.

Prostor i pedagogija: na prvi pogled

Interes pedagoške teorije za materijalne aspekte obrazovanja i osobito za fizički prostor, koji je zatim opredmećen i u obrazovnim politikama, nastaje zbog rastućih empirijskih dokaza o djelovanju prostornih elemenata stvarnosti na proces i ishode učenja. Odnos pedagogije i prostora (školske zgrade) razmatran je u mnogim istraživanjima koja upućuju na nedvosmislen utjecaj fizičkih elemenata mjesta na učenička postignuća. Eklatantan je primjer istraživanje organizacije *Clever Classrooms*, provedeno u sklopu projekta HEAD (*Holistic Evidence and Design*) u 153 učionice, 27 vrlo različitih škola, na 3766 učenika, a koje je sofisticiranom metodologijom, složenim višerazinskim statističkim modelima uspjelo izmjeriti učinke, tj. utjecaj fizičkih elemenata škole/učionice na učenička postignuća izoliravši ih od ostalih čimbenika koji mogu utjecati na školski uspjeh. Riječ je o prvoj takvoj studiji koja je uspjela holistički tretirati problematiku utjecaja prostora na postignuća učenika, s ključnim nalazom da je čak 16 % varijance tih postignuća moguće objasniti faktorima prostora (Barret i sur., 2015). Ako se učini da je 16 % objašnjenja varijance u školskom uspjehu koje je moguće pripisati faktorima prostora malen postotak, usporedbe radi, metaanaliza Ney i suradnika (2004, prema Barret i sur., 2015) pokazuje da nastavnikov utjecaj na učenička postignuća varira od 7 % do maksimalnih 21 %. U istraživanju

Barret i sur. (2015) izdvojile su se tri grupe čimbenika fizičkoga okružja koji utječu na ta postignuća: 1. prirodnost – svjetlost, temperatura, kakvoća zraka i sl. (na koju se odnosi 49 % ukupnoga utjecaja prostora na postignuća učenika), 2. individualizacija – prilagođenost prostora potrebama grupe, odnosno pojedinaca s obzirom na to da svaka osoba ima visoko personaliziran odgovor i reakciju na prostor (na taj čimbenik odnosi se 28 % utjecaja na učenička postignuća) i 3. razina podražaja, odnosno vizualna kompleksnost i odgovarajuća upotreba boja (na koju se odnosi 23 % ukupnoga utjecaja prostora na učenička postignuća). Na temelju rezultata metaanalize 129 publikacija (Barret i sur., 2019) spomenutim se čimbenicima dodaju i čimbenici dostupnosti škole – manje škole, s geoprostornim implikacijama gušće raspoređenosti u lokalnoj zajednici, kao i manje brojnim razredima također pridonose učeničkim postignućima.

Razmatranje materijalnosti obrazovanja na primjeru „inovativnih okružja za učenje"

Upravo na temelju sve opsežnije baze empirijskih dokaza o udjelu materijalne dimenzije konteksta učenja na ishode obrazovanja (mjerene konkretnim školskim postignućima, ili, kako će se vidjeti u sljedećim poglavljima, materijalizirane u formiranju određenih identiteta učenika i nastavnika u školama) suvremena teorija i politika obrazovanja nedvosmisleno uključuju i zahtjeve za materijalnom konstrukcijom učenja. Na primjer, naglašavanje prostornosti obrazovanja vrlo je jasno konotirano u konceptu „okružja za učenje", aktualiziranom osobito od sredine 2000-ih u sklopu OECD/CERI projekta posvećenoga „inovativnim okružjima za učenje" (ILE's)[1]. Okružje se u toj sintagmi shvaća holistički, dominantno kao interakcija više komponenti od kojih su ključne učenik, nastavnik/učitelj, sadržaj i prostor te tehnologije kojima se posreduje učenje (Dumont i sur., 2010). Skicirat ćemo tipična shvaćanja učenja u tom projektu te kako su ona trasirala i nove pravce u razumijevanju uloge prostora u učenju.

Kako navode Dumont i sur. (2010), nekoliko je krupnih tijekova promjena uzrokovalo da se „učenje stavi u središte pažnje", a time i na to da se jave i nova/stara promišljanja o okružjima za učenje kao pedagoškim i fizičkim prostorima: transformacija društava od onih temeljenih na industriji k onima temeljenim na znanju, čime se fokus stavlja na „kompetencije za 21. stoljeće"; standardizirana međunarodna mjerenja ishoda učenja; porast multidisciplinarne baze znanja o učenju; razvoj i utjecaj IKT-a na sve sfere društva, pa i na obrazovanje s mogućnošću polisinkronoga učenja kombinacijom učenja licem-u-lice i asinkrone i sinkrone *online* komunikacije, tj. učenja (Dalgrano, 2014) i slično. To je svakako uzrokovalo i isticanje važnosti cjeloživotnoga učenja, koje je osnovni preduvjet razvijene „kompetencije za 21. stoljeće". U osnovi spomenutih vještina, a prema mnogim autorima i krajnji cilj učenja, jest stjecanje adaptivne ekspertize/kompetencija (Bransford i sur., 2006; Hatano i Inagaki, 1986; De Corte 2007) – sposobnosti da se

