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The learning environment as a space for changes

Summary

Science is not a simple increase of knowledge, but a change in state of mind. This demands a personalized approach to the teaching/learning process, the consideration of new spaces serving to gain information and experiences, as well as making use of the dialogical nature of man to create a learning community. The child cannot be a background for teachers' actions but an authentic real creator of his/her development. School should evolve from a socially and culturally authorised knowledge-transferring institution into an agency which will be a community of life and work. This paper focuses on selected aspects of a new culture of learning: constructive, self-regulated, situated and collaborative, that prepares the student for smooth functioning in a world marked by change.

Keywords: early education, culture of learning, learning environment, learning community

Introduction

School in its present form has become inefficient and inadequate for a reality filled with dynamic changes. It functions as a closed horizon of experiences, limited by place – which is delimited by the space of the school building; time – where education content is attributed to student's enrolment age, and education strategies – reflecting a production mentality. In addition to this, as Sir Ken Robinson – the world's recognised leader in the field of development of innovativeness and human resources stresses – the factory like shape of school is designed for a different epoch. As a result of this, it is not suitable for today's world since it offers young people signposts for the future, made in the diametrically different reality of the past (Robinson 2010: 70).

We are witness, however, to a peculiar block in thinking about school. Mentally we are stuck between an authoritative attitude towards education, based on cultural transmission, which is strongly rooted in our cultural tradition, and the new challenges of the world of fluid modernity, which – in the opinion of Zygmunt Bauman, one of the greatest authorities in the field of knowledge of society – requires openness and a constant readiness for change (Bauman 2011). Metaphorically recalling the words of the Italian philosopher and theoretician of Marxism Antonio Gramsci formulated in the early 1930's: The crisis in school education consists in the fact that “what's old dies and what's new cannot be born yet” (Bauman 2011: 192).

A requirement of today's school, therefore, is that it should be free of its past habitus, duplication of archaic clichés, reproduction of knowledge, standards, and values, and should become the creator of a learning environment, which to the young person will be the source of abundant experiences in relation to the material and socio-cultural world.

Towards a new culture of learning

In a world which is more and more unpredictable, where “yesterday's tested routes transform from day to day into dead ends, and the once traditional reliable behaviour models, instead of securing success lead to failure” (Bauman 2011: 152), the ability to learn becomes the basic competence that facilitates efficient and safe movement in everyday life, identification of one's own needs and capabilities, and efficient information management. The greatest chances for success are open to those people who can broaden their knowledge and acquire skills by themselves, showing persistence, enthusiasm, consistency and perseverance in the implementation of their intentions. A combination of passion, creativity and talent, therefore, is now the main shareholder in the building of intellectual capital.

Thomas Douglas and John Seely Brown (2011) in the book *A New Culture of Learning* appeal for perception and making use of the exceptional opportunity created by a reality pulsating with dynamic changes. The fact that the world changes is not an obstacle in learning any more, rather it forms unlimited resources for involvement, stimulation and development of the imagination. Modern school needs a new culture of learning, which Erik De Corte – a fellow of the American Educational Research Association, involved in research on meta-cognitive aspects of learning – specifies as “CSSC learning” (De Corte 2013: 60–99). This acronym contains four student activities, which are the foundations of effective learning. These are constructive, self-regulated, situated and collaborative learning.

In accordance with the constructivist theory of teaching, education has to be perceived as a support in learning to use culturally developed tools to produce meanings, which facilitate construction of one's own understanding of the world and the generation of behaviour enabling adaptation to the continuously changing socio-cultural reality. According to Gregory Bateson – author of the cybernetic theory of mind and the cybernetic theory of learning – the mind is set up on the basis of a number of dispositions to make distinctions: combining, juxtaposing, comparing and detecting differences, which cause cognitive conflict (Bateson 1996). This difference triggers interactions between different parts of the mind, and thus starts the process of perception reorganization and action, which leads to a change in thinking. Jean Piaget described this phenomenon in terms of the processes of assimilation and accommodation, which cause quantitative and qualitative transformations within cognitive structures (Piaget 2006).

Diversity of experiences initiates an increasingly more formalized form of the child's intuitive reasoning. In order for this to happen, he or she must experience the path of interiorisation in its entirety, starting from actions on material objects, which will gradually be internalized in the form of imaginative activities all the way to abstract operations.

