INNOVATIVE TEACHING METHODS

Project Management in Practice

edited by
Lidia Pokrzycka

Maria Curie-Skłodowska University Press

INNOVATIVE TEACHING METHODS

Project Management in Practice

Working Together for a Green, Competitive and Inclusive Europe

The EEA Grants represent the contribution of Iceland, Liechtenstein and Norway towards a green, competitive and inclusive Europe. There are two overall objectives: reduction of economic and social disparities in Europe, and to strengthen bilateral relations between the donor countries and 15 EU countries in Central and Southern Europe and the Baltics. The three donor countries cooperate closely with the EU through the Agreement on the European Economic Area (EEA). The donors have provided € 3.3 billion through consecutive grant schemes between 1994 and 2014. For the period 2014–2021, the EEA Grants amount to € 1.55 billion. The priorities for this period are:

#1 Innovation, Research, Education and Competitiveness

#2 Social Inclusion, Youth Employment and Poverty Reduction

#3 Environment, Energy, Climate Change and Low Carbon Economy

#4 Culture, Civil Society, Good Governance and Fundamental Rights

#5 Justice and Home Affairs

The EEA Grants are jointly financed by Iceland, Liechtenstein and Norway, whose contributions are based on their GDP. Eligibility for the Grants mirror the criteria set for the EU Cohesion Fund aimed at member countries where the Gross National Income (GNI) per inhabitant is less than 90% of the EU average.

The project "Modern methods of teaching and project management" benefits from a € 8,600 grant from Iceland, Liechtenstein and Norway through the EEA Grants. The aim of the project is to raise the competences of the participants of the visit in the field of innovative teaching methods (ITM) and project management through the exchange of experiences and establishing cooperation in the implementation of projects with OsloMet.

INNOVATIVE TEACHING METHODS

Project Management in Practice

edited by
Lidia Pokrzycka

Table of Contents

Introduction

The publication handed over to readers discusses the innovative methods of education and project management in practice, taking into account the specific character of Norway in comparison to Poland. The book is an outcome of a study visit as part of the project "Modern methods of teaching and project management" financed under the Education Programme of the Foundation for the Development of the Education System (FRSE), Component I – EEA Financial Mechanism 2014–2021, and of a project conference.

The book consists of two parts. In part one, the visitors to Oslo Metropolitan University (in April 2022) present the specific character of e-learning in Norway, innovative education methods and effective ways of project management.

In the process of studying online we deal with a specific culture of study which gives the learners more independence. The majority of remote education participants demonstrate a constructivist approach to learning, whereas emotional and motivational factors have a profound influence on the cognitive activity of online students. In remote education, students' media competence is very significant. Online education alters fundamentally the role of the teacher: the entire teaching process is transformed, and it is the student who becomes the focus of education, while the teacher is just an advisor.

Experiences of foreign countries demonstrate that the decisive role in effective remote education of students is played by gamification, as well as by creative and critical thinking with the use of modern teaching apps. Thus, it is assumed that owing to the new technologies, it is possible to conduct most of the classes remotely, in a creative form which is interesting to learners.

In remote education, individual cognitive abilities and potential of e-students should be especially taken into account in order to apply the most tailored learning system. E-learning is based on autonomous education and self-study,

but also on teamwork and mutual participation in specific educational circumstances. The focus is both on particular research problems which students are supposed to solve (individually or in a team), but also on research and communication skills of learners. It is vital to teach students critical reception of media messages, their editing, computer-mediated communication, as well as effective management of the e-education process.

E-learning means a specific culture of study which is closely related to motivation, emotional factors and media competence of students, lecturers and administration staff of the university. In remote education, the time and mode of study are totally reorganized, while technological convergence provides the impulse towards searching for new ways of content dissemination, including websites, podcasts (also educational) and blogs.

Furthermore, these modern teaching methods ought to be matched by relevant educational and scientific projects which should be effectively managed. The organization of work of the whole university, including its administrative section, is also highly important. Efficient management is the basis for success in an innovative educational and scientific environment.

The second part of the book publication contains articles authored by the participants of the conference which was organized as part of the project "Modern methods of teaching and project management" in May 2022. The issues discussed in the publication include: the role of the leader in implementation of innovative teaching methods, motivating students in remote education, introduction of virtual reality as a learning tool, characteristic features of e-learning in corporations, as well as innovations in medical sciences.

I hope that this publication will prove very useful in implementation of modern methods of education, e-learning, ICT in practice, and will contribute to reflection on more effective methods of motivating scientific and administrative staff for organizational changes which are inevitable in the contemporary world. Appropriate management and support for innovation is the basis for competitiveness of universities on the global market. I encourage you to read and be inspired.

Lidia Pokrzycka

E-learning in Norway:
A Case Study of Oslo Metropolitan University

ABSTRACT

The article describes modern methods of education and approaches to education at Oslo Metropolitan University, which the author got acquainted with during a study visit in April 2022. In addition, the publication was enriched with a survey conducted among Norwegian students in the field of social sciences. The effectiveness of applying innovative methods of education and e-learning in practice was examined.

Keywords: e-learning, Norway, Oslo Metropolitan University, effectiveness of remote teaching.

Introduction

E-learning has been introduced and consistently developed in Norway for more than a decade now. Centres supporting remote education are established at various universities. Norwegian lecturers are aware that the future of academic e-learning lies in cooperation between students taking similar courses at various institutions. The focus is on open learning which offers technologies that are more interesting to students, provides for contact hours and the same level of learners' involvement at different attractive methods of learning any time (Clark & Mayer, 2016).

The objective of the article is to present the specific features of distance learning in Norway as exemplified by Oslo Metropolitan University and discuss the students' perception of innovative teaching methods. The article concludes with a questionnaire conducted among 20 students of Master's degree course

in social sciences, who – due to the coronavirus pandemic – completed modules at their last year of studies entirely in distance learning The examined sample is not large, but the number of students at particular years is small, so the research covered ca. 85% of all students of the final year of Master's degree course in social sciences.

Benefits of e-learning

Blended learning is considered to be the basis of the information society. In this type of study, teaching has a flexible formula, students' IT skills are additionally upgraded, the lifelong learning idea is implemented in practice, and the education system is organized accordingly.

In relevant literature it is emphasized that remote education should include practical teaching which encompasses the social media. They considerably enrich education – owing to them, students are able to share knowledge, solve tasks, find solutions and achieve goals through educational activities and development of competences, including teamwork skills. Furthermore, it is possible to find partners for international cooperation, comprehensive support and knowledge sharing, which leads to the achievement of better results and correction of actions already undertaken. The role of a university teacher is to work out a better route of teaching, correct any mistakes, boost productivity of actions, motivate students to gain knowledge, gradually switch from theory to practice, and help students acquire professional social competence (Amzalag & Shapira, 2021).

Moreover, graphic design of online courses and appropriate tools which help accommodate new educational solutions are of crucial importance (Delgado et al., 2019). It should not be forgotten about exchange of experiences between teachers and students and among students themselves, regular diversification of teaching methods and higher involvement of students in the learning process. It is not the teacher who is primarily accountable for students' success and achievements, but students themselves have to accept the burden of responsibility for effective learning (Fisher, 2003).

Development of skills, effective group work and analysis of authentic case studies are essential in the practice of distance learning. We should also remember that, with modern technical opportunities, online laboratories can function successfully, and education can make use of games, simulations and current feedback from teachers. The focus should be on practical actions, including preparation to apply specific skills in real situations, learning how to

adapt knowledge to given circumstances, and improving IT and social skills. Other essential issues are trust in online study and in one's own capabilities (at the time of the mass-scale distance learning: of teachers and students alike) and verification of learning progress on an ongoing basis (Hasani et al., 2022).

Students using the distance learning formula appreciate moderation of discussions, as well as appropriately managed interventions and interactions. However, the moderator (teacher) has to stay in the background and not in the centre of events. Effective e-learning is also based on proper motivation of students to learn and on regular work of both students and teachers.

Some students are focused on the content of study and comprehension of topics, while others on rewards – grades and final results. In online teaching, it is not only proper motivation that is crucial, but also demonstration of specific competences (personal, professional and social) to be acquired during remote education. Another important issue is the emotional attitude: students are more involved when there is cooperation, creative thinking and the use of practical apps that can be implemented later in professional work. It is necessary to participate in online discussions with students (in order to avoid one-way communication), specify goals of courses and adjust them to the participants' needs. However, we should not forget about regular verification of the learning progress, monitoring student's work by the teacher and a contact base necessary for effective education. Between consecutive modules of a course, students can learn from each other using the social media. Effectiveness of online teaching increases when specific goals of learning are identified, diverse teaching methods are applied, and knowledge is verified from time to time (also in the learning through play formula). In some cases, it is necessary to introduce elements of tutoring and mentoring (depending on the number of students in particular groups) and mutual teaching (the teacher does not know everything, he or she also learns from students, and students may have extensive professional experience and teach others on the basis of their own case studies). As regards e-lectures, important issues are selection of information, management of knowledge, its integration with effects of learning and transfer of practical knowledge (Laurillard, 2012; Marciniak & Cáliz Rivera, 2021).

E-learning makes work more innovative and time management more reasonable. It enables introduction of many projects and tasks that require specific problem solving. It is possible to consult solutions not only with course teachers but also with foreign experts (online learning facilitates international cooperation, without unnecessary expenses, which was particularly visible during the pandemic). Whenever possible, courses should be related to knowledge

already acquired by students. Furthermore, lecturers should present as many case studies and authentic contexts of tasks as possible, so that students would be able to apply knowledge easily in their professional work. However, it should be remembered that distance learning is not supposed to replace good lecturers but to facilitate effective study (Horton, 2006).

In order to design a good online course, we should identify specific goals, learning outcomes, competences to be acquired by learners and the scope of the programme. Next, educational content should be properly adjusted so that students are convinced that these materials are interesting/useful in their present or future occupation. It is also necessary to prepare and publish the course syllabus at the beginning in order to make students aware of the appropriate way to master the educational content. After that, lessons, modules and parts of the course should be designed, with each element focusing on different topic/competence. It is also worth considering which modern apps would be useful during the course to make students more interested. The final stage of the course design process is to plan how students' work would be evaluated. Ideally, they should apply elements of theory in specific tasks related to a given aspect of professional practice. Another important element of online courses is real-time discussion because it provides dynamics to a training course/module and encourages (or even forces) students to work online on a regular basis.

The above-mentioned principles are strictly followed at Oslo Metropolitan University and have become a guide for young teachers who are beginning their teaching work in the remote formula. The courses in which the author participated, and the classes described during the study visit to Oslo in April 2022 confirm that the majority of lecturers strictly adhere to the basic rules of effective remote work.

Methods of work at Oslo Metropolitan University (OsloMet)

In Oslo, e-learning has been used for many years and developed on a regular basis. A university newsletter is published, promoting good practices and distinguished work of lecturers, so that university teachers are able to upgrade their qualifications in innovative teaching methods on an ongoing basis. Departments which support distance learning are in close contact with university teachers and engage them in additional activities, the aim of which is improvement in education quality and involvement in international projects on e-learning implementation (also outside higher education institutions). Furthermore, training

courses are organized, presenting e.g., new functionalities of particular apps. A network of relations is built between lecturers so that they are able to share their knowledge. Regular meetings concerning good practices are organized on Zoom platform, e.g., to discuss students' involvement in distance learning or effective management of educational projects online.
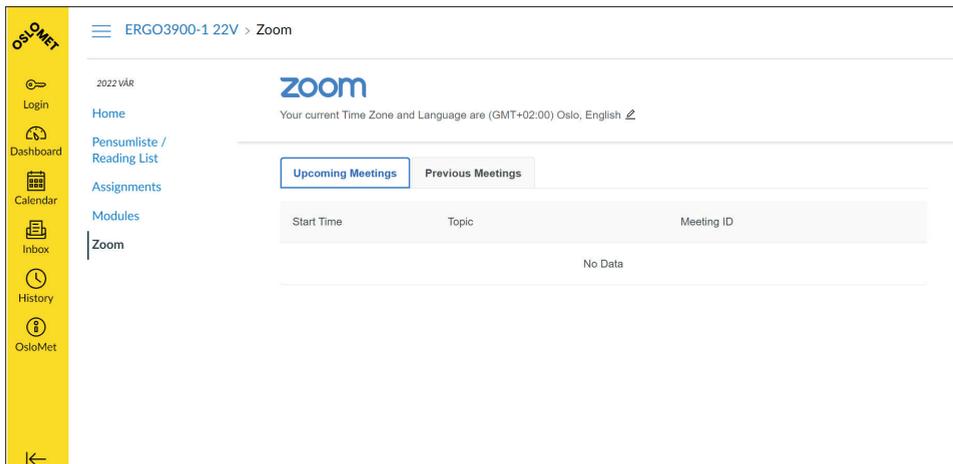

Figure 1. Zoom in OsloMet (main page of Canvas)

Source: http://student.oslomet.no/canvas (retrieved May 25, 2022).

As emphasized by the staff of Oslo Metropolitan University (OsloMet) during the study visit, students and researchers need to acknowledge that the society is changing, and the market demands have become completely different. Hence, semester grades are given and students' expectations about further course of studies are probed and communicated regularly to teachers. There are also meetings with educators during which official evaluation of classes by students is reported and possible innovations in lectures and classes are discussed.

During classes, interactive documents are used which can easily be edited by the participants, as well as teaching based on group projects, and peer assessment of particular stages of project result achievement. In general, remote work at OsloMet is based on group work, mind maps, but also work in Second Life. Such apps as Playing.cards, Jigsawplanect, Thinglink or MazeMap are used for illustrating classes and checking knowledge through play, but they can also be applied in the professional practice of a journalist or a marketing and PR specialist. Such platforms as Vimeo are also used during some classes for students to publish interviews conducted as part of social projects. Grades awarded

by teachers are only a part of course completion. Peer and group assessment of work is crucial, as well as self-evaluation. What is important, a student can change the evaluation of his or her work on their own and upload his or her project to the system once again (following discussion in a group).