[1] O „inovativnim okružjima za učenje" govorimo na temelju publikacija: *The Nature of Learning: Using Research to Inspire Practice* (2010), *Innovative Learning Environments* (2013) i *The OECD Handbook for Innovative Learning Environments* (2017).

znanja i vještine stečene smislenim učenjem fleksibilno i kreativno primjenjuju u različitim situacijama. Dakle, nije riječ o ovladavanju znanjima i vještinama u određenoj disciplini, već o volji i sposobnosti za kontinuirano proširenje ključnih kompetencija, pa je samim tim adaptivno umijeće temelj cjeloživotnoga učenja. U procesu razvijanja adaptivne kompetencije ključno je, prema De Corte (2010), razumjeti četiri ključne odlike efektivnoga učenja („CSSC" učenje): učenje je konstruktivno (C – *constructive*), samoregulirano (S – *self-regulated*), situacijsko, tj. kontekstualizirano (S – *situated*) i kolaborativno (C – *collaborative*). Svaka je epizoda učenja kontekstualizirana i to upravo u okviru neposrednoga okružja za učenje. Ključni su principi „inovativnih okružja za učenje" (Dumont i sur., 2010; OECD, 2017) sljedeći:

1. Učenik je u središtu procesa učenja – ohrabruje se njegovo aktivno uključivanje i razvija njegova samopercepcija kao onoga koji uči (metakognitivne vještine). Ključno je učiniti učenika „samoreguliranim" učenikom, a to znači učenikom koji razvija metakognitivne vještine; nadgleda, evaluira i optimizira stjecanje i upotrebu znanja; regulira svoje emocije i motivaciju; dobro upravlja vremenom za učenje; postavlja osobnije i specifičnije ciljeve, nadgleda ih i njima upravlja.
2. Prepoznaje se socijalna priroda učenja i ohrabruje kooperativno učenje.
3. Nastavnici prepoznaju ključnu ulogu emocija i motivacije učenika u učenju i rukovode se njima, čemu pridonose primjena tehnologije u učenju, kooperativno učenje, istraživačko učenje, učenje u službi društvene zajednice i sl.
4. U nastavi se prepoznaju i uvažavaju individualne razlike među učenicima, uključujući i predznanje.
5. Nastava treba biti izazovna za svakog učenika – vodeći ga zoni njegova budućega razvoja.
6. Nastava je takva da su ishodi jasni i da su strategije evaluacije u skladu s ishodima.
7. Okružje za učenje snažno potiče horizontalnu povezanost znanja kroz predmete (integriran, fenomenološki kurikul), ali i kroz društvenu/prirodnu zajednicu i širi svijet (čiji je pravi primjer koncept servisnoga učenja).

Pedagoški modaliteti putem kojih se navedeni principi mogu zadovoljiti svakako su raznoliki i teško da se mogu ostvariti isključivo frontalnim oblikom nastave. Suvremeni klasteri inovativnih pedagogija (Paniagua, Istance, 2018; Istance, Paniagua, 2019), između ostaloga, preporučuju pedagoške modalitete tjelesnoga učenja, „računalnoga" mišljenja (kombinacija matematičke, znanstvene i digitalne pismenosti za učenje raznolikih transferzalnih vještina putem IKT-a), multipismenosti i diskusije, gejmifikaciju učenja (Flatt, 2015), iskustveno učenje (projektno i servisno učenje) te kombinirano učenje („obrnuta" učionica, laboratorijsko učenje i kombinacija *online* i „face to face" modela učenja).

Takva konceptualizacija inovativnih okružja za učenje, iako u mnogim segmentima nije nova, zahtijeva promjenu pedagoške paradigme, koja bi se morala dogoditi na četiri ključne razine. Na razini prakse poučavanja, riječ je o prelasku s individualnoga

rada na rad nastavnika u parovima ili timovima; na razini pedagogije, zahtijeva se prelazak s pedagogije usmjerene na postupke nastavnika na pedagogiju usmjerenu na aktivnosti učenika; u pogledu kurikula promjena podrazumijeva prelazak s predmetnih na integrirane/fenomenološke kurikule, i napokon, ali ne manje važno, promjena na razini zajednice zahtijeva pomicanje fokusa od učionice kao primarnoga prostora učenja k okružju za učenje, zajednice i mreže učenja (Nair, 2014; Nair i sur., 2019). Tako izmijenjena pedagoška paradigma zahtijeva i drukčije škole, „i najmanje promjene u dizajnu škole mogu značajno utjecati na poučavanje i učenje" (Nair i sur., 2019, str. 26). Spomenuti autori odnos pedagogije i prostora škole vide kao odnos softvera i hardvera, koji, radi uspješnoga funkcioniranja jedinice, moraju biti potpuno kompatibilni (Nair i sur., 2019). Suvremene škole morale bi dizajnom pratiti principe učenja kao autentičnoga čina koji se odvija putem multimodalnih pedagogija u okviru interdisciplinarnih kurikula, uz povezanost s okružjem, neposrednom i širom socijalnom zajednicom, učenja koje je osobno i personalizirano i koje nije vremenski ograničeno, koje je samousmjereno i dobno heterogeno te podrazumijeva rad nastavnika u timovima (Nair i sur., 2019). To u praksi znači da će nove školske zgrade zapravo „izgledati drukčije iz dana u dan, iz tjedna u tjedan, iz godine u godinu" (Nair, 2014, str. 40) jer će zapravo školski prostori postati hardver koji odgovara promjenjivom i multimodalnom softveru (pedagogiji), pa će i same postati „zgrade koje uče", odnosno, zgrade koje se „s vremenom mijenjaju tako što 'uče' od korisnika koji u njima obitavaju" (Nair i sur., 2019, str. 28).