Shortening of this path through replacement of observation and manipulation on concrete objects with a picture in a textbook or through a teacher's verbal communication limits significantly the participation of the sense apparatus in exploratory testing, and thus impoverishes the material designed for further intellectual processing. It has to be kept in mind, therefore, that the process of learning takes place when the brain does specific work. "Perception, thinking, experiencing, feeling and acting – all these processes leave so-called memory traces (engrams) in the brain" (Spitzer 2013: 17). The effectiveness of memorization and the level of understanding depend on the depth of information processing. Additionally, the thing the student does must be personally important to him or her; it must result from internal motivation and satisfy his or her individual needs, desires.

The result of the cognitive system's operation is a personal, unique construct, being an encoded version of the effects of interaction with the object of cognition. The mental structures formed this way by students are on the one hand strongly personalized, and on the other hand they correspond with external reality. Such an approach results in a new rewriting of teacher and student roles. The student is a searcher of meanings and builder of his or her own comprehension, whereas the teacher is an initiator and guide supporting students in the cognitive processing of information and construction of personal structures of knowledge.

This approach to the process of building knowledge and skills stimulates the student's self-consciousness giving meaning to action (Gattegno 2010), it also activates self-regulation mechanisms, which causes students to become masters in their process of learning (Zimmerman 1994). Barry Zimmerman, author of self-regulated learning, is convinced that "man participates in his processes of learning metacognitively, motivationally and behaviourally" (Zimmerman 1994: 3). With reference to cognitivism, the SRL model is based on the assumption that the more students get involved the more responsibility they take for their own life, and their results in learning are significantly improved. This requires three successive stages: planning, where students learn to define short- and long-term objectives and to precisely assess the situation through practice connected with implementation of selected strategies; monitoring of progress, and doing current corrections; all the way to assessment, consisting of defining the effectiveness of individual strategies in relation to the earlier adopted intentions.

The indicated self-regulation in behaviour manifests itself through internal motivation, achievements and self-assessment, which result from previous actions and an individual way of perceiving and analysing reality. Each student has their own personal experiences, shows a different way of thinking, a different style of learning, and has specific learning needs. Finding out and understanding one's own learning style, as well as recognition of one's personal strengths and weaknesses create an opportunity to experience oneself as an initiator, implementer and controller in the process of learning, to activate higher mental functions, to reflectively relate to one's own activity, and to give the feeling of responsibility for one's own development. In this new culture of learning, the student becomes an animator of his or her own path of development, whereas the teacher is a *learning coach*,

helping students familiarise themselves with and improve learning strategies, and adapt them to a given context and specific situation.

Learning takes place in an inseparable relation with experience, in a specific social and cultural context. It is a process accompanying action, which means that it cannot be separated from context. It is difficult not to agree with Bateson's statement that nothing has meaning unless it is seen in some context, and considering any object without its context is senseless (Bateson 1996). Mind forms a whole system together with the events and objects that implement its cognitive functions. In the multitude and complexity of conditions, and interdependence of their internal components we can find the justification and interpretation of undertaken activities. Context analysis serves explanation and understanding of action, however, the context itself does not mean anything if we forget about the activation of mental processes and subjective reflection which give meaning to action.

The research conducted by John S. Brown, Allan Collins and Paul Duguid confirm that constructing personal thinking structures is "partially the result of action, situation and culture, in which this knowledge is developed and used" (Brown et al. 1989: 32). Frequent references to the real world as a natural learning situation, which is close to student experience, means that information coded in this way is more quickly and easily found and used in concrete life situations by students. This is manifested by the principle of coding specificity. This refers to the fact that leads from the external situation presented during information coding determine the effectiveness of extracting information from the memory (Sternberg 2001: 222). When students integrate a situation with what they remember they will get better results in reconstruction if they find themselves in the same or in a similar situation. Hence, it is important that the teacher creates conditions for learning which are authentic, complex and rich, and not made up, simplified or limiting. School closer to life – this is the main message for situated teaching.

Awareness of the complexity of situated teaching indicates that one cannot consider this process as only an individual category. There is a reflexive relation between the cognitive dimension and the social and situated dimension of teaching. From the socio-cultural perspective, focused on the meaning of situation, especially social interactions, "the process of teaching is located between biographies of people and the socio-cultural space, where they live and where their experience takes shape" (Jarvis 1992: 17). It appears within the field of tensions between what is individual and unitary and what is social and dispersed. Entry into the area of social exchange gives an individual the possibility of internalization, i.e. developmental progress deep inside, which is not simple imitation, but a qualitative transformation of reasoning. Cultural thinking tools are an indirect link regulating social behaviours and influencing reorganization of individual behaviours. Particularly noteworthy is language that has a communicative function, facilitating a social form of collaboration, which in time transforms into a tool of thinking and learning. Thanks to language skills an exchange of thoughts is possible, which allows students to build their personal structures of knowledge by means of negotiation of meanings.