OsloMet uses Canvas e-learning platform which is financed by the university. However, some lecturers break out of this system and pay subscription[1] on their own for other, more useful platforms, such as Eduflow which has more interactive opportunities for cooperation with students.
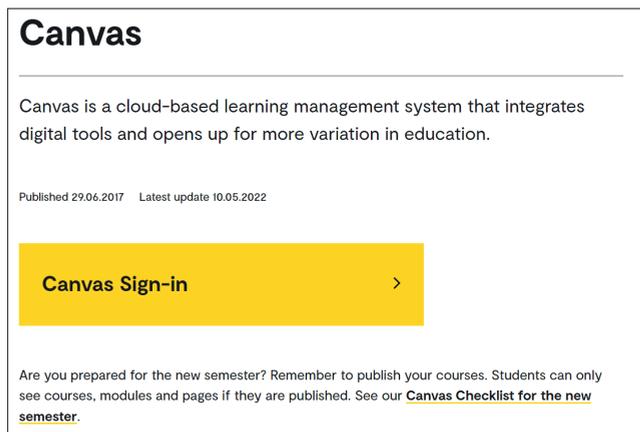
Figure 2. OsloMet Canvas main page
Source: http://student.oslomet.no/canvas (retrieved May25, 2022).

Figure 3. Sample page of a course as part of a bachelor's degree program
Source: http://student.oslomet.no/bachelor-ergoterapi (retrieved May 25, 2022).

---

[1]   Symbolic amount of a few euros per month (with very high earnings of academic lecturers in Norway, many times higher than in Poland).

Journalism students must be able to write well, therefore lecturers emphasize that active participation in classes is essential, and even more so: drawing conclusions, critical thinking, reading comprehension and writing essays summing up the classes. Interactive tools, such a Norwegian app Kahoot, are often used during classes and for monitoring their effectiveness.

Quite many courses at OsloMet are connected with the business sector or have been designed in cooperation with external stakeholders. In this respect, apps which introduce virtual world to education are fairly popular, for instance Second Life and currently Kitely app. They offer more direct, albeit still virtual, contact with the lecturer and other members of a group participating in a given class. Kitely app is especially popular at teaching courses in science and medicine, but also courses in social sciences are run in the virtual world. The pandemic accelerated the development of courses and training offered in this system.
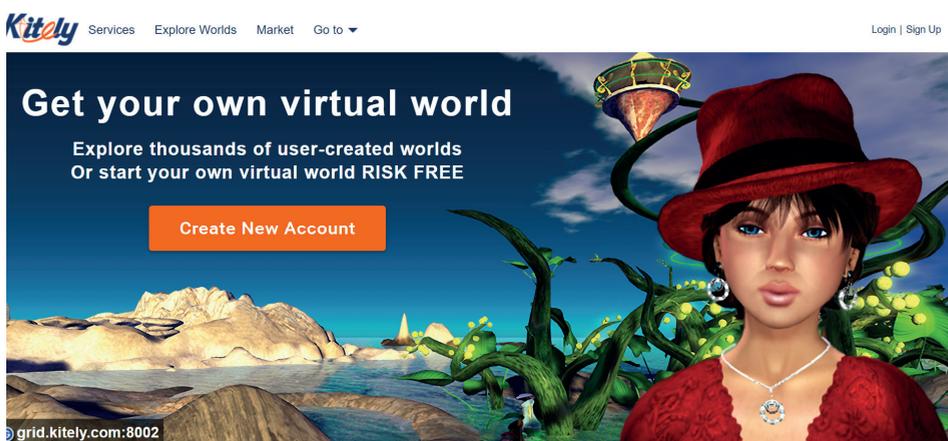
Figure 4. Main page of the Kitely application
Source: http://kitely.com (retrieved May 25, 2022).

What is characteristic of OsloMet is that each course is based on practical issues and learners are encouraged to work on their own, analyse case studies and participate in online conferences (this refers particularly to Master's and PhD courses). In the practice of teaching higher years of students, such apps as Slack, Brightspace, Blackboard, Socrative, Jamboard and Pitch2peer are used. In the case of the last app, interactive classes are taught, direct peer assessment is possible, the app cooperates e.g., with Moodle and Canvas, and interactive work groups can be organized. Pitch2Peer is a web platform which can easily be connected to a digital learning environment (Blackboard, Canvas, Brightspace etc.).

Learners can be asked to submit creative film, blogs and presentations, and can be allowed to review each other's works.

As OsloMet lecturers say, there is a need for constant innovation, flexibility, discovery of something new, adaptation of young people and senior lecturers to the new conditions of work, cooperation in groups, but also tangible work of students and lecturers that will lead to fulfilment of the formal requirements for course completion. A network of people, ideas and resources must be created to stimulate staff and students to changes and innovations. Teaching should be convergent with the research carried out at the university and be useful for both internal and external purposes (for external stakeholders). Teaching effects can provide a chance to transfer experiences and share knowledge also with entities which are not directly related to students' progress. Significant issues are values and results which will foster long-term development of the university and the cooperating companies; close relations between university authorities, external stakeholders and lecturers; participation in innovative projects; joint discovery of interactive tools (by university teachers and students); and development of a network of connections between the university and external environment. There must be organisations within the university's structure which promote its development and modern teaching methods.

Erika Gubrium, professor of Social Work, Child Welfare and Social Policy, claims that, although e-learning at OsloMet is based on Canvas, there is also considerable emphasis on support and dialogue between students and teachers also via other apps. Furthermore, clear and practical individual and group tasks are assigned, there is regular feedback – solutions to research problems are sought; students learn critical thinking, self-evaluation and peer assessment. Another important element is a research project summing up the semester.

The Padlet application is often used during practical classes that require group work. Below are some examples of the use of this program during the classes.

In addition, Padlet is often used: it contains plans of classes, order of topics to be discussed, case studies, exercises, information sources, guides with hints and project templates. During remote classes, students also learn how to carry out in-depth interviews and how to construct scientific papers and publications. Practical discussion of the outcomes of students' works takes place in groups after the works have been given individual peer assessment. The best projects are presented at a group forum as a kind of case studies.

After correction, the works can be sent for peer reassessment. At the end of the classes taught by Erika Gubrium, students choose one grade given by
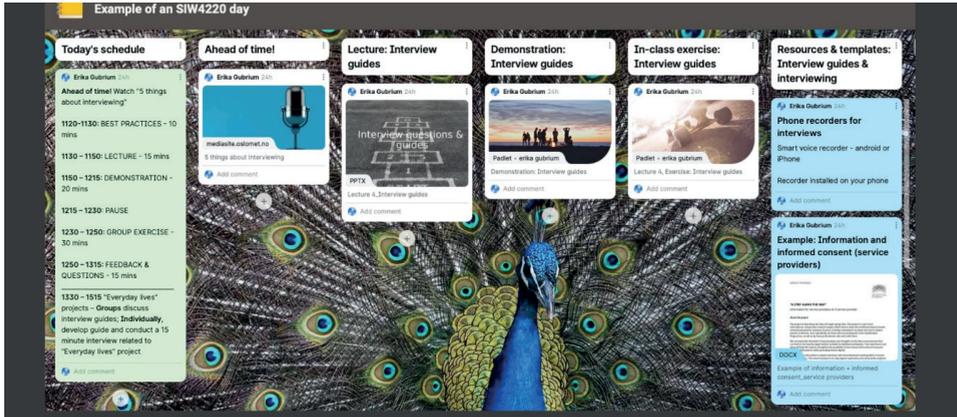
Figure 5. Sample content of the Padlet board
Source: Erika Gubrium archives.
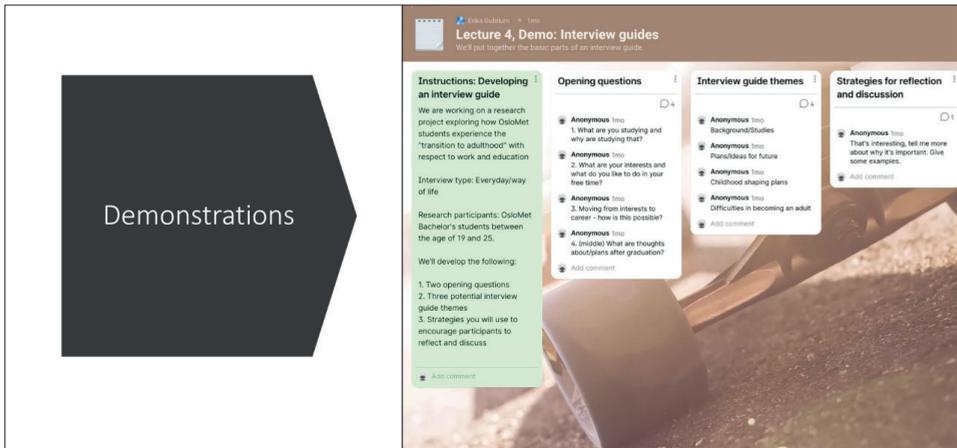
Figure 6. An example of using the Padlet application
Source: Erika Gubrium archives.

them, present arguments in favour of it, discuss it in the group and sum up the accuracy of opinions. Finally, students prepare an individual 10-page research paper and select four topics for analysis (out of research questions and project concept, literature review, scientific observations and notes, interview guidelines and in-depth interview, translation of a scientific text, analysis based on theory and conclusions of a young researcher, in-depth analysis). Next, they examine them on the basis of available resources and own thoughts, and they extend the context of the studied problem. The teacher monitors their progress on an ongoing basis.

Picture 7. Portfolio of assignments
Source: Erika Gubrium archives.

Results of a survey conducted among students at OsloMet

The visit to Oslo Metropolitan University was concluded with a survey conducted among 20 students of Master's degree course in social sciences, who completed modules at their last year of studies entirely in distance learning (due to the coronavirus pandemic). The examined sample is not large, but the number of students at particular years is small, so the research covered ca. 85% of all students of the final year of Master's degree course in social sciences.

The first question of the questionnaire was about what factors could most encourage the student to participate in didactic classes conducted via the Internet? The respondents had the option of multiple choice of answers.

Table 1. Question 1. What factors could most encourage you to participate in didactic classes conducted via the Internet? (Select any number of answers.)

Freely chosen learning time	20 votes
Individual mode / pace of learning	18 votes
Interactive, personal contact with the lecturer	5 votes
Financial reasons (travel costs)	16 votes
Other	–

Source: Author's own research.

The answers emphasise that in e-learning it is important to be able to choose the time of education, individualisation of teaching, but also financial factors. Interactive contact with the lecturer remains in the last place, due to the fact that students prefer direct contact.

In open-ended question 2, the author asked: What factors, in your opinion, may make it difficult to use classes conducted by the Internet in your field of study? The students replied as follows: "Work, not motivated, clashes with other courses"; "Tiring staring into a screen"; "Lack of motivation when no social contact with my peers (physical meeting)"; "The creative part, when we have to discuss, draw and think together"; "Informal exchange in the learning process"; "I do not have a problem with online classes, only thing is that I am missing out of the social part with my wonderful class". The most common response was: "Easily disturbed sitting home"; "Bad for the mental health" – these responses were repeated in over half of the surveys.

In question 3 (multiple choice) it was asked what form of didactic classes, in the student's opinion, was suitable for teaching via internet. All respondents emphasized that e-learning is appropriate for lectures. Voices were split for seminars and practical classes exercises, while no one selected laboratories.

Table 2. Question 3. What form of didactic classes, in your opinion, is suitable for teaching via the internet? (Select any number of answers.)

lectures	20 votes
seminars	14 votes
practical classes exercises	12 votes
laboratories	–

Source: Author's own research.

The next questions were linked with each other due to the time of the pandemic. Students were asked which forms of activity on the e-learning platform were the most useful – question 4 – and how the respondents rated the quality of online classes – question 5.

It turns out, therefore, that the most useful activities on the e-learning platform are related to requests, the possibility of posting files with documents and participation in discussion forms. The option to post links to external websites was the least popular.

Table 3. Question 4. Which forms of activity on the e-learning platform are the most useful? (Select any number of answers.)

Request	20 votes
Discussion forums	15 votes
Files with documents	20 votes
Website (links)	5 votes
Others	–

Source: Author's own research.

The answers to question 5 were quite similar. Eighteen people assessed the teaching in remote form as good. It was emphasised that it was important to have flexibility in the forms of such teaching, the lack of costs related to travel to classes, as well as the possibility of self-acquiring knowledge in a timely manner. Two people wrote: "I rate it low. Lecturers often stressed and not concentrated. Level of the education was low" and "I think it was one of the best solutions, to have a hybrid. We wrote our name on a list if we wanted to attend. Myself, I get a bit tired of being in classes a whole week, so it was perfect for me to attend 2–3 times classes at school, and also stay at home sometimes".

The next question was about what learners liked about e-leaning platforms. Sixteen people emphasized that they like very much the fact that all materials related to the classes are placed in one place, additionally synchronous connections are also possible, as well as ensured interactivity, also through discussion forums. Three people particularly appreciated the fact that important events in the course were recorded in the calendar posted on the platform. One person wrote: "I like it, but it can be boring or messy if we are doing it for too long".

Question number 7 was formulated as follows: "I do not like in the e-learning platform…". In this case, the voices were quite divided. Some emphasised that they were disturbed by technical problems (12 people), the teachers use it in different ways, so it's not that good system with every teacher (3 people); no breaks to talk about loose things with colleagues from the group and the lecturer, no direct contact (3 people); learning on the platform is tiring when it exceeds an hour (2 people).

Question number 8 concerned the respondents' possible plans to learn in the e-learning or blend-learning system in the future. The results of the survey are shown in Table 4. The respondents added that e-learning was very good for improving qualifications in other universities around the world, new development prospects are opening up, 3 people prefer teaching in the form of

blended learning, which seems to be more effective. One person indicated that he would not participate in future e-learning classes due to insufficient contact between students and the teacher.

Table 4. Question 8. In the future, do you plan to learn in a remote e-learning / blended learning system? Why yes/no?

YES	19 votes
NO	1 vote

Source: Author's own research.

Summing up the results of the questionnaire survey conducted among 20 students of Master's degree course in social sciences, it can be claimed that, in general, they are quite satisfied with e-learning classes. On the other hand, they miss direct contact with the teacher and their classmates, and sometimes classes are too long/grouped in two-week modules which are not conducive to effective work. However, in the conclusions to the questionnaire, almost all students claimed that in the future they would want at least a part of their studies or professional work to be done in the remote formula in order to save time and money.