Prostorni zahtjevi „inovativnih okružja za učenje"

Pedagogija inovativnih okružja za učenje postavlja i nove zahtjeve u pogledu arhitekture škole. Prepoznaje se da tipične, „tradicionalne" škole s učionicama, takozvane „cells and bells" škole (Nair, 2014), ili koridor-škole (tipično, škole s hodnicima oko kojih su raspoređene učionice), nisu adekvatne za maksimiziranje učinaka opisanih koncepcija učenja. Ne moramo ići tako daleko da učionice proglasimo pedagoški zastarjelim i suvišnim (kako je učinio Nair, 2011), ali ne može se ne ustanoviti da pojam učionice postupno iščezava iz dokumenata obrazovne politike (barem u zapadnoj Europi) i da ga zamjenjuju pojmovi različitih pedagoško-prostornih značenja, kao što su „okružje za učenje", „studio učenja", „ulica učenja", „zajednica učenja", „ekosustav učenja" i sl. (Nair, 2011, 2014).

U pogledu arhitekture škole te vizije inovativnih okružja za učenje, tipično se otjelovljuju u ponovnom valu izgradnje „otvorenih škola", odnosno „open plan" škola. Tom se trendu priklanjaju mnoge zemlje – Ujedinjeno Kraljevstvo, Island, Australija, Novi Zeland, Švedska, Finska, Norveška i druge (Niemi, 2020; Grannas, Stavem, 2021; Sigurðardóttir, Hjartarson, 2018; Benade, 2016). Okružja za učenje u takvim školama obično podrazumijevaju nekoliko modaliteta, sa sve manjim udjelom ili potpunim izostankom tradicionalnih učionica (Dovey, Fisher, 2014; Nair, 2014; Nair, Doctori, Elmore, 2019):

– zajednički prostor (*commons*) – prostor koji je veći od jedne učionice i koji ne smije biti zatvoren/pregrađen u učionicu; nije prohodan odnosno nije veza za druge učionice i zajedničke prostore; u njemu nema prevelike gužve odnosno prometa učenika i nastavnika – to, dakle, nije tipično hodnički prostor s primarnom funkcijom komunikacije i prolaska, naprotiv, primarno je veliki prostor za učenje

– „ulica za učenje" (*streetplace/ learning street*) – otvoreni prostor za učenje širok oko tri metra (širi od tipičnoga školskog hodnika) koji omogućava i aktivnosti učenja i prolazak; ni on ne smije biti zatvoren/pregrađen u učionicu; otvoren je za prolazak jer je povezan sa svim drugim učionicama; to je prostor za cirkuliranje, neformalne susrete, spontane konverzacije i organizirano učenje

– prostor za rad u timu (*meeting area*) – manji prostor za učenje, za 5 do 20 učenika, manji od tipične učionice odnosno manji od 40 m^2; tu se mogu održavati seminari i predavanja, a ključni je kriterij toga prostora da ne bude veličine tradicionalne učionice

– prostori fiksne namjene – prostori namijenjeni konkretnim predmetima/kabineti

– prostor za učenje vani – vanjski prostor, ali prema planu definiran kao sastavni dio klastera za učenje, obično nazvan „vanjsko učenje" ili „vanjska učionica"

– studio za učenje (*learning studio)* – čijom kombinacijom odnosno uklanjanjem zidova, tj. pregrada možemo dobiti veći „apartman" za učenje (*learning suite)*

– „tihi" zajednički prostor (*quiet commons*), obično prostor između studija za učenje koji omogućava individualni rad, rad u tišini i sl.

– prostor za izolaciju (*breakout)* – prostor koji učeniku omogućava kratak predah odnosno izolaciju.

Nair i Bosch u svojem su dizajnu školskih prostora nadahnuti osobito primordijalnim metaforama o učenju (Thornburg, 2001) kao logorskoj vatri, odnosno učenju od eksperta/nastavnika; učenju kao izvoru odnosno učenju od vršnjaka i s vršnjacima; učenju kao pećini, odnosno učenju kroz introspekciju i napokon učenju kao životu odnosno učenju radom i rješavanjem konkretnih životnih problema. Te su metafore nedvosmisleno prepoznate u interijeru škola spomenutih arhitekata u obliku raznovrsnih modaliteta prostora – istaknutih i otvorenih prostora za okupljanje i zajedničko učenje, male, uvučene niše za introspektivno učenje i individualni rad i slično (neka od spomenutih dizajnerskih rješenja mogu se pogledati na https://rosanbosch.com/).

