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Learning environment in remote education – from own practice of an academic teacher

Introduction

Education has accompanied people for ages. Education has no limits. The outbreak of the COVID-19 epidemic has created an urgent need to change educational conditions at all levels of education, including higher education (Zhang, et al., 2020).

The reactive adaptation to changes, situations about which we had not even thought earlier, took place within a relatively short period of time. E-learning requires an absolutely different approach and design of classes than the well-known patterns that have been used for years (Englund, Olofsson and Price, 2017). The time of the 2020 pandemic shows remarkably enough how current the question is – raised in very remote times – about pros and cons of models, strategies, methods and forms of teaching. It is required to use other methods of education or assessment techniques than in face-to-face education (Badia, Garcia and Meneses, 2019).

There are a lot of definitions of a learning environment, e.g. (Kwieciński and Śliwierski, 2003; Klus-Stańska and Szczepska-Pustkowska, 2009). The definitions have several common elements irrespective of a subject taught at school or the course conducted for students – organization of classes, kind / form of classes, methods of teaching, teaching aids and relationships.

The redefinition of teaching and the change of a teacher's / lecturer's role in virtual space are the beginning of our educational activities. The automation of the teaching process has been balanced by its humanization. Teachers very quickly realized that it is not possible to transfer 1-on-1 classroom attendance to distance learning.

The new model of teacher's work, worked out intuitively and by trial and error, based on self-reflection, is the beginning of distance teaching. Thorough knowledge of IT tools turned out to be extremely valuable, but the lack of it certainly did not rule out the possibility of the implementation of learning outcomes.

Teachers' reflection in the educational process

For professional development – especially for school/university teaching - the critical reflection is a crucial element (Bright, 1996, Merrifield, 1993, Brookfield, 1991, 1994). Reflection is a process in which effective educators regularly engage to formulate new strategies for changing behaviour in the classroom (Reagan et al., 2000).

The roots of reflective teaching are historically evident in the works of John Dewey (1933, 1938).

Reflective practice is needed to become a teacher (Meierdirk, 2016). A teacher's reflection is a key to becoming a skilled teacher: much better, reflective and effective teacher (Ghaye, 2000, Morley, 2007). Ryan and Cooper (2006) proposed some questions that a reflective teacher asks: " *What am I doing and why? How can I better meet my students' needs? What options are available? How can I encourage more involvement or learning on the part of the students? Have I considered my own values as a professional and my comfort level in acting on those values? What conscious choice can I make to make a difference?*"

Critical reflection is a major component in everyday teachers' practice (Van Manen, 1995, Willis, 1999). Based on own reflection teachers can benefit in overcoming the routine, make appropriate changes (strategy, method of teaching; didactic tools) and to develop abilities to solve problems. Understanding yourself, understanding how you have helped yourself to achieve and what this looks like in a practical learning environment is one of the most important elements of the daily work of a reflective teacher.

Learning environment – the concept and general characteristics

Skillful design of planned teaching situations is a very important component of efficient organization of work of a teacher and schoolkids. In the area of the organizational activity of a teacher the following components are of particular concern: proper arranging of pupil's physical environment, which has a decisive influence on the course of the teaching process, and also organizing teacher's work in classes.

The challenge for every teacher is to create an engaging learning environment that will motivate students to learn (Kim, C. et al., 2013, Kim, Glassman and Williams, 2015, Nami, Marandi and Sotoudehnama, 2016). Such an environment can be designed, for example, on the assumptions of the constructivist paradigm (Fosnot and Perry, 2005, Klus-Stańska, 2019). The ideas of constructivism, dialogical feedback and reflective practice have been known for years, although the desire to become a teacher practicing this theory remains unfulfilled for many (Kirkwood and Price, 2014).

It is equally important to plan the teaching process and set the goals of educational activity. Well-selected and formulated objectives are a stimulus and motivation for action, they give it the meaning, especially when they coincide with the values dear to an individual (Adamek, 2000).

Learning environment is based on the mutual influence of several elements:

- student, who is the subject of the learning process
- teacher, community and other specialists in learning,
- content transmitted to pupils
- facilities, equipment and technologies by which knowledge is transferred.