E-learning at OsloMet is conducted professionally, even though there are still teachers who are considered the leaders of innovative teaching, while the majority of the university staff prefer direct face-to-face teaching, and they seldom participate in courses on e-learning and use of various teaching apps. As OsloMet teachers claim, the pandemic did not contribute to significant development of e-learning in Norway. Synchronous connections (usually via Zoom) are still considered the basis of distance learning, while apps, project tasks and implementation of teaching innovations in practice are regarded as the speciality of researchers dealing with such issues also as part of their scientific work (which is still rare). During the study visit the author found that OsloMet is considerably interested in educational innovations, but older lecturers are rather reluctant to devote their time to development of their teaching skills. The future belongs to innovators and scientists who deal professionally with popularization of innovative methods of working with young people at all stages of education.

RERFERENCES

Amzalag, M., & Shapira, N. (2021). Improving Intergroup Relations Through Online Contact. *The International Review of Research in Open and Distributed Learning*, *22*(1), 111–134. **DOI: https://doi.org/10.19173/irrodl.v22i1.5098**.

Clark, R.C., Mayer, R.E. (2016). *E-learning and the Science of Instruction. Proven and Designers of Multimedia Learning*. New Jersey: John Wiley & Sons. **DOI: https://doi.org/10.1002/9781119239086**.

Delgado, H., Delgado, M., & Hilton III, J. (2019). On the Efficacy of Open Educational Resources: Parametric and Nonparametric Analyses of a University Calculus Class. *The International Review of Research in Open and Distributed Learning*, *20*(1), 184- 203. **DOI: https://doi.org/10.19173/irrodl.v20i1.3892**.

Fisher, M. (2003). *Designing Courses and Teaching on the Web. A "How To" Guide to Proven. Innovative Strategies*. Oxford: Scarecrow Education Toronto.

Hasani, L.M., Santoso, H.B., & Junus, K. (2022). Designing Asynchronous Online Discussion Forum Interface and Interaction Based on the Community of Inquiry Framework. *The International Review of Research in Open and Distributed Learning*, *23*(2), 191–213. **DOI: https://doi.org/10.19173/irrodl.v23i2.6016.**

Horton, W. (2006). *E-learning by Design*. San Francisco: Pfeiffer.

Laurillard, D. (2012). *Teaching as a Design Science. Building Pedagogical Patterns for Learning and Technology*. New York: Routledge.

Marciniak, R., & Cáliz Rivera, C. (2021). A System of Indicators for the Quality Assessment of Didactic Materials in Online Education. *The International Review of Research in Open and Distributed Learning*, *22*(1), 180–198. **DOI: https://doi.org/10.19173/irrodl.v22i1.5069**.

The Use of Visual and Interactive Communication in E-learning Through the Example of Oslo Metropolitan University

ABSTRACT

The aim of the article is to present selected e-learning tools used at Oslo Metropolitan University. The research focuses on tools that use visual and interactive communication between the tutor and the student. The article is educational in nature and proposes the use of innovative teaching methods in undergraduate, graduate and doctoral studies.

Keywords: e-learning, visual communication, interactive communication, innovative teaching methods, OsloMet.

Introduction

Currently, a rapid multimedia revolution can be witnessed, which offers new possibilities of using visual and interactive communication (Wojtak, 2006) in e-learning. As with all technological advances, the advent of the digital age faces obstacles. Particular criticism is caused by the increasing domination of the image over language (Hopfinger, 2013) and the interaction with the use of artificial intelligence in the form of computers (notebook, smartphone) and the Internet instead of direct communication (Jamieson, 2007).

Many researchers, including Lidia Pokrzycka (2013, 2018, 2019), have been trying to oppose this post-thinking, in which education is confined to the walls of the university. Numerous studies have signaled the need to abandon old teaching patterns in favour of innovative methods using new technologies. Since the outbreak of the COVID-19 pandemic, there has been no doubt that e-learning is needed at every stage of education. In this article, the possibilities

offered by visual and interactive communication used in e-learning will be presented through the example of innovative educational tools used at Oslo Metropolitan University[1].

The multimedia revolution in teaching

The invention of print, the advent of the press, radio, telephone and television were all seen as advances in spreading communication. Today, a new communication revolution is taking place which uses new technologies to combine words, sounds and images as well as create simulated and virtual reality. The digitization of all media and the possibility of creating imaginary entities helps in the development of abstract and creative thinking and, above all, encourages critical thinking. These skills are especially valued in the dynamically changing labor market (Mateńko, 2017). The gap between skills the students learn and the ones they will need after graduation is becoming more and more noticeable. The current teaching methods are not able to prepare for work, which is dominated by new technologies.

Education in Oslo Metropolitan University (OsloMet) is part of the 21st Century Skills recommended in the 2016 report prepared by the Word Economic Forum, according to which 10 most important skills for the future include:
1. Analytical thinking and innovation
2. Activ learning and learning design
3. Complex problem solving
4. Chritical thinking and analysis
5. Creativity, originality and initiative
6. Leadership and social influence
7. Technology use, monitoring and control
8. Technology design and programming
9. Resilience, stress tolerance and flexibility
10. Reasoning, problem solving and ideation[2].

Innovative teaching methods are necessary in order to develop such broad range of skills. That is why e-learning in OlsoMet is based on 4 actions: ac-

---

[1]   The article is based on a study visit at Oslo Metropolitan University April 25–29, 2022. "Innovative Teaching Methods. Project Management in Practice".

[2]   https://oslomet.instructure.com/courses/23452/pages/21th-century-skills?module_item_id=399410 (retrieved April, 26, 2022).

tion-based exploration; action-based knowledge; action-based dissemination; action-based production.

OsloMet uses a variety of technologies for educational purposes. E-learning relies primarily on the Canvas platform, combining it with other digital tools. In addition, tools such as EndNote, Inspera, Office 365, Studentweb, Zoom are used.

Teachers are provided with technical support, which makes it easier for them to implement their curricula. Sharing knowledge between the lecturer and the student is not only the main task but it also enables the flow of new ideas, information and resources between all university staff. E-learning at OsloMet is based on the following principles:
- Close to those we are there for, the teachers;
- Outreach activities;
- High level of service;
- Participates in and initiates projects;
- Explores digital tools with teachers;
- Building networks across the organization[3].

The goal of e-learning at OsloMet is to activate students. The teaching process is decentralised, i.e., the role of the teacher changes and he or she is no longer a single source of knowledge. The role of the teacher is to organise the teaching process itself. Moreover, the use of new teaching tools reduces the level of formalisation between the teacher and the student. The emphasis is placed on collaboration, integration and mutual learning.

Designing the learning process must be in line with the expected learning outcomes, therefore the learning process at OsloMet considers the following questions: What will be a sufficient and clear evidence of the student's competence? What kind of tasks connect the learning activities to the learning outcomes? How do the tasks and assignments give focus to the learning activities? What criteria be assessed the assignments and their quality by? Can the assessment distinguish between the students who really understand and those who only seem to understand? Do I know why the students fail? As a result, teachers can plan their classes correctly.

---

[3] https://oslomet.instructure.com/courses23452/pages/21th-century-skills?module_item_id=39941 (retrieved April 26, 2022).

Visual and interactive communication

With the advent of the multimedia era, the interest in visual communication has increased (Osińska et al., 2017). Today it is a broad discipline covering various visual materials, both static and dynamic images, such as drawings, photos (Szylko-Kwas, 2013), graphics, videos (Duszyk, 2013), mind maps, charts, memes, infographics (Płaneta, 2003), instructions (Hopfinger, 2013). Communication by means of images is an important educational method. The use of the visuality strategy in didactics increases the effectiveness of teaching (Stradomska, 2022), generates greater involvement, helps to understand complex and complicated messages, such as numerical data, typologies and categorisations, to compile, organize and compare various results.

Video is especially attractive and effective in education. Film materials, by combining theory with practice, can increase students' engagement. They attract more attention with their dynamics, movement and colours. As a result, it is easier to assimilate, understand and remember various elements. Videos can evoke greater emotions and additionally develop empathy. They make it easier
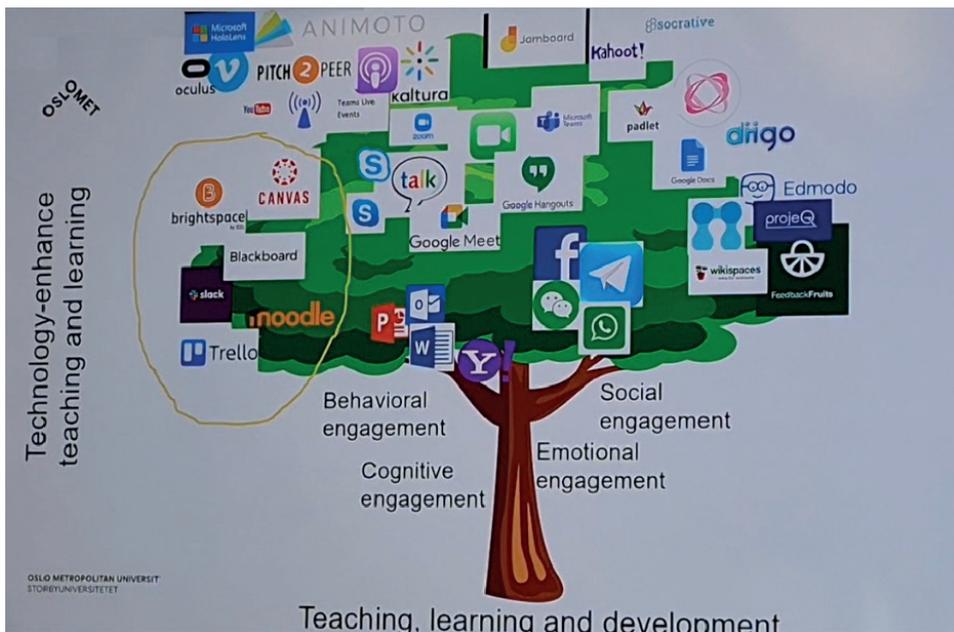
Figure 1. Presentation of Technology – enhanced teaching and learning in higher education by Wilfried Admiraal

Source: Photo of the presentation slide by Ewa Bulisz (retrieved April 28, 2022).

to demonstrate a design, process, operation, explain an exercise. Moreover, films can be a source of research material: statements, lectures, debates, discussions.

At OsloMet, teachers receive the following short instruction to help them understand step-by-step how to design a class using visual communication: identify current topics, identify important researcher and others who can shed light on the topic, identify focus area or person, search for videos by using keywords, names or filters, make an overview of current material, choose the best (preferably shortest) video[4].

As some researchers note, visual communication can strengthen research directions in which new ways of creative thinking are highly desirable - ranging from technical and social sciences, through new and traditional arts, to media studies (Williams & Newton, 2009).

ThingLink

One of the multimedia tools used in OsloMet's e-learning to create teaching materials is ThingLink. The program was created in 2010 by a Finnish company. Its creator is Ulla Maaria Koivula, who, while doing her PhD, came up with the idea of combining various pieces of information and links into one visual collection. Unlike many widely available audiovisual communication platforms, ThingLink is ad-free and available free of charge.

Today, ThingLink is used to create interactive visual messages using images: static photos, 360° photos, movies, 360° movies, sounds, virtual tours, 3D models, simulated reality and access in the form of digital photos to places

Figure 2. Official logo of ThingLink

Source https://www.thinglink.com/scene/728044362788765696 (retrieved August 22, 2022).

in the real world. It is dedicated to teachers, coaches, students and employees of various companies, institutions and organizations. In 2018, ThingLink was awarded UNESCO ICT in Education Prize for its innovative use of new technol-

---

4   https://oslomet.instructure.com/courses/23452/pages/video-stories-in-education?module_item_id=399795 (retrieved August 22, 2022).

ogy[5]. The official ThingLink website offers an online course preparing for the creation of teaching and business materials.

After creating an account and logging in to www.thinglink.com, the user can proceed to creating an interactive composition. Its purpose is to integrate various text, audio and visual materials into one image, which can take the shape of a photo, movie, 3D model, 360° image or 360° movie. Then, any number of tags (icons) can be added to it, referring to information in various files: text notes, voice recordings, music fragments, podcasts, graphic elements, photo reports, infographics, video clips, galleries, animations, maps, tables, charts, various websites/portals, such as Wikipedia, Google Map, blogs and other social media, such as YouTube, Facebook, official websites of companies, organizations, institutions, foundations, etc. The icons take the form of hyperlinks that lead the user to the relevant information. After placing all the planned icons, the creator saves the project, which can then be shared with students via a QR code or sent as a link ready to be posted on a blog or on social media.

Figure 3. Presentation of "Use of technology in teaching and learning at OsloMet. How DIGIN supports faculty in preparing for student active learning through digital tools" by Irene Lona and Camilla Foss, OsloMet

Source: Photo of the presentation slide by Ewa Bulisz (retrieved April 27, 2022).

---

[5]   ThingLink contains photos of the most important world heritage sites.

An important advantage of ThingLink is adaptation to the needs of the disabled, i.e., the functions of listening to the text being read (setting the reading rate, volume level, and even choosing a male or female voice), editing the text font (size, colour, shape). In addition, ThingLink also has practical functions such as the automatic translation of texts into more than one hundred languages.


Blank canvas	Image	360° image or virtual tour	Showroom, gallery	Map or aerial view
Infographic	Floor plan	Learning experience	Presentation	Product demo
Shoppable media	Video or 360° video	VR experience	Introduction or CV	Timeline
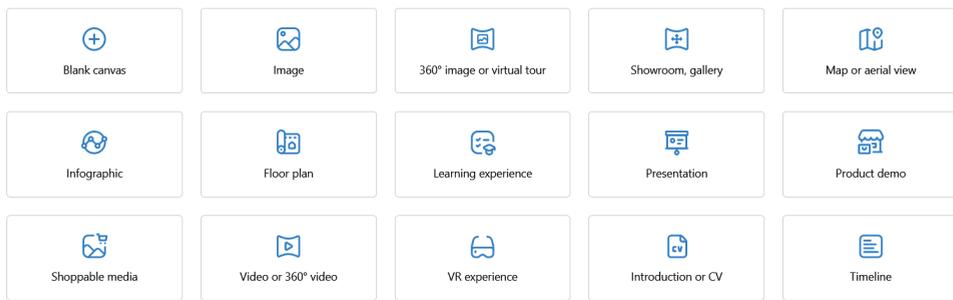
Figure 4. Type of interactive

Source: https://www.thinglink.com/user/1592684327001391105?ownerId=1592684327001391105&-modal=create (retrieved August 22, 2022).