Kako bi se stvorili prostorni uvjeti za različite pedagoške modalitete koje prepoznaju inovativna okružja za učenje, ključna je prostorna karakteristika škola utemeljenih na ovim idejama i fleksibilnost, za razliku od potpune otvorenosti prostora, što neki autori radikalno zagovaraju (Nair, 2011). Prema Dovey i Fisher (2014) fleksibilnost se može shvatiti kao reverzibilna konvertibilnost koja podrazumijeva mogućnost kretanja od tradicionalne pedagogije i frontalne nastave prema gore opisanoj sukonstruktivističkoj pedagogiji, što se u prostoru prepoznaje kao mogućnost otvaranja, odnosno ponovnoga zatvaranja prostora (učionice) putem „arhitekture povratne promjene", prema potrebama aktivnosti učenja. Osim toga, fleksibilnost se može shvatiti kao fluidnost ili agilnost prostora, koja se odnosi na kapacitet za protok i promjenu prostora za učenje tako da

podrži više raznolikih modaliteta učenja. Autorice konstatiraju kako nove škole (bilo da su potpuno otvorenoga ili klasterskoga tipa) moraju ponuditi stabilan osjećaj prostora, ali ne tako da odole pritisku promjena i vrate se u prvobitno stanje, već upravo da se prilagode na promjene, bez zapadanja u neki negativan režim disciplíniranja (kruto ustrojene učioničke škole) ili dolaska na rub kaosa (potpuno otvorene škole, „bez zidova"). U tom su smislu najotporniji planovi s raznolikim prostorima za učenje i visokom razinom fluidnosti.

Pedagogija otvorenih planova za učenje – *pro* i *contra*

Pedagoška praksa u otvorenim (ili netipično učioničkim) planovima škola može izgledati vrlo raznoliko – kombiniranje više odjeljenja (40 do 100 učenika) i više razreda, rad nastavnika u parovima ili timovima, ne isključujući povremenu predavačku nastavu s većim grupama učenika, ali dominantno podrazumijeva rad učenika u manjim grupama ili timovima i parovima te individualni rad nastavnika i učenika. Otvorenost „lomi" materijalnu, socijalnu i kulturnu strukturu tradicionalne učionice i školovanja, konkretno, pretpostavljajući kolaborativni rad nastavnika u parovima ili/i timovima" (Niemi, 2020). To za sobom povlači i fleksibilniju arhitekturu vremena, odnosno školskoga dana te je u nekim zemljama ta pedagoška i prostorna promjena zahtijevala i prelazak s dvosmjenskoga režima rada u školama na cjelodnevni rad, unutar kojeg najčešće vrijeme nije fragmentirano na 45 ili 90 minuta, već se ritam učenja prilagođava ritmu pojedinačnih učenika. Istraživanja ILE okružja pokazuju da se tako uprostorene pedagoške prakse događaju upravo ondje gdje nije naglasak na režimima rasporeda sati, rutina, kretanja i slično, već upravo na nastavnikovom i učenikovom razumijevanju upotrebe prostora kao izvora učenja (Saltmarsh i sur., 2015).

Prvi val izgradnje škola otvorenoga plana počeo je 60-ih godina prošloga stoljeća. Iz Engleske se prenio u Ameriku, no već 80-ih godina popularnost gradnje takvih škola značajno pada (Nair, 2014). Razlog autori dominantno vide u raskoraku između arhitektonske i pedagoške promjene s obzirom na to da su novi, otvoreni prostori, bez učionica, zahtijevali i nove pedagoške prakse za koje, ispostavit će se, nastavnici nisu bili dovoljno spremni. Nair ističe kako je ključni propust bio u tome što „nastavnike nitko nije obavijestio" o nastupajućoj prostornoj promjeni (Nair, 2014) te nisu imali ni inicijalno obrazovanje za specifičnosti pedagoškoga rada u takvim okružjima, ni podršku za tekuće novonastale pedagoške probleme u novom školskom ambijentu s kojima su se nužno suočavali (Brogden, 2007). To je najčešće vodilo povratku „default pedagogijama" pod snažnim utjecajem institucionalne memorije i rutina (Niemi, 2020), pa čak i ponovnom fizičkom pregrađivanju otvorenih prostora i izgradnji zidova učionica (Franklin, 2015; Grannas, Stavem, 2021). U mnogim savremenim *open sp*ace školama, zasnovanim na konceptu inovativnih okružja za učenje, također se javljaju ti izazovi nesklada pedagoške i arhitektonske promjene. Istraživanja su pokazala da suvremene škole otvorenih planova mogu lako ponoviti neuspjeh iz 70-ih i 80-ih godina ne bude

li dovoljno koordinacije između jasnoga definiranja značenja inovativnih okružja za učenje (ILE) i podrške nastavnicima za uspostavljanje odgovarajućih pedagogija u takvim prostorima (Charteris i sur., 2017).