Three dimensions constitute the learning environment understood in this way:

- physical and structural – physical space, equipment and infrastructure of school,

- virtual and technological – using new technologies, teaching and learning on the web,
- social and cultural – school and local community, relations with world.[1]

According to Drucker (1992) pupils' education is the most important process at school, therefore it should have a central role in each evaluation of school work. The learning process of the pupil largely depends on the organization of the teaching process, which should be conducted in line with the knowledge about learning.

In modernly formulated didactics, learning process is largely planned, organized and realized from the point of view of students' needs, expectations and possibilities, whereas the activation of the virtual learning environment contributes to building autonomous learning motivation. For this reason that virtual learning environment is an Internet-based system, which corresponds to traditional educational systems, it provides access to organized groups of learners: grade levels, educational resources gathered by educational institutions and also by teachers and pupils (Borawska-Kalbarczyk, 2017).

The environment of on-line process of education plays a key role in distance learning, whereas in education it is the environment of blended learning. This is the learning environment integrated with the whole process of education in which all the basic components of contemporary education system cooperate: pupils, teachers, resources (contents), methods of teaching and technologies.

As Sysło (2014) shows, in conditions of using virtual learning environment, important requirements can be met, which underlie mobile education:

- there is a shift of emphasis from teaching to learning;
- personalization, which allows to create individual environments and vocational pathways is possible;
- the ideas of learning at any point in time and space are realized;
- a learner gathers their own individual resources in a personal file and can create e-portfolios based on them, which constitute food for thought on one's own education and development and a contemporary version of a learner's visiting card;
- the educational process can be asynchronous in nature, which means that not everyone learns the same simultaneously, and dispersed, that is, it happens in different places and at different times;
- the education system is based on constructivist ideas, namely building and developing knowledge by pupils in a real environment where they stay and progress.

In case of designing on-line educational process, attention should be paid to the specificity of this way of learning and functioning of virtual learning environment. It is worth remembering that on-line learning environments often are personalized environments, where pupils are able to take control of the process of their education and development thanks to setting out objectives of learning, managing its resources and processes and communicating with other learners.

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1 Eduspaces, *Przestrzenie edukacji 21. Otwieramy szkołę!*, http://eduspaces.szkolazklasa.org.pl/srodowiska-uczenia-sie-wstep/ , access: 18.08.2021

Designing, one should consider such aspects as:

- contents: resources, personal files of pupils and teachers, educational resources; electronic schoolbooks; e-portfolios; project environment; electronic class register, etc.;
- localization: cloud;
- access: wireless, from any location, wired, at school, at home;
- participating agents: pupils, teachers, parents, headmaster, leading authority;
- tools: computer, mobile devices with social media tools and dedicated multimedia applications.

The pandemic of COVID – 19 virus has undoubtedly created a new situation in every area of human life, also in the field of education, both in higher education and in primary and secondary schools, which are currently in a difficult situation.

Contemporary education took into account and reacted rapidly to a social situation thanks to modern technology. In addition to teachers and pupils of primary schools, academics and teachers of adults also faced serious challenges associated with the realization of their tasks in the situation, when direct communication is very difficult or impossible.

The coronavirus pandemic has caused the introduction of a number of limitations. One of them is the lockdown of educational establishments, and teaching is done in a remote mode. In this situation, distance teaching is the only solution, which ensures the safety of children, not resigning from educational continuity.

According to the Polish National Committee UNICEF[2], planning of the on-line educational process requires including several crucial issues:

1. Creating education plan adapted to the situation and the abilities of students.
2. Regular monitoring of the didactic process.
3. Providing facilities for the organization of distance education and the prevention of the phenomenon of digital exclusion of children and teachers.
4. Supporting teachers and parents for the participation in the process of digital education.
5. Ensuring online safety and development of the principles of netiquette in contacts.
6. Ensuring inclusiveness of the teaching process.
7. Paying attention to social-emotional development and mental health among students.
8. Motivating students to physical development and ensuring time for relaxation and amusement.
9. Maintaining continuous contact and establishing relations.
10. Students' participation in creation and the course of the educational process and ensuring the implementation of children's rights.