An interactive composition can be created from a photo taken with a phone camera or from ready-made graphics, such as posters, drawings, caricatures, multimedia presentations, typographies, graphs, infographics, maps, drawing scans, comic books, screenshots. Materials can also be downloaded from the ThingLink library. The interactive composition can be saved as a JPEG, PNG, GIF, a PNG photo, 360° JPG photo or a virtual tour. Photos can be landscapes or portraits of any resolution, but maximum resolution is up to 12,000 x 12,000 pixels. ThingLink ensures optimization of displayed photos on all devices and readers: phones, notebooks and computers. The maximum video resolution is 1,920 x 1,080, and the recommended resolution is 640 x 360. ThingLink works with video files in MP4 format, with audio files in MP4 and MP3 format, and 360° photos should be saved in JPG format and maximum resolution 8,192 x 4,096. However, the company is constantly evolving and promises that all formats will be supported in the future.

The ThingLink dashboard makes it possible to organise visual assets into folders, move, copy, download and delete them. The teaching materials created can be saved as private or public resources. In addition, ThingLink has the option - Statistics, which allows the teacher to monitor the time required by the students to familiarise themselves with the individual elements of the interactive composition and to assess their involvement at different stages of the learning process.
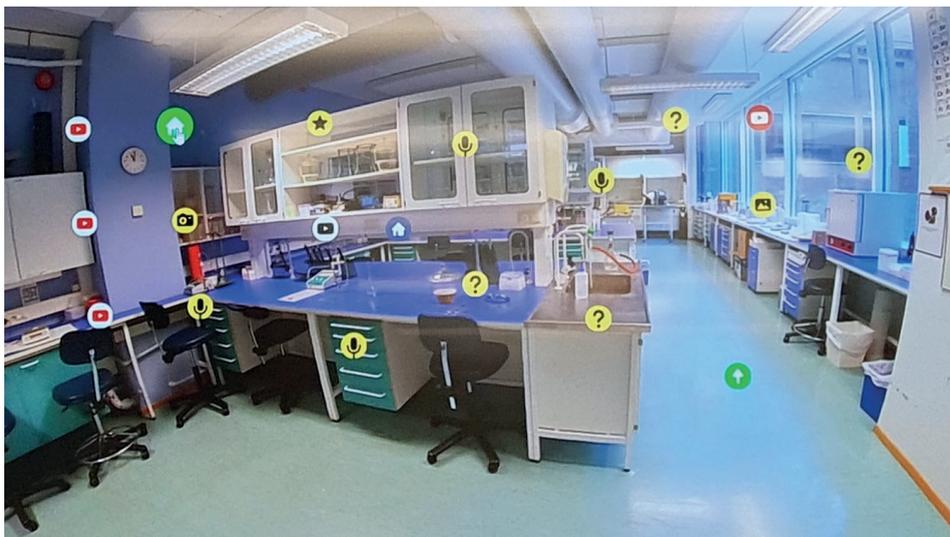
Figure 5. Presentation of "Use technology in teaching and learning at OsloMet. How DIGIN supports faculty in preparing for student active learning through digital tools" by Irene Lona and Camilla Foss, OsloMet

Source: Photo of the presentation slide by Ewa Bulisz (retrieved April 27, 2022).

ThingLink is integrated with Canva – a comprehensive tool that allows to create and edit images (Stradomska, 2022). It makes it possible to create interactive images or modify ready-made templates, adjusting them to the content being taught. Both Canva and ThingLink have their own visual databases, so teachers do not have to build visual assets from scratch. In addition, ThingLink is compatible with Google+, Pixabay, Shutterstock, Photoshop, Pinterest, Facebook, Twitter, YouTube. Saved interactive compositions can be edited at any time or made available to students, e.g., to supplement them with new content. A very interesting solution is the use of digital photos showing real places. Thanks to this, students can move around the virtual environment of their future work without disrupting the employees. ThingLink allows to create virtual scientific journeys, which makes it possible for students to explore their knowledge on a specific topic in a creative, attractive, flexible and effective way. At OsloMet, new students can get to know the university through the Escape Room created in ThingLink. The task is to solve the puzzle and find the exit route, which is also a virtual 360° photo of the real campus of the university.

Teaching materials prepared in ThingLink give students the opportunity to find different information on their own. Students can create interactive images themselves, which increases the involvement in the teaching process (Jóźwik, 2017).
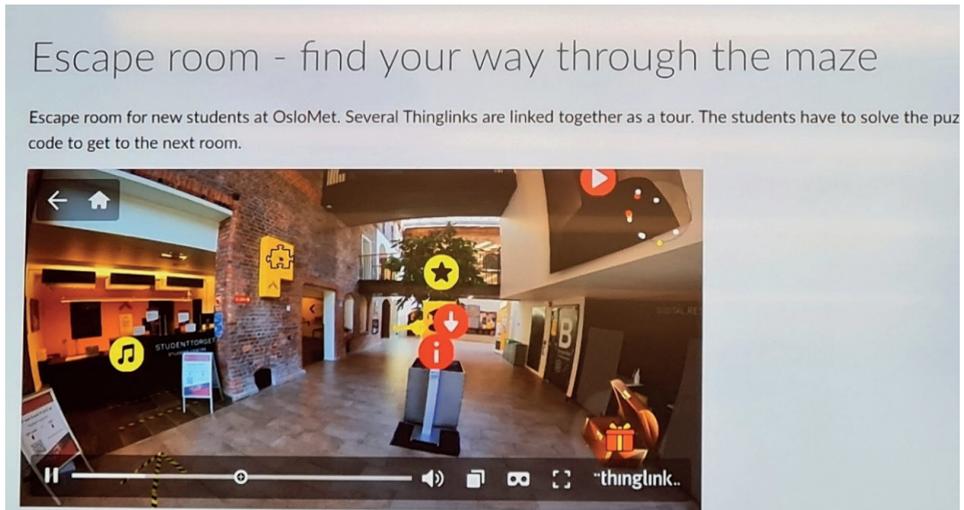
Figure 6. Presentation of "Use technology in teaching and learning at OsloMet. How DIGIN supports faculty in preparing for student active learning through digital tools" by Irene Lona and Camilla Foss, OsloMet

Source: Photo of the presentation slide by Ewa Bulisz (retreieved April 27, 2022).

During the learning process, students can decide if they need to learn more by discovering more tags. In addition, the variety of codes (text, sound and visual) allows them to choose the best learning method for their current purposes. ThingLink makes it possible to independently decide about the pace and sequence of the acquired material. The student is able to navigate through the content that involves large amount of text and graphics.

In ThingLink, the created interactive compositions can be shared and used by others However, it is important to make students aware of the importance of copyright when using photography on the Internet (Zakrzewska, 2013). The programme works like a virtual global school.
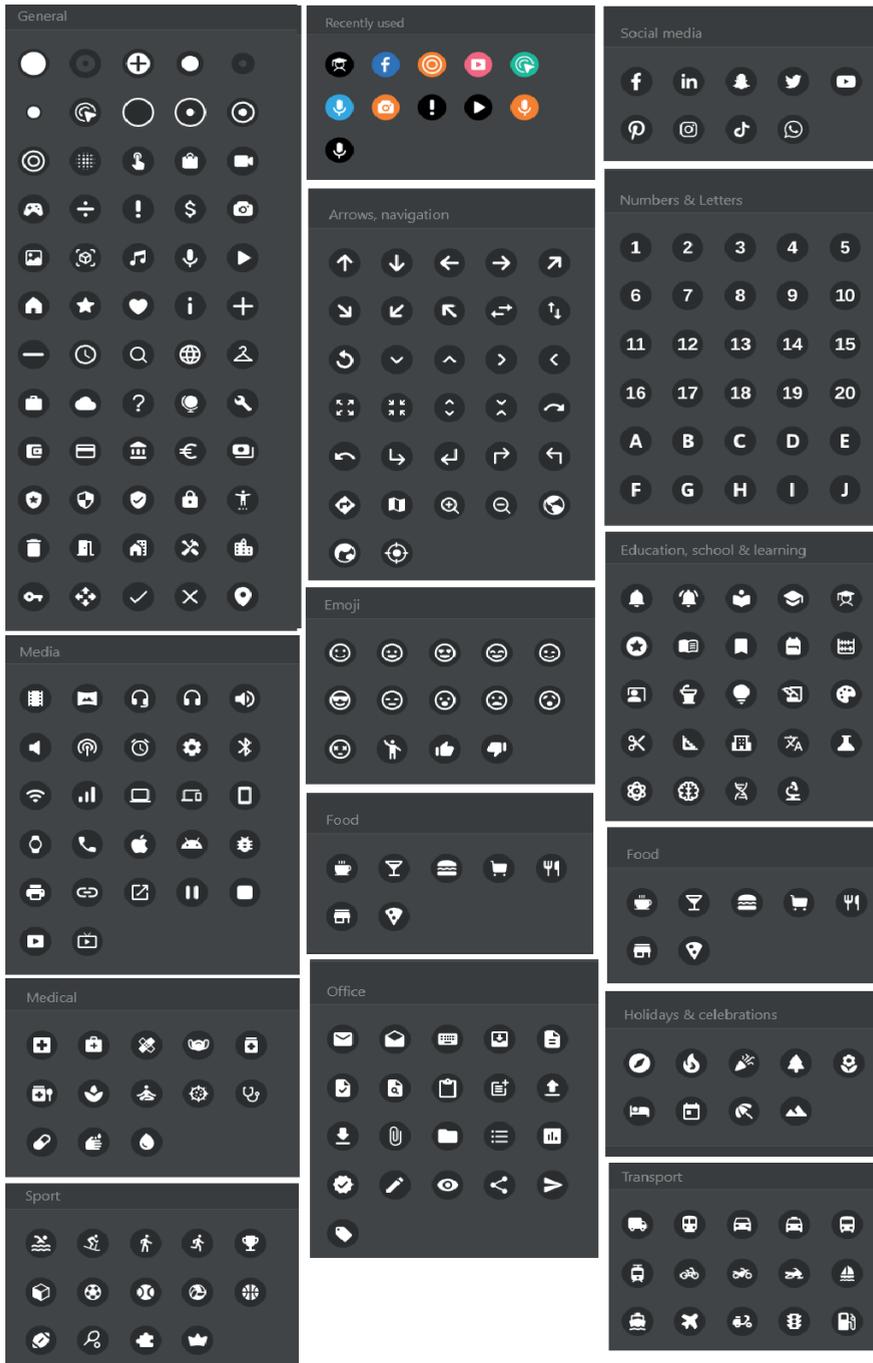
Figure 7. Types of tags

Source: https://www.thinglink.com/scene/1606329927903215617/editor (retrieved August 22, 2022).
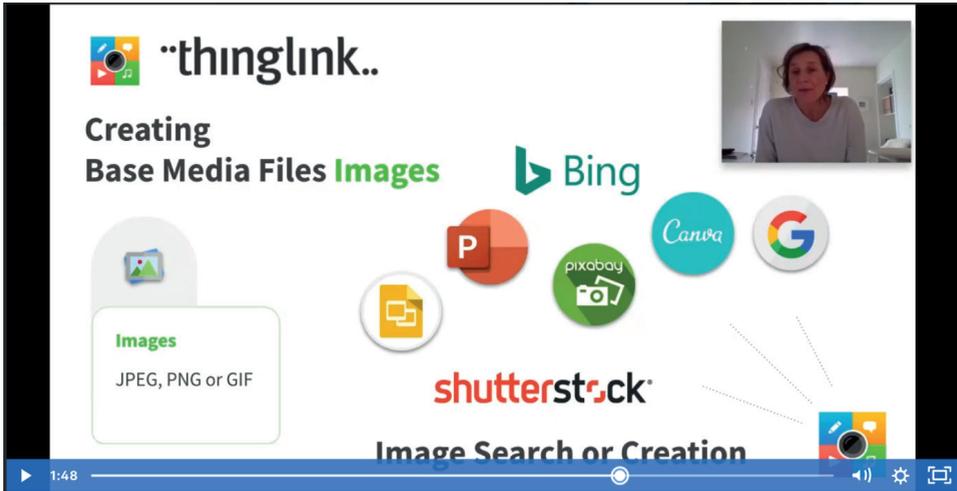
Figure 8. Learning center ThingLink

Source: https://www.thinglink.com/learning-center (retrieved August 22, 2022).
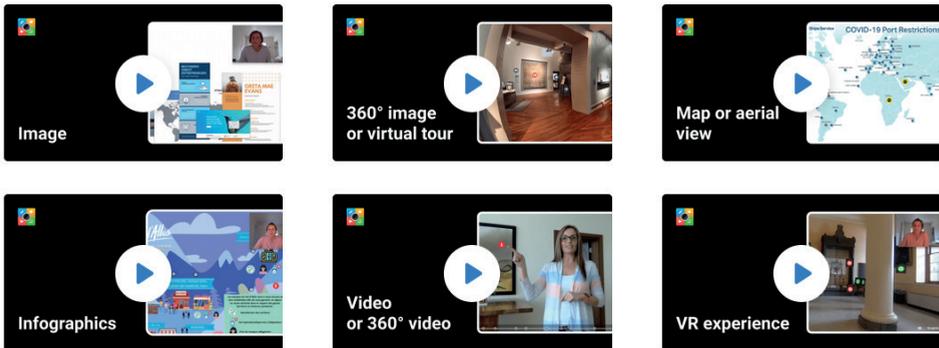
Figure 9. Tutorials ThingLink