Opening up the communication space develops individual and collective reflection and self-reflection, teaches the art of argumentation, is a source of mutual inspiration, and stimulates learners to take on new challenges. Education is at its most effective if students have a chance to talk to one another in order to discuss ideas and questions, or to analyse and solve problems without constant mediation with the teacher. Entering into relations with peers who know more, who have more skills, is an excellent resource, as well as an imperative to the development of the intellectual, motivational and operational sphere. The task of the teacher is to build “a culture of mutual learning”, where students help one another in learning, form a support group, and where the teacher only supervises the course of the educational debate (Bruner 2006: 38–44).

The areas of changes described above require concentration on the qualitative dimension of education, supporting individual talents, and providing tools which used knowingly and intentionally will allow for better exploration and understanding of the world and the building of one’s own being in the world.

The learning environment as a support system for students

In order to realize the ideas of a new culture of learning, present-day school must evolve from a teaching institution, which serves students using a collective and highly unified education model, called by the well-known English journalist and publicist Carl Honore “turboeducation” (2011: 310), to an environment rich and diverse in its content and possibilities of learning, which constitutes a valuable set of instruments for the learning process.

The importance of this issue is confirmed by a report published in 2009 by the American organization the Partnership for 21st Century Skills, under the title *21st Century Learning Environment*. The authors of the report focus on the necessary transformation of our schools into learning environments, which will build a unique support system for students, giving them an opportunity for dynamic growth and the search for answers to a changing reality. The main components co-creating this synergic platform for learning are three dimensions of reality, including physical – encompassing the school space with its material equipment and infrastructure, social – taking into consideration relations between participants of the educational process, which are sources of inspiration and mutual motivation, and virtual – using advanced information and communication technologies providing constant access to tools and digital resources. This extensive, multi-aspect outlook, meanwhile, gives a new quality to discussions on the learning environment.

J.S. Brown, mentioned above, describes the learning environment by developing the category of the learning ecosystem (Brown 1999: 31–36). The use of this term results from the impact of features associated with the ecosystem, understood as an open, evolving, complex system, distinguished by the diversity of components and dynamics of connections and relations on the learning environment. Therefore, the learning environment is not simply a sum of its parts, but a specific structure in its entirety. The metaphor of the ecosystem allows for a better look at the education process, taking into consideration

consecutive levels of building mental maps in the minds of students, thanks to which they can increase their ability to enter into interactions and build relations with the material and social worlds. The role of the learning ecosystem being a merging of the participants and resources in a broader learning environment through cooperation, sharing, publishing, reflection, learning and development. It is particularly relevant during the implementation of the process of learning and teaching advanced IT and communication technologies, which are carriers of information and create the possibility of participation in social networking, serving as a tool to establish relations, for the exchange of thoughts, active development of contents, joint projects and constant communication in the network environment.

The learning environment can be viewed as a totality of conditions, in which learning takes place in the direct context of every event related to the student (Dumont, Istance 2013: 53–53). From the perspective of social and cultural processes, the internal structure of the learning environment shapes the space for the activities of the students using it. It becomes a dimension of reality, which encompasses the complex of conditions for the subjective existence of the individual allowing him or her to define him or herself through presented behaviours. In addition, it is the carrier of the culture of a given social system, and a form of participation in the world of values divided by members of the learning community. The social and cultural capital of the environment builds on the individual capital of a person and – based on feedback – activities undertaken intentionally by a person with the use of cultural tools have an impact on transformations in various areas of the reality creating the learning environment. Therefore, the attitudes of students towards their surroundings is of key importance to the educational value of the interactions taking place in that environment.