On-line learning environment enables the implementation of a lot of tasks and strengthens various levels of the educational process. One should indicate the improvement of the quality of independent and personalized learning, which is made

2 UNICEF, *Edukacja zdalna w czasie pandemii – zagadnienia, na jakie zwraca uwagę UNICEF Polska,* https://unicef.pl/co-robimy/aktualnosci/dla-mediow/edukacja-zdalna-w-czasie-pandemii, access:18.08.2021

possible thanks to the materials and the course of education adapted to individual learning needs. It is possible to increase student participation in one's own education, which is accompanied by personalized place in a virtual environment.

For example, Brown (2000) demonstrates that virtual learning environment also gives support to students with special education needs. It also makes easier for teachers to manage their time thanks to which they can devote more time to learners. As a result of making educational materials public in learning communities, it is possible to constantly correct and improve them. One can also notice increased parental involvement thanks to access to their children's places and resources in a virtual environment and departing from relentless competing for recognition and prizes. An important dimension is building a local learning community thanks to greater learners' participation in creating it.

The abovementioned levels strengthen teachers' activities in the process of the implementation of students' needs for belonging, competence and independence, which suggests that they will be a good way of building autonomous self-motivation as a structure with a stable disposition to treat learning as a value.

Learning environment – chosen elements from own perspective and practice

As teachers, we constantly develop our knowledge and shape various skills. Covid times increased our educational activity and the search for interesting didactic materials, solutions and sources. Numerous and some really interesting and valuable webinars appeared on the Internet. Based on these webinars, teachers can complete school subject, didactic knowledge and find many interesting inspirations for classes. As a reflective teacher, I have observed students' behavior. Everything mentioned above together with intuition allowed me to improve my educational actions. Some of them are presented below:

- Organization of classes:

a) the technical aspects of the organization of classes – identifying students' technology opportunities (technical problems; bandwidth of the connection); Internet stability is the factor, which improves or lowers students' satisfaction with the classes,
b) student's place of work – a traditional desk or another comfortable place, a position enhancing effective work,
c) clear structure of the classes – psychological "regularity of everyday life" and predictability condition a positive atmosphere which favors learning,
d) the principles of on-line work – netiquette (Fig.1),
e) the Teams platform – which are its possibilities? – calendar, tasks, files, attendance list,
f) tools for communication – the introduction of the rules and ways of communication: teacher – student, student – teacher, student – student facilitates building relationships and interaction which have an influence on the involvement in the educational process.

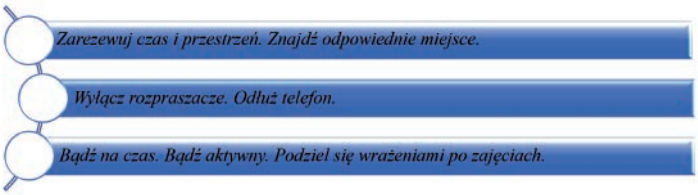

Fig.1. Proposal of netiquette.

- Classes – conducting and participation:

a) selection of the content realized in class in a direct way – attempt to answer the questions: what does a teacher have to discuss in class?; in this case less is more – according to the theory of Sweller's cognitive load, brain, which receives too much information, has to ignore certain content itself (Sweller, 2011),
b) the diversification of the means of transmitting information, content – *verbally*: lecture in synchronous and asynchronous time (recording a lecture we speak faster than usually and the duration of the lecture is much shorter – we divide it into several shorter parts – smaller fragments of the content are presented); *in writing* – the notes prepared by the lecturer made available before the classes (the elements of so-called flipped lesson), the notes prepared by the lecturer (Fig.2) , which are the summary of the classes (various forms of visualization e.g. a mind map, a sketchnote using smartphone applications, e.g.: miMind or Mindmeister), notes prepared by the students, so-called legal crib sheet stored on the platform before the classes (the note concerns the subject of the realized classes and has to be presented in any form on a B5 piece of paper – Fig.3); the tasks to revise the discussed topic (performed by a student within a specific timeframe); *practically* – films and animations with students'active involvement e.g. the animation called „Titrations of Acids and Bases" from the website www.vias.org/simulations or www.phlattelog.com