Source: https://www.thinglink.com/learning-center (retrieved August 22, 2022).
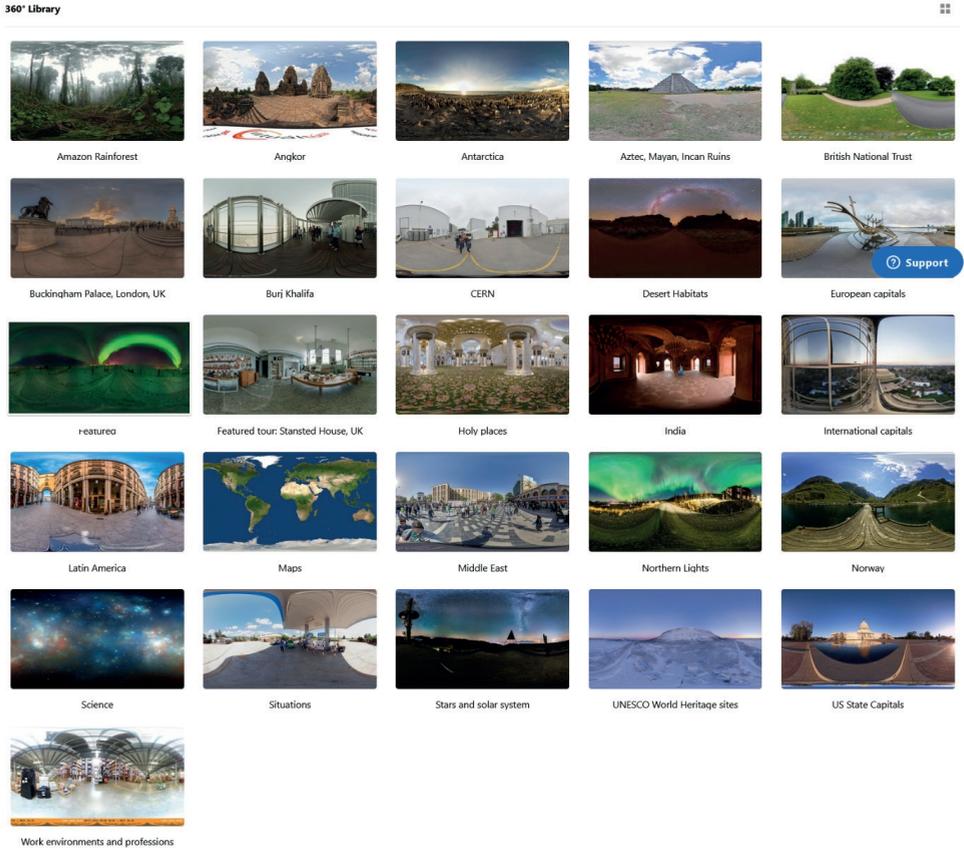
Figure 10. 360° Library collection Thing Link
Source: https://www.thinglink.com/library (retrieved August 22, 2022).

Feedback Fruits

In the teaching process, student feedback is particularly important as it allows teachers to obtain better learning outcomes. For this purpose, OsloMet uses Feedback Fruits. It is an interactive tool integrated with Canvas that includes many activating exercises for students. The tool is available free of charge to higher education institutions upon application. Its purpose is to identify students' needs and to provide more feedback on the learning process. In addition, the tool allows for peer review among students, thus increasing the activation and effectiveness of teaching.

Contrary to the traditional one-way lectures in which information comes only from the lecturer and students are often passive in the reception of con-

tent, Feedback Fruits introduces omni-directional communication – both between the lecturer and students and between the students themselves. In addition, the tool ensures anonymity, as a result students may have more courage to ask a question through Feedback Fruit than in the group forum. It is also easier for them to express their opinion on the work of their colleagues. Creating and receiving feedback is a very important soft competence desired by future employers. The tool, therefore, plays an important role in preparing for work. In addition, Feedback Fruits generates a lot of data that can be used in e-learning research.

Figure 11. Official logo: Feedback Fruits
Source: https://www.facebook.com/FeedbackFruits/photos/a.122223924617431/1405397382966739 (retrieved August 22, 2022).

The tool makes it possible to add interactive moments in videos such as closed and open-ended questions, single and multiple choice tests, quizzes, interactive online discussions. As a result, students need to read and master a certain portion of the material before proceeding further. Online discussion tools teach critical thinking. The lecturer's task is limited to organizing the teaching process and mutual exchange of ideas through online discussions. Peer feedback tools also enable giving feedback to students' works according to the criteria and scale introduced by the lecturer. The tool provides students with information about their soft and hard skills. Data is collected and sent automatically on the basis of a form created by the lecturer. The tool supports learning through collaboration and exchange of thoughts. In addition, it helps in organizing team work on a joint project, which is another skill desired by employers. Feedback Fruits supports the process of using various materials, such as text and audio notes, infographics and videos.

The official Feedback Fruits website includes, among others, comments from OlsoMet teachers[6]:

"This tool provided a better overview of students performance and progress over the duration of the course." – Runa Oudmayer, PhD.

"This tool provided a better overview of students' performance and progress over the duration of the course. It enabled me to try new methods in teaching, prompt self-reflection on feedback, and guarantee anonymity in an online platform." – Åsmund Hermansen, associate professor.

---

[6]   https://feedbackfruits.com/peer-review (retrieved April 27, 2022).

Feedback Fruits is used in OsloMet for peer assessment and developing students' ability to provide qualitative feedback in the form of audio recordings or text notes. An additional advantage is the socialization of students, encouraging cooperation and integration. Students learn to accept and give critical and constructive evaluation of their own as well as their colleagues' work. Feedback Fruits develops analysis, evaluation, self-reflection.

Summary and conclusions

When universities switched to distance learning, innovative e-learning tools not only ensured continuity of learning, but also increased the possibilities offered to organize the learning process. The main advantage of visual tools in connection with interactive communication has become the faithful transmission of information in the form of images, films and recordings via mobile devices from anywhere in the world with the possibility of immediate reaction of students in any textual or audiovisual form. Tools such as ThingLink or Feedback Fruits help in the collection, selection and digitization of various types of scientific materials (new media convergence). This can help students learn more about social, technical, natural and cultural issues, as well as simulated reality, which, in turn, helps them develop abstract thinking (Pokrzycka, 2021, 2022). Visual communication tools have instructional and presentation functions, which means that students can return to the material many times, so as not only to consolidate knowledge, but also to gain practical skills. Additionally, interactive communication tools allow for the exchange of information, sharing of knowledge and multi-directional discussion of students' work. The dynamically developing educational technology (edutech) industry, using the achievements of communication and IT research, designs and creates increasingly better tools to facilitate learning and evaluate the results of the teaching process. The combination of visual and interactive communication through ThingLink or Feedback Fruits aims at developing critical thinking, encouraging independent reflection, facilitating the evaluation of the results of the teaching process, improving and accelerating the exchange of information, and activating students to explore their knowledge on their own. The benefits and risks of ICT require additional research. It is impossible to assess the effectiveness of visual and interactive tools in the teaching process at the moment, but high hopes can be placed on them.

REFERENCES

Bibliography

Duszyk, K. (2013). Wideoklip jako komunikat medialny. Wartość estetyczna i funkcja. In: K. Wolny-Zmorzyński, W. Furman, J. Snopek, & K. Groń (eds.). *Komunikacja wizualna w prasie i mediach elektronicznych*, (pp. 179–197). Warszawa: Wydawnictwo Poltext.

Hopfinger, M. (2013). Czy obraz wypiera słowo?, In: K. Wolny-Zmorzyński, W. Furman, J. Snopek & K. Groń (eds.). *Komunikacja wizualna w prasie i w mediach elektronicznych*, (pp. 11–14). Warszawa: Wydawnictwo Poltext.

Jamieson, G.H. (2007). *Visual Communication. More than Meet the Eye. The University of Chicago Press*. Chicago: The University of Chicago Press.

Jóźwik, K. (2017). *Myślenie wizualne 2.0. Skuteczna komunikacja*. Warszawa: MT biznes.

Mateńko, A. (2017). Znaczenie innowacyjnych metod szkolenia pracowników we współczesnych organizacjach. In: J. Bieńkowska (ed.). *Kreatywność w praktyce biznesowej*, (pp. 123–136). Łódź: Wydawnictwo Uniwersytetu Łódzkiego, **DOI: https://doi.org/10.18778/8088-614-8.11**.

Osińska, V., Malak, P., & Bednarek-Michalska, B. (2017). Rozwój badań nad wizualizacją informacji. *Annales Universitatis Paedagogicae Cracoviensis, Studia Ad Bibliothecarum Scientiam Pertinentia*, 14, 58–76, **DOI: https://doi.org/10.24917/20811861.14.4**.

Płaneta, P. (2013). Infografika w prasie: między przejrzystą informacją a jałową estetyką. In: K. Wolny-Zmorzyński, W. Furman, J. Snopek, & K. Groń (eds.). *Komunikacja wizualna w prasie i mediach elektronicznych*, (pp. 45–58). Warszawa: Wydawnictwo Poltext.

Pokrzycka, L. (2013). E-learning w Islandii. Studium przypadku Reykjavik University. In: Z.E. Zieliński (ed.). *Rola informatyki w naukach ekonomicznych i społecznych. Innowacje i implikacje interdyscyplinarne*. Kielce: Wydawnictwo Wyższej Szkoły Handlowej.

Pokrzycka, L. (2018). Aplikacje w dydaktyce. Szanse i zagrożenia. In: T. Gackowski, K. Brylska, M. Patera (eds.). *Komunikowanie w świecie aplikacji*, (pp. 111–129). Warszawa: Oficyna Wydawnicza ASPRA.

Pokrzycka, L. (2019). Efektywność e-nauczania w szkolnictwie wyższym. Studia przypadków. *Zarządzanie Mediami*, 7(1), 15–27, **DOI: https://doi.org/10.4467/23540214 ZM.19.002.10773.**

Pokrzycka, L. (2021). Rola aplikacji dydaktycznych w nauczaniu zdalnym. *e-mentor*, *1*(88), 30–36, **DOI: https://doi.org/10.15219/em88.1500**.

Stradomska, M. (2022). Visual Thinking (VT) in Educational Issues. In: L. Pokrzycka, R. Wallace Vaagan (eds.). *Innovative Teaching Methods. Project Management*, (pp. 39–54). Lublin: Wydawnictwo UMCS.

Szylko-Kwas, J. (2013). Fotograficzny przegląd tygodnika – fotografia w tygodnikach opinii. In: K. Wolny-Zmorzyński, W. Furman, J. Snopek, & K. Groń (eds.). *Komunikacja wizualna w prasie i mediach elektronicznych*, (pp. 75–85). Warszawa: Wydawnictwo Poltext.

Williams, R., & Newton, J.H. (2009). *Visual Communication. Integrating Media, Art, and Science*. Mahwah, New Jersey: Lawrence Erlbum Associates, **DOI: https://doi.org/10.4324/9780203874998.**

Wojtak, M. (2006), Interakcyjny styl komunikowania w prasie kobiecej. In: J. Mazur, M. Rzeszutko-Iwan (eds.). *Teksty kultury. Oblicza komunikacji XXI wieku*, (pp. 115-128). Lublin: Wydawnictwo UMCS.

Zakrzewska, A. (2013). Aspekty prawne wykorzystania fotografii w internecie. In: K. Wolny-Zmorzyński, W. Furman, J. Snopek, & K. Groń (eds.). *Komunikacja wizualna w reklamie, public relations i w prawie*, (pp. 254–263). Warszawa: Wydawnictwo Poltext.

Netography

https://oslomet.instructure.com/courses/23452/pages/21th-century-skills?module_item_id=399410

https://oslomet.instructure.com/courses/23452/pages/video-stories-in-education?module_item_id=399795

https://www.thinglink.com

https://feedbackfruits.com/peer-review

https://www.thinglink.com/scene/728044362788765696

https://www.thinglink.com/user/1592684327001391105?ownerId=1592684327001391105&modal=create

https://www.thinglink.com/scene/1606329927903215617/editor

https://www.thinglink.com/library

https://www.facebook.com/FeedbackFruits/photos/a.122223924617431/1405397382966739

"The Teacher-Leader" and "The Teacher-Boss": Their Influence on Student's Motivation to Learn

ABSTRACT

This article is a theoretical work on issues related to motivation in teaching. The article presents issues related to two different ways of implementing the teaching process. The teacher also has an influence on what the process looks like and what can be achieved in this aspect. The categories of "teacher-leader" and "teacher-boss" will be discussed. The first one focuses on the development of students in an interdisciplinary approach. The second conveys knowledge, regardless of whether the method of communication is adequate and understandable. The article provides ideas for building student's motivation and contains recommendations for people responsible the education process.

Key words: "teacher-leader", "teacher-boss", motivation, educational process, learning

Introduction

The system of incentives used in school often demotivate the students and prevent them from achieving success in learning, to make efforts to acquire knowledge. People often deal with a "skill race", which does not increase to learn, but leads to unhealthy competition, creating antagonisms, interpersonal conflicts, shaping negative personality traits (Szmigielska, 1995). The reward system promoting the "skill race", often imposed by teachers, reflects a negative motivation to learn, because it encourages people to acquire new skills as a way to avoid feeling worse than others. Others are unaware of the consequences of this type of approach in the future. For example, the skill race is characterized by the following features: success is defined by having good grades and getting

better results than other students; the main source of pride is to do better than others; other students are an obstacle to success; the teacher or school system is the judge; the mistakes are treated as a sign of stupidity. In this case, selected ideas have been cited, however this list is not exhaustive (Stradomska & Barłóg, 2020).

What is more, situations in which self-improvement, creativity, curiosity, taking up new intellectual tasks, marking the "game of equal opportunities" are rewarded. Another way of equality rules is to experience the satisfaction of learning when students have made the effort to improve something, to complete a specific task at a higher level. It should be emphasized that satisfaction with a successfully completed task strongly supports possibility and strengthens self-esteem (Stradomska & Barłóg, 2017).

This also applies to situations when others have completed the task faster and more efficiently. The game of equal opportunities involves offering the student various motivations to learn, taking into account their personal needs.

It is difficult to describe unequivocally which model will be more effective when it comes to the students' future. It is important, however, that it should not cause the young person not to be willing to participate in the education process at all (Stradomska, 2020).

Selected models of motivation

Motivation is a theoretical construct that explains the occurrence of a certain behavior, its orientation and its process. In relation to school, it concerns the subjective experiences of the student, his or her willingness to engage in lessons and learning activities. In the relevant literature, it is possible to find various approaches to the problem of the origin and construction of motivation.