Kao poseban izazov u mnogim se istraživanjima suvremenih otvorenih planova škola ističe kompleksnost rada nastavnika u timovima (Campbell i sur., 2013), što između ostaloga znači i svojevrsnu deprivatizaciju procesa poučavanja (Charteris i sur., 2017; Charteris, Smardon, 2018) i nosi sa sobom „psihološku promjenu" za nastavnike (Niemi, 2020). Prema nalazima brojnih istraživanja, potpuni „uspjeh" otvorenih (ili otvorenijih i fleksibilnijih) planova škola događa se u onim školama koje imaju snažnu zajedničku viziju svih nastavnika i rukovodstva. Time se otklanjaju i problemi i izazovi rada nastavnika u parovima ili timovima (Gislason, 2009, Cardellino, Woolner, 2020). Ideja o transformaciji, pedagoškoj i prostornoj, mora biti jasna i transparentna, i mora je prihvatiti svaki pojedini nastavnik (Niemi, 2020). Tada nastavnici demonstriraju znatno veći angažman i uključenost u razvoj i opravdanje svojih pedagoških ideja u timu, čime se i njihova etička odgovornost na neki način pojačava. To svakako samo pridonosi kvaliteti rada u takvim školama zahvaljujući uvećanju profesionalnoga kapitala (Hargreaves, Fullan, 2012) jer, načelno, otvoreni planovi zahtijevaju profesionalnu saradnju među nastavnicima (Sigurðardóttir, Hjartarson, 2011; Sigurðardóttir, Hjartarson, 2018). Uspjeh takve pedagoške i prostorne transformacije škole umnogome ovisi o „usvajanju zajedničke vizije" promjene (Niemi, 2020, str.14), što upućuje na *bottom-up* pristup pedagoškoj promjeni, ili *inside-out* pristup, koji, dakle, ne započinje na razini obrazovne politike i velikih narativa bilo koje vrste, već na razini pedagoške transformacije pojedinačnoga nastavnika, u školi kao mreži i zajednici učenja.

Kako prostor škole formira identitete: prakse moći u arhitekturi škole

Nakon što je skicirano shvaćanje prostora za učenje u kontekstu suvremenih teorija i politika obrazovanja te ukratko predstavljeni nalazi o ulozi fizičkoga prostora u učeničkim postignućima, u daljenjem tekstu govori se i o pitanju djelovanja prostora kao odgojnoga čimbenika u procesu oblikovanja identiteta učenika i nastavnika.

Kako bismo se uopće mogli baviti tim pitanjem, moramo poći od razumijevanja prostora kao procesa socijalne konstrukcije (Lefebvre, 1991). Naime, u svojoj dijalektici prostora Lefebvre konstatira da je prostor učionice zapravo fluidni proces koji oblikuje i koji je oblikovan svakodnevnim prostornim praksama nastavnika i učenika (Lefebvre, 1991). On vidi prostor kao trodimenzionalni skup u čijem je središtu prostorna dijalektika, koja daje temelj tumačenju stvaranja prostora kao dijalektičkoga procesa. Dakle, i sama bi se analiza društvenih procesa trebala pomaknuti s fokusa na stvari u prostoru na produkciju prostora – kako prostor, kao sociomaterijalni fenomen, postaje i u stalnom je procesu „stvaranja". Prepoznaju se produktivne veze između prostora i društvenih odnosa (Benade, 2016), fizički aspekti i prostor posreduju društvene odnose (McGregor, 2004). U tom smislu nijedan prostor ne može biti vrijednosno

neutralan jer je sudionik u procesu obrazovanja koje nikad nije neutralno, odnosno, koje je „nužno etično" (Merije, 2014). Škole, dakle, nisu nekakav objektivni skup fizičkih stvari, tj. entiteta, već aktivna organizacija „agenata, čimbenika, smještenih u kompleksne mreže koje uključuju uvjerenja, postupke i prakse zaposlenih i učenika (Gislason, 2010; Mulcahy i sur., 2015).

U tom se smislu na školu prestaje gledati isključivo kao na prostor u okviru kojeg se odvija odgojno-obrazovna djelatnost, a interes se postupno pomiče i na društveno-prostorne procese u njima, funkcioniranje društvenih normi unutar institucije, reguliranje tijela u prostorima, (re)produkciju identiteta, vrlo često upućujući na pitanje kontrole pojedinca u prostoru i (ne)mogućnosti otpora u odnosu na nju (Cook-Hemming, 2011). Na taj način prostor u školi osobito se dovodi u vezu s funkcioniranjem skrivenoga kurikula, specifičnom arhitekturom prostora i arhitekturom vremena, koje uspostavljaju točno određene odnose moći među svim sudionicima u procesu obrazovanja – učenicima, nastavnicima i materijalnim sudionicima. U tom smislu pomicanje od tradicionalne ka konstruktivističkoj pedagogiji i od škola s učionicama k otvorenijim prostornim asamblažima može se promatrati kao pomicanje od fukoovskog k delezovskom pristupu pitanju moći (Dovey, Fisher, 2014, str. 59).

Materijalno „proizvođenje" moći: učionice i otvoreni prostori

Piro (2008) u tradicionalnim „cells and bells" školama detektira arhitekturu nadgledanja po principu Benthamova panoptikona osobito discipliniranjem tijela, serijacijama, klasifikacijama odnosno oblikovanjem „poslušnih tijela" (Foucault, 1997). To se u „tradicionalnim" školama s učionicama postiže i odgovarajućom arhitekturom vremena, „disciplinarnim vremenom" (Foucault, 1995, str. 159) ili „tiranijom školskoga zvona" (Nair i sur., 2019, str. 35).