In school practice, it takes place in relation to cooperation within four main areas: learners (who?), teachers (with whom?), contents (what we learn?), objects, equipment and technology (what we learn and with what support?) (Dumont, Istance 2013: 52). In this way, a dynamic, multidimensional space is created, which is the beginning of the learning process. Regardless of the type of relations and their impact on the individual, parts of the surroundings can be perceived in the context of needs, and based on this principle they remain in interaction with the learner, building a subjective environment, whereas others create an objective system, serving as something that a student can reach for. Only “activity of the subject and development of conditions for this activity [...] is used to introduce parts of the objective environment into a direct, individual, and subjective environment of a child” (Basińska 2011: 452). It is important to notice interactions between possible configurations of parts of the environment and the personal features of the individual, which form his or her attitude towards the environment.

The learning environment understood in this way stops being treated only as a didactic support for the teacher, which means that “it is not the teacher who educates with the use of descriptive means, but the environment of the school class (among other things), which is a direct source of important educational impulses and cognitive conflict” (Kruk 2009: 494). The teacher, therefore, creates contexts, and the student draws from the teacher’s

activities only what seems useful to him (Thomas, Brown 2011). This perspective sees the teacher as an architect of the learning environment who stops being an expert in a given field, and becomes an expert in the development and shaping of a new learning environment. From the main source of knowledge and “the wise man at the teacher’s desk”, he is turned into an organizer of educational situations, a planner of outside conditions, a guide and adviser, supporting students in their intellectual development. On the other hand, the student, through his or her interests, cognitive activities and research, outlines the range and intensity of utilization of this surrounding.

Designing conditions for realising the intellectual potential of an individual and the shaping of cognitive frameworks which makes possible the acquiring of knowledge and skills, forces departure from the “*techne*” type of methodological education model, which is an instrumental activity requiring from the teacher reasoning in the categories of means and targets as well as technical proficiency in using a wide variety of strategies and procedures of didactic activity towards a methodology of education (Klus-Stańska, Kruk 2009: 502), which has its source in Aristotle’s idea of *phronesis*. In contrast to this, thinking about targets and selection of means, reflection accompanying choices that are made and judgment leading to rational decisions regarding procedure in concrete situations, should rather be the range of activities of all subjects involved in the process of creating the learning environment.

Turning school into a learning environment also requires crucial changes in the organization of the school structure. A flexible learning territory needs to be activated, which will be a place for creating educational initiatives and undertaking interdisciplinary projects, allowing every student to pursue his or her own ideas, develop interests and satisfy their curiosity. In addition to basic subjects, there should be an extensive offer of extracurricular activities. It also means a departure from strict time frameworks in terms of how classes are carried out, as well as a departure from detailed and long-term planning of didactic work from the teacher’s perspective. The organisation of a field for experimentation also requires changes in the spatial arrangement of classrooms. The way the teacher and students utilize the space of the classroom and the range of their access to teaching aids and the possibility of the free arrangement of classrooms to their current needs will also have an impact on the atmosphere of learning and mutual communication. In this way, students will be able to make their own decisions about a place to work, a partner to cooperate with and method of task performance, whereas the classroom – depending on needs – will be turned into an “exploratorium” or creative workshop.

Final reflections

As was mentioned earlier, school with its petrified structural-organizational system, just like teachers who have a conservative approach to the didactic process, does not match the fast changing world. “Every day, after another day at school, the gap deepens between what we teach children and what they should learn” (Khan 2012: 10). The physical and

mental anchoring of the student at a school desk effectively places his cognitive activity into hibernation and strengthens the submissiveness of his or her behaviour. Meanwhile, the culture of assimilation does not assure intellectual capital for adult life.

At the present time, we need a school that is open to new challenges, which requires first of all a readiness on behalf of teachers themselves to change their thinking on education and the courage to implement solutions resulting from the principles of a new culture of learning. Nowadays, when knowledge has stopped being something exclusive, we need a 3C student; which means creative, cooperative and with critical thinking skills. The basic task is to educate young people with the skills to adapt, to provide symbolic and methodological resources that constitute a valuable set of instruments for the learning process, as well as the organization of situations that are conducive to the acquiring of extracurricular skills.

Obviously, we have to be aware that school is not able to satisfy all the needs of students, but it can create a space of opportunities, establish an inspiring learning environment, which will serve as a training field of cooperation, creativity, learning and self-recognition skills. Students need a proper surrounding for undertaking independent cognitive activity, proper examples to follow and a lot of space for activity. Finally, as Bruner writes "Let these schools [...] be a place for the praxis (rather than proclamation) of cultural mutuality, which means an increase in the awareness that children have of what they are doing, how they are doing it, and why" (Bruner 2006: 120).

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