However, in cognitive approaches to motivation, greater importance is attached to the subjective characteristics of the student: needs, goals and related thinking. One such theory of motivation is Abraham Maslow's theory of the hierarchy of needs. Satisfying lower needs and the emergence of higher-order needs is the main mechanism of changes in the behavior of an individual. Maslow argues that needs must be met in a certain order. The lowest in the hierarchy are physiological needs (e.g. sleep, food), followed by security needs (e.g. lack of fear), then affiliation needs (love, belonging), then the needs of respect (achievement, prestige), and the needs of self-realization (creative expression, curiosity satisfaction) are the highest. Translating this hierarchy of needs into
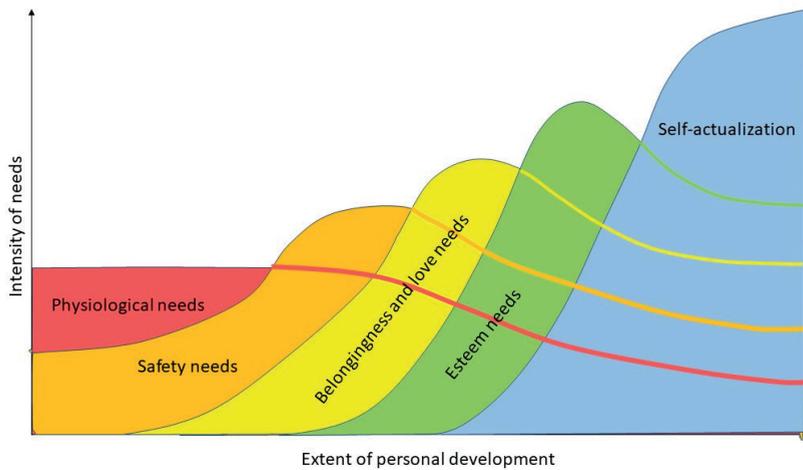
Figure 1. Intensity of needs and extent of personal development
Source: https://stevenrsouthard.com/tag/abraham-maslow/ (retrieved June 18, 2022).

Figure 2. Maslow's hierarchy of needs
Source: Simplypsychology, https://www.simplypsychology.org/maslow.html (retrieved June 18, 2022).

school situations shows that, for example, a hungry child will find it difficult to focus on learning and assimilating the material (Cywińska, 2012).

Among the cognitive models of motivation, the concept of motivation by Joseph Nuttin, in which the author presents a relational definition of needs, seems to be worth mentioning (Cywińska, 2012). Joseph Nuttin was a scholar and an author. He was active in the fields of learning, motivation, and person-

ality (Tokarz, 1995a). Researcher distinguishes two basic dynamisms of human activity. One, directed "towards the subject", is focused on the activity related to one's own development, the other, directed "towards the objects", reflects the individual's focus on contacts with social, cognitive and things objects. According to Nuttin, motivation results from the individual construction of a world in which cognitive needs play an important role, including the pursuit of growth and development, exceeding the already achieved level of development (Tokarz, 1995b).

In other theories of motivation, the driving factor that determines the direction of an individual's activity is not the need, but the specific goal to be achieved by a person. For example, Ford (1992) developed a theory of motivation consisting of 24 goals that were divided into 6 categories. These goals are:
· emotional (e.g. peace, contentment, entertainment),
· cognitive (e.g. satisfying curiosity, finding out about something),
· subjective harmony (e.g. experiencing a feeling of harmony, experiencing a feeling of perfect functioning),
· subordinating social relations to one's own interests (e.g. experiencing one's individuality, self-determination),
· integration through social relations (e.g. fulfilling social obligations, acting for integrity, providing social support),
· task-oriented (e.g. efficient and effective implementation of daily tasks).

Such theories of motivation often show the need to integrate many goals, harmonizing them in such a way as to achieve most of them.

Characteristic features of the motivation to learn

Motivation to learn differs from extrinsic motivation, triggered by reinforcements, and from intrinsic motivation, triggered by emotional sensations and the pleasure that comes from doing an activity, although to some extent it applies to both. Motivation to learn is a cognitive reaction related to assigning meaning to the messages that the student learns and using them in the aspect of the knowledge already possessed. The discussed motivation prompts students to use information processing and skills acquisition strategies, so it relates to the quality of students' intellectual engagement in the learning process, not to the intensity of physical effort or the amount of time devoted to completing a task.

Figure 3. Motivation factors
Source: https://www.mbaskool.com/business-concepts/human-resources-hr-terms/7312-motivation.html
(retrieved June 18, 2022).

In the school reality, it is difficult, for many reasons, to find pleasure and intrinsic motivation, which is related to autonomous goal setting, corresponding to personal interests. Attendance at school is obligatory, teaching content is imposed from outside, achievements are assessed, which is often accompanied by fear that success will not be achieved, and that one will experience public shame, because the school class is a social environment. For the above-mentioned reasons, intrinsic motivation and rapture constitute an unrealistic model of students' motivation, and at best they may concern exceptional, occasional situations, but not everyday activities at school. A more realistic solution seems to be the desire to develop and maintain students' motivation to learn as a means of achieving specific cognitive benefits.
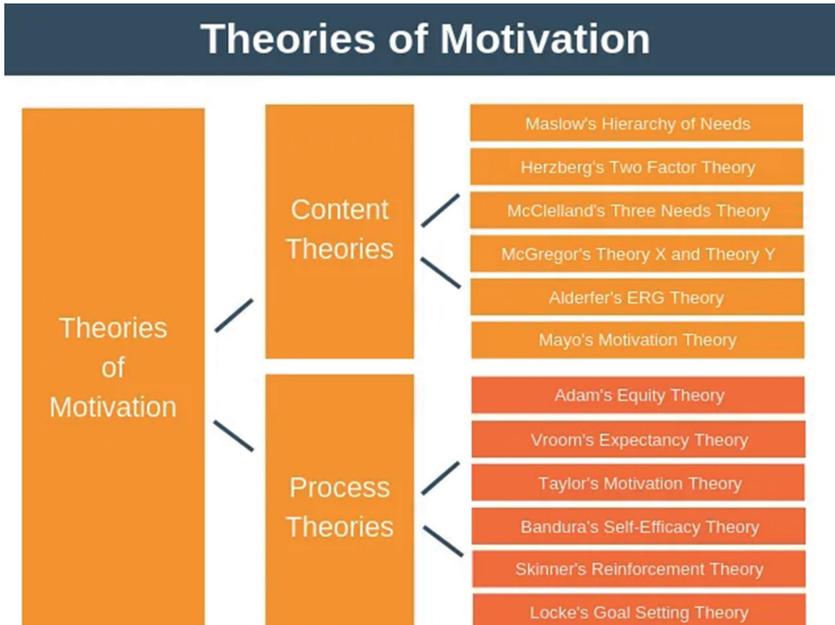
Figure 4. Theories of motivation

Source: https://expertprogrammanagement.com/2019/06/theories-of-motivation/ (retrieved June 18, 2022).

Motivation to learn can be a general disposition as well as a state related to a specific situation. However, referring the discussed motivation to the situation, people emphasize the deliberate involvement of the student in activities, we demonstrate his efforts to master certain concepts and skills.

The teacher in the process of learning

Motivation to learn develops gradually thanks to social and socialization influences. The role of the teacher in arousing it cannot be overestimated. A teacher acting as a "teacher-leader" creates a favorable atmosphere for shaping motivation in students. Its expression is the transformation of the class into a social environment, that is, into a teaching community where discourse and dialogue help master and understand the material. Such a teacher encourages cooperation, not competition, creates an atmosphere full of kindness and acceptance, gives the student a sense of security, motivates through encouragement, not punishment, prefers to show rather than talk, shares power among students, does not impose his own rules, encourages students to took over responsibility

for their behavior and achievements at school. The teacher as a "teacher-leader" considers how to help students acquire knowledge, and not what punishments to apply if they do not achieve success, tries to present the material in an interesting and clear way, present tasks that develop in children, especially critical and creative thinking, and not only those in which the essence is to remember and reproduce knowledge. At the same time, it justifies its requirements and shows that they have the best interests of the child in mind. Such a teacher knows and likes their students, has time to talk to them individually, is polite and kind towards them. They also create the opportunity for each child to succeed by setting not only team learning goals, but also individual goals tailored to their abilities, thus making each student in the class feel needed and safe, which creates a favorable attitude towards school and learning. It is worth adding that ensuring children's success is connected with giving them tasks that are in their area of their development (Witkin, 2000).

The teacher as a "leader" is a "learning-oriented" person who conducts lessons focused on what the students are to learn. He or she is a person who makes students see a task as worthwhile, who can convince students that they can cope with it if they put a moderate amount of effort into it. With this attitude, students discover new meanings, gather new insights, and come to new interpretations. The organization of lessons is conducive to helping oneself, treating mistakes as a natural component of the learning process and the achievement of didactic goals. In their case, students focus on acquiring knowledge and skills, try to reconstruct the knowledge in their minds, translating it into their own phrases and combine it with previous knowledge, and in the case of difficulties they seek help or persistently seek a solution to the task believing in their own competences. Students who are guided by didactic goals are focused on learning something new and improving their skills.

The opposite of a manager-leader teacher is a teacher who functions as a "manager-boss", who is "job-oriented", does not emphasize learning, but focuses on performing tasks at a specific time, provoking students to compete. As a result, it creates a threatening atmosphere in which the child, often alone, without the support of the teacher and peers, struggles with a task, often little understood, with the awareness of failure, low evaluation, sometimes publicly expressed. The organization of lessons is often related to show-off goals, reflecting the treatment of the task as a test of the ability to perform it, and not as an opportunity to learn something. As part of these types of goals, students focus on maintaining a good opinion of themselves and a positive image of themselves in the eyes of others: the teacher, their parents.

Didactic community

Creating a didactic community, which is necessary in motivating students to learn, requires as emphasized, a friendly environment, based on the communities of learners and communities of diverse groups. They favor the acquisition of a range of competences in the framework of: peer tutoring, collaborative learning and peer collaboration. Peer tutoring reflects relationships in which one more experienced child is the teacher and the other the student, that is, this interaction occurs when one helps the other by giving guidance and advice. The difference in the level of knowledge between children is an indicator of this type of cooperation, and the benefits are not only for the child requiring help, but also for the child who provides it. On the other hand, collaborative learning takes place when children share tasks with each other, the performance of which implies the achievement of a common goal. Children support each other, because success depends on a joint effort – harmonious, motivated by a specific goal. Peer cooperation, on the other hand, concerns symmetrical relationships in which children have little knowledge about a specific topic, and the solution to the problem is reached as a result of discussions and sharing their ideas. This type of learning is of particular importance.

The above-mentioned types of children's learning in a peer group often interpenetrate and coexist in various situations, already at preschool age. The child then stops thinking egocentrically as they contribute to the development of the ability to take into account different perspectives, different points of view and to critically evaluate their own ideas. According to J. Piaget and L. Kohlberg, encountering multiple perspectives of looking at the same problem triggers the need to integrate different perspectives (analyzing the situation in terms of emotions, intentions, motives for behavior), which implies the development of cause-effect thinking and problem-solving skills, and also divergent and convergent thinking. Divergent thinking means such intellectual creative abilities that reveal themselves to find many different solutions (fluidity and flexibility), to explore a variety of ideas. On the other hand, convergent thinking reflects a class of analytical processes that enable the evaluation and critical look at the ideas created. What is more, metaphorical teaching is about "rejecting well-worn rules and seemingly indisputable truths". Working in a group gives the opportunity to gather the knowledge of all participants on a given topic and obtain an effect (taking into account average gifted individuals) that would not be achieved in an individual activity. The essence of synectics is the search for connections (analogies) between very distant and incompatible elements

or unlimited fantasizing. Looking at many aspects of reality in a new and surprising way helps to analyze the problem from different, new points of view, considering it from many angles, which makes it easier to accept and understand someone else's perspective.
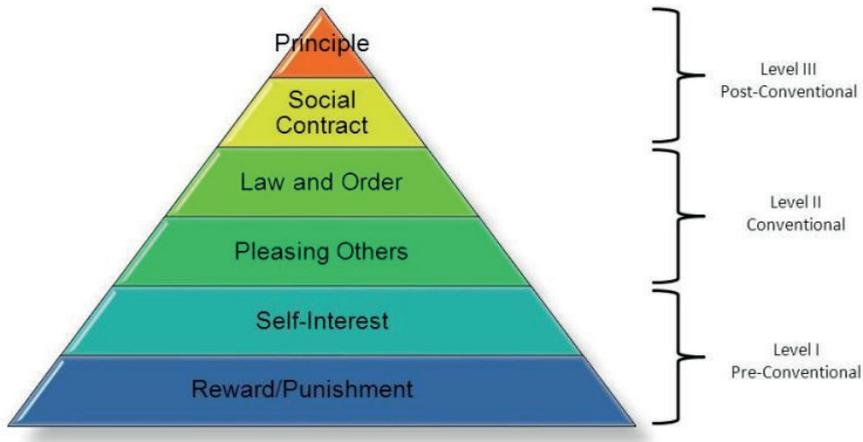
Figure 4. Kohlberg's Pyramid of Stages
Source: https://studiousguy.com/kohlberg-moral-development-theory/ (retrieved June 18, 2022).

The attractiveness of the teaching strategy is conducive to children's willingness to learn and to do it with pleasure. Therefore, it is extremely important to improve teachers' competences in this area. It should be added that developing the motivation to learn is closely related to the individualization of activities and assignments, among other things to help students struggling with learning. The teacher-leader assigns work based on the interests of students, sets realistic goals, focuses on the strengths of children, ensures regular success, uses various forms of group work to strengthen positive self-esteem, encourages them to improve their results, evaluates not the end result in comparison with other children in the class, but for the effort and commitment, builds faith in their own abilities.

Summary

Summarizing, the acquisition of new knowledge and skills is an important aspect in an interdisciplinary perspective. Therefore, shaping student's motivation to learn as a disposition and state from the earliest stage of life seems to be

a valuable value. Undoubtedly, the relationship between the student-teacher will have a significant impact on this process. Importantly, a "teacher-boss" or "teacher-leader" can bring a number of important values into the student's life. For many people, a matter-of-fact, clear approach will be more motivating, but sometimes showing passion and practical skills may also be valuable in implementing further developmental aspects – social, professional or personal.

It is also important in the education process to start from early childhood. It is important to show the child acceptance. As a result, the child will feel a sense of security, courage, acceptance, which can develop very good outcomes later in life. An important element is to create opportunities that will foster a sense of competence and effectiveness – it is important to base this on examples.