Razmotrimo nekoliko tipičnih primjera skrivenih formativnih značenja prostornih elemenata škole.

Naime, Zhang (2021, 2019) u svojoj studiji otkriva kako prostor učionice nije pasivan, objektivan čimbenik okružja, već prostor pun značenja koji prenosi ideološka uvjerenja, u slučaju njegova istraživanja, rasporedom sjedenja učenika. Mnogi autori prepoznaju da se raspored sjedenja u učionici koristi kao vrlo važan faktor upravljanja školskim aktivnostima i interakcijama (prema Zhang, 2019). Zhang u svojem istraživanju daje i hijerarhiju mjesta u učionici: od „zlatnih", preko manje poželjnih, najmanje poželjnih i „specijalnih" mjesta, pri čemu je najviše onih manje poželjnih. On konstatira da se stvara poseban etos učenja raspoređivanjem učenika na određena mjesta, i čak raspoređivanjem učenika pokraj kojih će se sjediti (u procesu dodatnoga finog ugađanja kontroliranja učenika prostorom). Učionica je, kako dalje ističe, sociomoralni prostor koji kao takav može i pozitivno i negativno utjecati na učenje. Moraliziranjem rasporeda sjedenja u učionici nastavnici utječu na obrazovni uspjeh učenika (Zhang, 2019). Ovo istraživanje svjedoči u prilog tome da je prostor u stalnom procesu nastajanja

jer je značenje prostora socijalno posredovano „kako nastavnici pripisuju značenja određenim mjestima u učionici, tako se fizička konfiguracija u učionici transformira u semiotiku prostora" (Zhang, 2021, str. 12).

Nastavnik svoju pedagošku praksu izvodi upotrebljavajući cijeli niz značenjskih resursa koji, osim jezika, podrazumijevaju geste, pogled, slike, kretanje i slično. Konkretno, na djelu je i „pedagogija prostora" (Lim i sur., 2012, str. 236), zasnovana na semiotici prostora, odnosno na nastavnikovu izboru pozicioniranja, kretanja i ritma kretanja ili stajanja na određenom mjestu u učionici (Lim i sur., 2012, str. 248). Prostorna pedagogija djeluje putem načina na koje nastavnik upotrebljava prostor, tj. kretanjem i pozicioniranjem u prostoru. Prostori u učionici neprestano se pregovaraju i rekonfiguriraju i to na dva načina: statički, pozicioniranjem nastavnika u prostoru, na konkretnoj lokaciji i dinamički, nastavnikovim kretanjem i tempom kretanja kroz prostor. Konkretna lokacija u prostoru dobiva na važnosti zato što preko nje, tj. iz konkretne pozicije nastavnik šalje određena značenja, poruke o svojem ponašanju, namjerama i sl. gestama, jezikom, te se točno određena konfiguracija semiotičkih izbora u pedagoškom diskursu događa na točno određenom mjestu i s njim se identificira.

U kontekstu učionice, većina interakcija događa se u okviru socijalno-konzultativnoga prostora (Hall, 1966). U tom kontekstu spomenuti autori na temelju svojega istraživanja (Lim i sur., 2012) predlažu podjelu na autoritativni prostor, osobni prostor, prostor supervizije i interakcijski prostor.

– Autoritativni prostor: obično je najudaljeniji od učenika i lociran iza katedre odnosno klupe i stolice za nastavnika; to je najčešće mjesto s kojeg se drže „predavanja".

– Prostor za superviziju: to je prostor koji nastavnik koristi u svrhu „kontroliranja" učenika i obično podrazumijeva hodanje odnosno „patroliranje" (Lim i sur., 2012, str. 238) između redova dok su učenici zaokupljeni nekim zadatkom, a bez konkretnih interakcija odnosno konzultacija s učenicima.

○ Prostor za nadgledanje prostor je u okviru prostora za superviziju, s pozicijom naročite kontrole i moći koja se ostvaruje implicitno, činjenicom nastavnikova „nevidljivoga" nadgledanja učenika; obično je to prostor u samom dnu učionice, dok su učenici leđima okrenuti nastavniku i svjesni nadziranja; to je neka vrsta panoptikona iz kojeg se prenosi poruka „neprekidnog nadgledanja".

– Interakcijski prostor: događa se kada nastavnik stoji između redova ili pokraj učenikove klupe tijekom učenikove aktivnosti te podrazumijeva blizinu koja omogućava interakciju, komuniciranje i reduciranje interpersonalne distance; ta interakcija obično ima oblik osobnih konzultacija u kojima nastavnik nešto razjašnjava, korigira, upućuje na daljnji rad i slično.

– Osobni prostor: to je obično prostor oko nastavnikove katedre ili klupe, koji se, prema značenju koje im nastavnik daje, može pretvoriti i u autoritativni prostor ili pak „samo" osobni prostor za nastavnikove stvari i slično.

Autori zaključuju kako nastavnikova upotreba prostora putem pozicioniranja i kretanja u njemu predstavlja značajan semiotički izvor za učinkovit pedagoški diskurs.