Fig.2. Sample teacher's note[3]

3 https://www.canva.com/

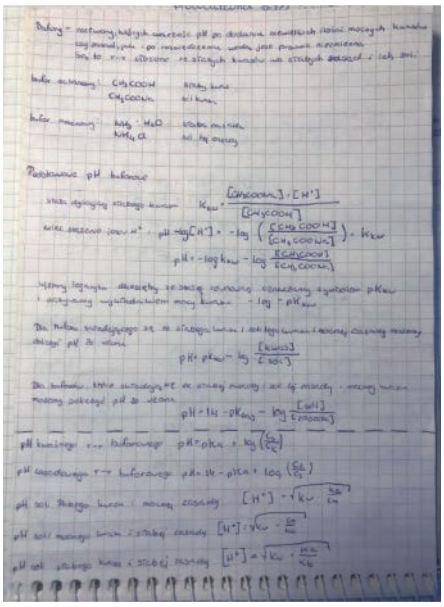

Fig.3. Sample student's note

c) the elements of gamification as a way of "maintaining" student's focus during classes, avoiding fatigue and holding their attention, e.g. Kahoo, Quizlet, Quizizz, Crossword Labs, Learning Apps (Fig.4).

Fig.4. Sample revision exercise[4]

4 https://learningapps.org/

d) work in groups – indispensable to create virtual interactions, activate cognitive processes: understanding, remembering, developing the ability of work in groups – students work collectively on the solution of a given problem, task, test, it counteracts distraction and demotivation; students with the feeling of accomplishment and the possibility of having it their way bring about cognitive tension indispensable in the educational process; this part has always been realized without grades so that a student will be conscious that "they learn in order to know – and not to pass – and they do it for themselves", the MS Teams platform allows to create rooms for work, which are constant or variable in terms of makeup,
e) eliciting a response; allocation of tasks, problems to solve – use of proper tools, e.g. wheel of fortune, Mentimeter.

Conclusion

Recent months have been a time of unexpected changes, since education is an action. Teachers faced an exceptional task – in many cases they had to go beyond a familiar, safe "rigid framework". Knowledge and education are certainly a superior value. Doing something new and difficult, we make mistakes, but we have preparedness to take action and courage to give up old habits and step into something completely new and unknown. The teachers have created vibrant social communities assisting each other. The exchange of experiences, teaching aids, sharing ideas and very constructive discussions are the added value of the situation. The teachers emphasize the possibilities of the development of adaptive capabilities in school children and students, their ability of coping in a changing environment as well as the growth of organizational skills, involving the right setting of the objectives and planning of activities.

Teachers have become aware of the fact that especially in case of distance teaching they serve as a highly valued reference point in the process of teaching and the factor, which organizes knowledge of pupils and students. And the latter already know that they need teachers in this process. The crisis situation may prove to be a catalyst for the desired changes in education.

Nobody has any doubts that - regardless of whether lessons/meetings are stationary or online - it is important not only what we convey, but also how we do it. Proficiency in using IT tools is an obvious technical basis. The main problems in remote education, on the other hand, are those of an educational, psychological and social nature.

Reflection plays a key role in everyday teachers' work. Nowadays, reflection is understood as a part of the process of lifelong learning.

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Abstract

The article elaborates on some topics about an environment of teaching and learning process. It contains the discussion focusing on the teachers' personal reflections about it as a crucial element of teachers' preparation for on-line students' meetings. The presented author's reflections are based on her own observations during the course "Basic chemistry". How to transfer knowledge through the computer screen in the absence of direct exchange of signals between the teacher and the student? Do we know how to avoid fatigue and distraction of our students during remote classes? Is it necessary to select the content for those that must be carried out in the classroom? Is it possible to build relationships remotely? Are the rules of online work, savoir-vivre in online classes necessary?

Keywords: learning environment, online education, good practices

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