Another important issue is shaping a person's self-esteem based on internal evaluation standards, realistic orientation in the environment, accurate perception of the effects of one's own actions, taking into account the opinions of other people. Elements related to self-esteem and the situation related to the sense of self-control will positively affect the further functioning of a person in a multi-faceted understanding. Generally speaking, self-esteem is a generalized attitude towards oneself that influences mood and exerts a strong influence on a certain range of personal and social behavior.

Additionally, it is valuable to develop a sense of control, which is an individual human trait that can be viewed as a personality dimension that can be represented on a continuum from a sense of external control to a sense of internal control. An entity with a sense of external control believes that the outcome of the situation in which they find themselves depends on random factors or other people, while a person with a sense of internal control perceives this result as the result of their own actions. It is important that the child's social development and future relationships with other people develop a generalized sense of control – with predominance of internal rather than external control. People may believe that they are guided by themselves or that they are driven by factors beyond their control. First, people with an inner locus of control believe that they are in control of their lives. They are convinced that they are able to accomplish most things themselves, mainly due to their own efforts, work, personal influence. On the other hand, people with an external locus of control believe that life is controlled by factors independent of their conscious, purposeful and intended influence, e.g. fate, destiny, unconsciousness, illness and other (Cywińska, 2012).

Selected practical implications

1. Attention should be paid to the student's abilities and the real requirements should be analyzed.
2. Teachers should consider which group they will best work with – there are many options and levels – from schools to universities.
3. There should not be total emphasis on competition, as many people thus give up scientific activity due to the pressures.
4. Inadequate strategies in the long term may cause a number of negative consequences for health and life – chronic stress, cardiovascular diseases.
5. Lack of appropriate prophylaxis may lead to a lack of impulse control and the emergence of mental difficulties.
6. Lack of appropriate countermeasures may lead to burnout, which in the future may be related to apathy among employees.
7. Paying attention to the fact that the school situation, motivation, and obtaining gratifications may have further consequences in social and professional life.
8. Searching for developmental values important for the individual – hobbies, passion, interests.
9. Paying attention to the individual differences of both the teacher and the student.
10. Try different strategies of action in an interdisciplinary dimension – additional activities, school, ways of communicating with other people.

REFERENCES

Bibliography

Cywińska, M. (2012). Rozwijanie motywacji uczniów do nauki. *Studia edukacyjne*, 20, 154–164.

Ford M. (1992). *Motivating humans: Goals, emotions, and personal agency beliefs*. Sage: Newbury Park. **DOI: https://doi.org/10.4135/9781483325361**.

Stradomska, M. (2020). Komunikacja w sytuacji kryzysu suicydalnego: relacja pacjent – wolontariusz w placówce psychiatrycznej. In: K. Plutecka, A. Gagat-Matuła (eds.). *Komunikowanie się społeczne osób zagrożonych marginalizacją konteksty teoretyczne i praktyczne rozwiązania*, (pp. 245–262). Kraków: Wydawnictwo Naukowe UP.

Stradomska, M., & Barłóg, M. (2017). Samoocena i inteligencja emocjonalna jako indywidualne predykatory gotowości do tworzenia rodziny zastępczej, rodziny adopcyjnej oraz postawy względem pomocy społecznej. *Kwartalnik Naukowy Fides et ratio*, *1*(29), 279–289.

Stradomska, M., & Barłóg, M. (2020). New Technologies in Teaching – Challenges and Individual, Group or Educational Development Opportunities. In: R. Majka, M. Różalska, A. Treska-Siwoń (eds.). *Social Responsibility of Institutions In/Ex clusions*, (pp. 201–223). Kraków: Wydawnictwo Copernicus Center PRESS.

Szmigielska B. (1995). Społeczno-uczeniowa teoria osobowości Juliana B. Rottera. In: A. Gałdowa (ed.). *Współczesne koncepcje osobowości*, (pp. 9–24). Kraków: Uniwersytet Jagielloński.

Tokarz A. (1995a). Od potrzeb do projektu działania – koncepcja motywacji Josepha Nuttina. In: A. Gałdowa (ed.). *Wybrane zagadnienia z psychologii osobowości II*, (pp. 88–102). Kraków: Uniwersytet Jagielloński.

Tokarz A. (1995b). Motywacja samoistna i samoukierunkowanie – koncepcja Deciego i Ryana. In: A. Gałdowa (ed.). *Wybrane zagadnienia z psychologii osobowości II*, (pp.144–161). Kraków: Uniwersytet Jagielloński.

Witkin G. (2000). *Stres dziecięcy*. Poznań: Dom Wydawniczy Rebis.

Netography

Simplypsychology, https://www.simplypsychology.org/maslow.html (retrieved June 18, 2022).

Stevenrsouthard, https://stevenrsouthard.com/tag/abraham-maslow/ (retrieved June 18, 2022).

Motivation factors, https://www.mbaskool.com/business-concepts/human-resources-hr-terms/7312-motivation.html (retrieved June 18, 2022).

Theories of motivation, https://expertprogrammanagement.com/2019/06/theories-of-motivation/ (retrieved June 18, 2022).

Kohlberg's Pyramid of Stages, https://studiousguy.com/kohlberg-moral-development-theory/ (retrieved June 18, 2022).

Motivating Students in E-learning

ABSTRACT

Student motivation is one of the key factors determining the effectiveness of education. The nature of remote learning and indirect communication, anonymity and psychological barriers it entails, pose new challenges for academic teachers, also in terms of encouraging students to acquire and broaden knowledge during their studies. It seems that the basic tool used to motivate students is evaluation. In the article tries to answer the question whether, is this thesis reflected in reality? The aim of the article is to present the factors determining the level of motivation in e-students, on the basis of the survey results. The paper is also an attempt to present recommendations on tools, techniques, and methods that motivate students and make their educational process more attractive.

Keywords: motivating students, e-learning, motivation, effectiveness of education

Introduction

Motivation is one of the key factors determining the effectiveness of education, at various stages. The aim of the article is to present the results of research on ways of motivation declared by students, within the context of a specific situation, which is distance learning.

Literature provides interesting information on e-learning in a foreign environment. A rich source of knowledge on e-learning, including academic e-learning, is the peer-reviewed e-journal "International Review of Research in Open and Distributed Learning". Authors can publish the results of their research free of charge, preceded by an appropriate theoretical setting. The article "Enhancing motivation in online courses with mobile communication tool support: A comparative study" (Chaiprasurt & Esichiakul, 2013) compares motivation

between groups of learners being taught through an online course based on an e-learning system with and without the support of mobile communication tools. The results indicate that the use of the tools was effective in improving learner motivation, especially in terms of the attention and engagement.

The article "A Playful Approach to Fostering Motivation in a Distance Education Computer Programming Course: Behaviour Change and Student Perceptions" (Pilkington, 2018) also provides valuable information. The publication discusses the factors motivating students to participate in distance learning activities with the use of gamification. The results of using gamification in education are mixed, and its use is debatable.

Another interesting item on the ways of motivating in e-learning is the article entitled "Grit and Intention: Why Do Learners Complete MOOCs?" (Wang & Baker, 2018). The article presents the results of qualitative research on the reasons for participating in online courses by students from 162 countries.

One should also refer to Polish literature. The researchers have already explored the topic of motivating students. Among the scholars who wrote about the functions of motivation in academic didactics, there are, e.g. Maria Porzucek-Miśkiewicz and Sonia Wawrzyniak (2018), while Anita Rawa-Kochanowska (2012) published papers about the ways of motivating students in online education.

On the other hand, in the academic publishing market, there are many scientific publications devoted to e-learning in higher education, business education and distance learning, but from a rather theoretical and analytical perspective. There seems to be few practical, methodological studies. E-learning as one of the methods of higher education was researched from many different perspectives. Researchers from various fields, including psychology, sociology, and philosophy were interested in this form of educational process. When it comes to Polish literature, the publication by Stanisław Szabłowski (2011) should be mentioned. The monograph is one of the few e-learning guides for teachers of any level. The author complements the theoretical considerations with practical guidelines.

There are articles dealing with the subject of current trends related to the implementation of e-learning in higher education in Polish conditions. Urszula Ordon and Wioletta Sołtysiak (2017) write about the importance of social media in academic e-learning, while Lidia Pokrzycka (2019) describes her experiences related to this form of education. Based on her teaching practice at a university, the author describes selected e-learning platforms and techniques for working with students remotely. The practices of using e-learning platforms in higher

education in the context of their impact on the effectiveness of education were described by Krzysztof Redlarski and Igor Garnik (2014).

Motivation – theoretical approach

Source literature recognizes many meanings of the term motivation. According to one definition (Kozłowski, 2020), it is an internal process, with a specific course of action, aimed at achieving a specific goal. Motivation mainly affects the intensity of one's activities aimed at achieving the goals set. Colloquially speaking, motivation is a stimulus or a driving force for action. It includes such phenomena as readiness to act, willingness, intention, motive for action or a goal at which one aims (Kozłowski, 2020). According to the Słownik Języka Polskiego (n.d.), motive is "a stimulus for a specific action".

In the source literature, (Porzucek-Miśkiewicz & Wawrzyniak, 2018) motivation tends to be divided into external and internal one. The first type is aimed at gaining, for example, a financial prize or avoiding unpleasant consequences of not taking an action. The source of external motivation is the environment and social pressure. Such pressure can also be exerted by an academic teacher, whose role is to stimulate students to achieve a specific goal.

In turn, the source of internal motivation should be sought in the system of values of a particular person. This kind of motivation is the result of needs, dreams, interests, ambitions and passions. The purpose of taking action is not, for example, financial gratification, as in the case of external motivation, but satisfaction resulting from achieving the goal. This type of motivation mainly relates to emotional experiences and is triggered by pleasure. An important aspect of internal motivation is the desire to broaden knowledge or to learn new skills. The individual is creative, enthusiastically acquires knowledge and skills, which is conducive to being satisfied with oneself. A person derives satisfaction from the action itself, he/she does not need additional stimuli, because the final result of this action is a reward. In relation to the Maslov pyramid, this type of motivation can be located on the third level, in love and belonging needs. In order to ensure the effectiveness of education, it is necessary to combine external and internal motivation, i.e. combining the activity of an individual with his/her focus on the result (Porzucek-Miśkiewicz & Wawrzyniak, 2018).

E-learning – theoretical assumptions

In academic literature (Hyła, 2005; Szabłowski, 2009; Madej et al., 2016) it can be noticed that the meaning of e-learning seems a little fuzzy. Ways of defining this term are diverse and often cause a lot of confusion. Synonymous terms, such as distance learning, e-education, virtual education, rapid-learning appear in scientific studies. The common denominator of the discussed concepts is the reference to modern information technology. It is necessary to explain how the terminology is understood in this article. For the purposes of this paper, e-learning is defined as one of the forms of education in which electronic media are used. The electronic form of didactic classes is a course, defined as a form of education performed with IT tools. It contains multimedia forms of teaching and various e-activities of students and teachers. It may be carried out, among others, with a use of a website (Szabłowski, 2009).

E-learning – advantages and disadvantages

This trend in education has its enthusiasts as well as its fervent opponents. Lack of physical contact with the teacher may lead to a shift in the perception of knowledge. Face-to-face contact facilitates obtaining contextual information and creating rapport between the parties to the didactic process. Another strength is the sense of self-governing one's own development, which is crucial in the context of motivation. Learning new skills is another factor in favor of e-learning. The ability to select information, reflect and assess them seems essential to the information society. Another argument put forward by the supporters of e-learning is to make the didactic process more attractive through the interactivity of the material and stimulating creativity (Madej et. al., 2016). One more benefit is the removal of time and place barriers, which enables an easy access to educational materials at every time and place, according to one's own pace and needs. This is of particular importance for social groups that may be excluded from the traditional learning process due to disability or place of residence (Madej et. al., 2016).

There are some limitations to the implementation of this form of education. E-learning is associated with network dependence. It is important that teachers are aware of such constraints. Lack of access to a computer and the insufficient level of digital competences, although being of a paramount importance, are often overlooked. This applies not only to lecturers, but also to students (Madej et. al., 2016).

Motivation in students – a survey

The survey was conducted among 27 students of Journalism and Social Communication at Maria Curie-Skłodowska University in Lublin. It was carried out electronically and consisted of 5 closed-ended questions, 3 open-ended questions and a report card. The aim of the study was to identify factors motivating students to study and attend e-learning classes. The questionnaire was prepared in Polish. The statements of the students were translated into English by the author.

In the first question, the students indicated the factors that motivate them to participate in the classes. The answers are presented in Figure 1[1].
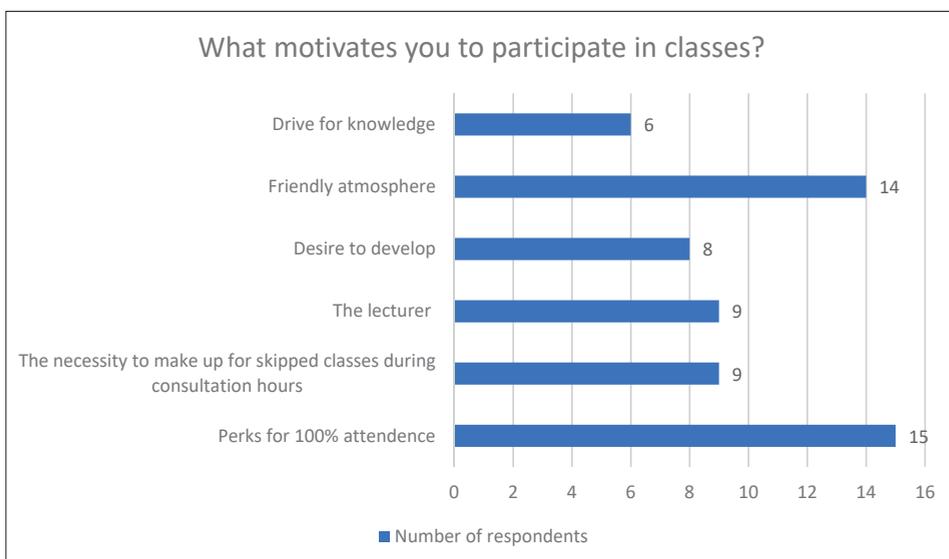
Figure 1. Answer to question no. 1
Source: Author's own elaboration.