Iako smo polemizirali o „disciplinarnoj" upotrebi prostora u okviru učionica, postavlja se pitanje jesu li škole bez učionica/zidova, škole otvorenoga plana, nužno lišene mehanizama nadgledanja i disciplineriranja posredovanih elementima materijalne stvarnosti ili su pak ti mehanizmi samo izmijenjeni ili kamuflirani.

Tradicionalne učionice podrazumijevaju arhitekturu reda i nadgledanja te određuju specifičan zadatak specifičnom prostoru, s čvrstim granicama između pojedinih prostora u školi. U suvremenim, često *open space* školskim prostorima, na djelu je, s prostorne točke gledišta, manje kategoriziranje i normiranje, a više povezanost i protok; prostori su na određeni način „glatki" i funkcioniraju u rizomatskim ili mrežnim prostornim strukturama. Prelazak iz učionice u otvorene (ili djelomično otvorene) prostore predstavlja svojevrstan pokret od asamblaža disciplineriranja k asamblažu postajanja. Hijerarhija odozgo-nadolje, karakteristična za tipične koridor-škole, podrazumijeva *moć nad (ili nadmoć)*, prelazi u distribuirano, dijeljeno osnaživanje učenika (i svih drugih aktera) odnosno prelazi u *moć za.* U *open space* ili klasterski organiziranim školama upravljanje nije centralizirano, na neki način posrijedi je odsutnost centra, odsutnost predvidivosti, a naglašena je samoorganizacija sustava, s rizomatskim pristupom učenju, upravljanju i organizaciji prostora (Deleuze, Guatari, 1987). Iako su sve škole ustanovljene kroz određene hijerarhijske strukture (neka vrsta kontrole i upravljanja sustavima ravnatelja, nastavnika, kurikula, rasporeda sati i sl.), učenje u okružjima inovativnim za učenje (a često u prostorima otvorenih planova) kreće se oko horizontalnih rizomatskih mreža interakcija.

Open space škole razumiju se kao arhitektura povezivanja i toka. Takvi su prostori za učenje zapravo asamblaži, cjeline formirane posredovanjem međusobne povezanosti i toka između dijelova, sociospacijalni klaster međusobnih veza između dijelova u kojem identiteti i funkcije i dijelova i cjeline izrastaju odnosno nastaju iz toka/protoka između njih. Dinamizam toga asamblaža uključuje načine na koje se teritoriji i granice uspostavljaju ili brišu i načine na koje se identiteti izražavaju, formiraju ili transformiraju, način na koji se prostor učenja zatvara odnosno otvara, tj. kako se koristi njegova fluidnost. Učionica, pak, nije asamblaž, već teritorij, stabilizirana zona reda koja „drži kaos na drugoj strani" (Dovey, Fisher, 2014). Deteritorijalizacija odnosno oslobađanje od zidova učionice podrazumijeva pokret, čin kojim teritoriji erodiraju usporedno sa stvaranjem novoga asamblaža, nastavnikovo „posjedovanje" jedne učionice prelijeva se u „fizički asamblaž resursa, tijela i prostornih uvjeta" (Charteris i sur., 2017, str. 12). Tradicionalne učionice su u tom smislu fiksni teritoriji, dok su prostori koji se dizajniraju za nove pedagogije relativno deteritorijalizirani.

U inovativnim okružjima za učenje moguće je i pitanje agensivnosti učenika promatrati na nov, sociomaterijalni način, kako to Charteris i Smardon čine u svojem istraživanju, kroz agentivnost novoga materijalizma, s ontoepistemičkim pristupom u kojem se proces spoznavanja doživljava kao distribuirana praksa, u relacijama svega što postoji u prostoru, ljudskih i ne-ljudskih bića i materijala, diskursa i objekata (Charteris, Smardon, 2017; Charteris i sur., 2017). Novi materijalizam svakako vodi decentriranju od

centralnosti čovjeka, usvajajući ideju agensivnosti materije (Charteris i sur., 2017, str. 2). Stvari svojom fleksibilnošću utječu na aktivnost učenika i nastavnika u prostoru, i kao agensivni objekti zapravo sudjeluju u „su-proizvodnji onoga što učenicu mogu činiti ili biti u prostoru" (Charteris, Smardon, 2017, str. 12).

Što je, dakle, s pitanjem nadziranja učenika u *open space* školskim prostorima?

U svojoj analizi stavova školskih ravnatelja o funkcioniranju inovativnih okružja za učenje na Novom Zelandu, Charteris i sur. (2017) ističu prepoznavanje potrebe kadra da učenici u takvim okružjima ne „promaknu pedagoškom pogledu", s obzirom na prostornu udaljenost i protočnost u takvom prostoru te nereguliranost tijela u redovima stolica i stolova. Novi prostori zahtijevaju svojevrsno „samonadgledanje" samih učenika jer se i primarnost veze s nastavnikom gubi s obzirom na to da on radi u grupama od dva ili više razrednih odjela. Prostori za nastavnike (zbornice) u inovativnim okružjima za učenje najčešće su inkorporirani u okviru jednoga manjeg klastera učenja (za razliku od „cells and bells" škola u kojima su bili fizički vrlo izdvojeni, najčešće u posebne dijelove školske zgrade), veoma često bez konkretnoga naziva na vratima takve sobe/prostora, sve u cilju svojevrsne ko-lokacije učenika i nastavnika odnosno umanjenja distance. Postavlja se pitanje javljaju li se ti pokušaji kao novi oblici discipline i kontrole, u svojevrsnoj „kamuflaži nadziranja" (Dovey, Fisher, 2014, str. 60), odnosno „stvaraju li se nove forme nadziranja: jedan panoptički režim zamijenjen je drugim" (Dovey, Fisher, 2014, str. 60). Na taj se način zapravo pomičemo od *režima discipline* k *režimu kontrole* (Dovey, Fisher, 2014; Charteris i sur., 2017).

Biti ili *raditi* u „inovativnim okružjima za učenje"

U zaključku se donosi kratki osvrt na prirodu koncepta inovativnih okružja za učenje i upozoriti na potrebu drukčijeg razumijevanja „okružja" u toj sintagmi, izvan tržišnoga diskursa obrazovanja.

Ideja inovativnih okružja za učenje (ILE) počiva na neoliberalnoj pretpostavci, koja je u biti antropocentrične orijentacije, utjelovljenoj u ideji autonomnih, samoregulirajućih individua koje procesom obrazovanja trebaju razviti ključne kompetencije koje će im omogućiti što bolju konkurentnost na tržištu rada, a time i nacionalne ekonomije učiniti što konkurentnijim na svjetskom tržištu, sve s ključnom premisom ulaganja u ljudski kapital i razvoja gospodarstava zasnovanih na znanju (Olssen, Peters, 2005). U retorici o ILE-u otvoreno je prisutno ugledanje na posao/radno mjesto/tržište rada, promovirajući kapitalističke vrijednosti zarade, odgovornosti i slično, kao tipična „top-down" politička paradigma „primijenjena na obrazovanje" (Deerness i sur., 2018, str. 160). Kako ističe Deleuze, „isto kao što su korporacije zamijenile tvornice, tako kontinuirano obučavanje pretendira zamijeniti školu, a kontinuirana kontrola ispitivanje. To je najsigurniji način da se škola prepusti korporacijama" (Deleuze, 1992, str. 5). Umjesto da se neprekidno pitamo o efektivnosti obrazovanja, Biesta smatra da bi fokus trebalo staviti na „dobro obrazovanje" (Biesta, 2015). U suvremenom diskursu o obrazovanju Biesta prepoznaje dominaciju ideje „učenja" (koja je nedvosmisleno

prisutna u sintagmi inovativnih okružja za učenje), odnosno svojevrsnu „learnification of education" (Biesta, 2010), koja je na neki način zamijenila teorije o obrazovanju (kao fenomenu i procesu) i zamagljuje ključno pitanje svrhe obrazovanja kao teleološke ljudske djelatnosti (Biesta, 2015).

Može se prihvatiti mišljenje Deerness i sur. (2018)da je nužno iznova promisliti shvaćanje *E* (okružje) u ILE-u, koje se odnosi na ekologiju onih koji uče i na mjesto učenja, ističući naročito princip „sve je u odnosu" (Deerness i sur., 2018, str. 156), te da su u tako shvaćenoj arhitekturi „tijela i prostori u odnosu putem kojeg stvaraju ljude i mjesta". U tome nam osobito može pomoći upotreba *kritičke pedagogije mjesta* (Gruenewald, 2003) koja leži na postulatima kulturne dekolonizacije i ekološke reinhabitacije, i nije zaintersirana samo za borbu protiv opresivnih elemanata društvenih odnosa i *slobodu od* već za *slobodu sa* svijetom, svijetom ljudi i svijetom prirode i materijalne stvarnosti. Kritička pedagogija mjesta pravi otklon od standardiziranih iskustava učenja (pa i putem standardiziranih prostora i okružja za učenje) i standardiziranoga prilagođavanja učenika potrebama globalne ekonomije naprotiv, ona inzistira na prostoru kao „primarnom iskustvenom ili obrazovnom kontekstu" (Gruenewald, 2003, str. 7), kojim se može povećati angažiranost učenika u multidisciplinarnom, višegeneracijskom učenju koje je ne samo obrazovno relevantno, već i društveno angažirano i doprinosi dobrobiti zajednice u koju je uronjeno (putem, na primjer, *servisnoga učenja*) (Gruenewald, 2003). Kritička pedagogija mjesta tako je zainteresirana za identificiranje te oporavak mjesta i prostora koji omogućavaju dobar zajednički život (reinhabitacija), kao i za identificiranje onih obrazaca mišljenja koji koloniziraju „druge" – ljude, prostore, mjesta (dekolonizacija). Na istom su tragu i *pedagogije zajedničkih svjetova* (Taylor, 2017), bazirane na posthumanističkoj ontologiji, kojima se učenje i djetinjstvo promatraju kao neraskidivo povezani sa životom, biološkim, socijalnim i materijalnim svijetom, a pedagogija prestaje biti imanentna samo čovjeku – govori se ne o „učenju o svijetu", već o „učenju sa svijetom", u ispripletanim odnosima čovjeka i ne-ljudskih entiteta (životinja, prirode, materijalnoga svijeta).