The most commonly chosen answer seems obvious. Students have a pragmatic outlook on the issue of presence in class. Therefore, it is worth rewarding people who persistently attend all classes in the semester, often despite the need to meet professional obligations. Students also highly appreciate a friendly atmosphere during classes. A relaxed, stress-free atmosphere in which students feel free to speak up, without the fear of being judged by the lecturer and other

---

[1]   Based on questionnaires no. 1–27

course participants, promotes discussion and exchange of views, which may affect the effectiveness of teaching. Of course, it is crucial to set boundaries here – setting requirements and creating the appropriate distance. Only six people are motivated by the desire to acquire knowledge, which does not engender optimism. On the other hand, it is naive to believe that students learn only for themselves. The reward system seems to be a motivating factor for students to participate in online classes. It is worth adding that participation in an online course often requires, in addition to participation in classes, independent work with shared materials, during which students acquire knowledge on their own.

The next question investigates what contributes to students being active during classes. The answers are illustrated in Figure 2[2].
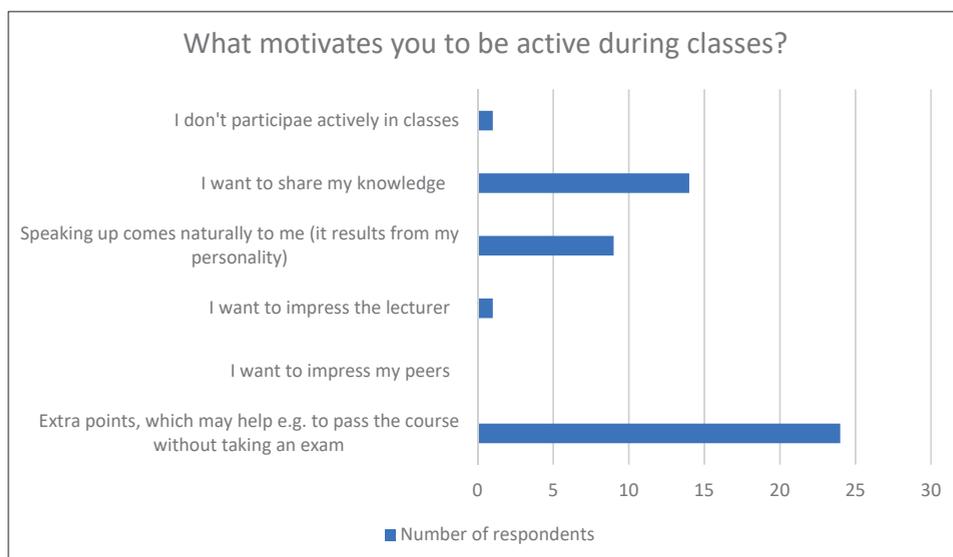
Figure 2. Answer to question no. 2
Source: Author's own elaboration.

Active participation is largely determined by the personality of a given individual. Shy people are reluctant to speak publically. However, online classes can make it easier for them to take part in a discussion. An alternative for them may be to limit themselves to chatting without having to verbalize their thoughts. The carrot and stick approach may, in a way, work in motivating students to participate. It is important to appreciate the students and their knowledge, but

---

2   Based on questionnaires no. 1–27

it may also be expressed in another form of reward, e.g. additional points that will contribute to passing the course. In this way, the students feel appreciated and distinguished, which may be a motivating factor.

In question 3, respondents were asked to tell what motivated them to study. The results are shown in Figure 3[3].

What motivates you to study?

	Number of respondents
Student card and benefits that come with it	7
Scholarship for sport, artistic and scientific achievemtns	3
Maintanance grant	1
Prestige of having an academic title	2
Health insurance	2
Higher earnings after graduating	8
Acquiring knowledge	8
Developing passions	11
Competitiveness on the labour market	5
Gaining education	17
Being a student is a valid explanation for not getting a...	5

Figure 3. Answers to question no. 3

Source: Author's own elaboration.

One of the respondents gave an open response: "I want to meet other students, have a student life, overcome my shyness and develop socially and also when it comes to passion and skills. Unfortunately, there was no opportunity to do so during online studies, but I still hope that during master's studies this will be able to motivate me, because for the time being I am motivated by the very fact of the possibility that the studies will be conducted face-to-face, at the university or in the form of hybrid teaching"[4].

Above all, it is crucial to get an education. Therefore, it is important to transfer theoretical knowledge, but only combined with practice, which will translate into competitiveness on the labour market and high earnings after graduation. Practical experience and an appropriate amount of knowledge also translates into arousing interest in the subject and developing passion, which is an important motivating factor for respondents, as the figure shows. An asyn-

---

[3]   Based on questionnaires no. 1–27
[4]   Based on questionnaires no. 4

chronous course may help to acquire knowledge, which is another motivating stimulus for the respondents – students work with the materials themselves, they can learn a given issue step by step and adapt the pace to their abilities.

The fourth question is about the ways of motivating to fulfill the duties related to studying. The results are shown in Figure 4[5].
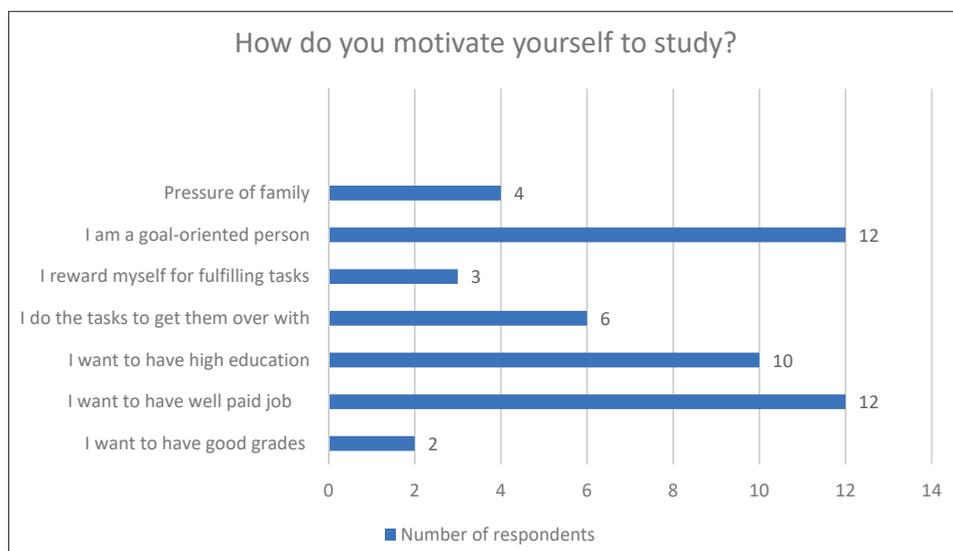
Figure 4. Answer to question no. 4

Source: Author's own elabortaion.

There were two open answers: "I just want to do my best to get as much knowledge out of the class as possible and translate it into practical skills"[6]; "I am developing my passions[7]".

Appropriate salary after graduation is an external motivator for many students. The amount of earnings depends to a large extent on the attractiveness of the job offer. Therefore, the respondents want to acquire knowledge and skills during their studies, which will translate into competitiveness on the labour market and an appropriate standard of living in the future, as well as financial independence. Setting goals, on the other hand, makes it easier for to control the responsibilities. Setting a goal helps to organize the actions taken and gives them meaning.

---

[5]   Based on questionnaires no. 1–27
[6]   Based on questionnaires no. 9
[7]   Based on questionnaires no. 14

The next question was open-ended. Students described ways of rewarding themselves for passing an exam. Almost one third of the respondents (nine people)[8] bought material objects as part of the reward. Eight students[9] confessed, that they drank alcohol to celebrate. Five people[10] declared to relax with good food. Three students[11] mentioned going to a party. Two respondents[12] admitted that they like going on a trip after the exams.

Self-rewarding makes the process of achieving the goal more pleasant, supports perseverance, but above all, helps to appreciate oneself. For some people, achieving the goal is a sufficient reward in itself, while others need to consolidate a sense of self-satisfaction and celebrate their own determination. The prize is an investment in oneself or in a material object. On the other hand, celebrating with alcohol seems to be a natural privilege of student life.

Question 6 was of a different nature than the others. Respondents were asked to indicate disincentives/demotivators for participating in online classes. The results are presented in Figure 5[13].
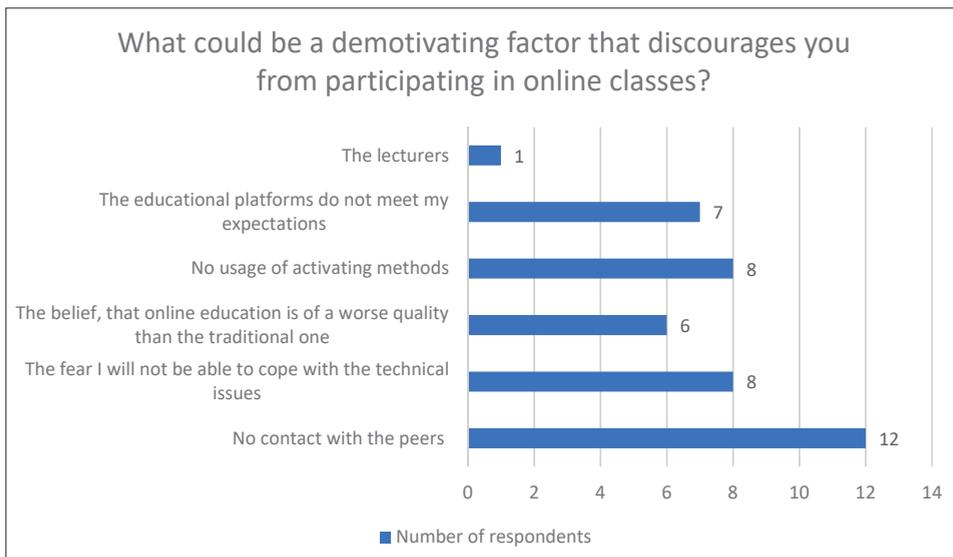

Figure 5. Answer to question no. 6

Source: Author's own elaboration.

8   Based on questionnaires no. 2–4, 8, 9, 11, 12, 13, 21
9   Based on questionnaires no. 5–6, 15, 16, 19, 20, 22, 23
10   Based on questionnaires no. 6, 7, 10, 14, 23
11   Based on questionnaires no. 7, 11, 18
12   Based on questionnaires no. 8, 17
13   Based on questionnaires no. 1–27

The respondents' open answers are also very important: "Approach of the lecturers to the students, classes for which the lecturers do not prepare or do not make any effort - so why are the student expected to do so?[14]"; "the need to have a well-functioning equipment, e.g. a laptop, a microphone"; "other students' nonchalant approach to the subject, technical problems[15]".

It seems that motivating a student to participate in online classes is more difficult than in the case of traditional classes, where an additional motivator may be a meeting their peers within the university walls. It is not surprising that the respondents primarily appreciate contact with their peers, which is frequently treated as the essence of student life. Relationships acquired at university can become a long-term bond of friendship in the future. Scientific circles, student organizations, often non-functioning during online education, constitute an environment that makes it possible to build a network of contacts and overcome numerous barriers. Lack of contact with peers may be a drawback of e-learning. In the case of online classes, it is difficult to ensure unfettered contact between the parties to the educational process. When it comes to videoconferencing tools, in order for students to contact one another independently, it is necessary to create separate sessions, so-called rooms. Among the respondents, there is a concern related to technical issues. Although it seems that the current generation is proficient in Internet navigation and in using the of technology, anyone may face difficulties. The view that distance education is of a lower quality than face-to-face education can be applied primarily to laboratory classes requiring the use of specific equipment or, in the case of journalism, to classes using media infrastructure, e.g. a camera.

In the next question, the respondents answered whether they had a favorite teacher, and then provided an open answer on the characteristics that a teacher should have in order to encourage them to participate in the classes. What matters most are such features as: engagement understood as readiness for discussion, preparation for classes, interest in the subject taught, willingness to transfer knowledge, encouraging to participate. Students value the teacher's respect for the student very highly, which they define as: facilitating partner discussion, lack of self-aggrandizement, discussing topics beyond the subject of classes. The respondents willingly participate in classes during which the instructor is kind, approachable and understanding. An important motivating factor is the establishment of clear credit conditions and compliance with

---

[14]   Based on questionnaires no. 6
[15]   Based on questionnaires no. 13

these rules. A friendly atmosphere during classes and the ability to evoke curiosity with a given subject, as well as transferring knowledge in a simple and accessible way are also motivating. An important aspect of e-learning is the use of activating methods. While within the university walls, the lecturer can discipline students, during online classes it is difficult to determine whether students are listening and focusing on the content discussed. Linear content transmission may not be sufficient. A form that attracts attention and requires the involvement of listeners is necessary[16].

The eight question examines how students perceive ideal teaching activities. The question was: Did you have your favorite classes during your studies? If so, please explain why. It turns out that the lecturer is of special importance. In the opinion of the respondents, he should be friendly, communicative, kind, encourage unhampered expression of opinion and activity[17]. Interesting topic of tasks and tasks stimulating creativity are also important[18]. The respondents also appreciate the demanding classes. The following statement should be quoted: "Favorite with the professor, who was very demanding, but led very interesting"[19]. Not surprisingly, the respondents like to be appreciated and noticed. This is reflected in the following response: "There are such classes in each year. The main reason was the leading woman who noticed my talent and knowledge that stood out from the crowd and scored it in some way, for example, she allowed me to record a radio broadcast"[20]. The pragmatic approach is reflected in the sentence "Yes, I do not remember what the subject is, but it was generally nice, relaxed atmosphere and easy to pass, practically a formality, as long as someone prepared it on time"[21]. It is also important for the respondents to combine theoretical knowledge with practical exercises[22].

Summary

Academic didactics is looking for ways to optimize the educational process. An important role in the shape of current academic education is played by the high

---

[16]   Based on questionnaires no. 1–27
[17]   Based on questionnaires no. 4–9, 11, 13–14, 16–17, 21
[18]   Based on questionnaires no. 2, 15, 18–19, 22–24
[19]   Based on questionnaires no. 3
[20]   Based on questionnaires no. 12
[21]   Based on questionnaires no. 6
[22]   Based on questionnaires no. 11

motivation of students, which is more difficult to achieve in the conditions of e-learning than in traditional education. The most important obstacle is the lack of contact with peers. A good solution may be to assign group projects that will force at least indirect contact between students. When it comes to motivating students, a reward system may work, which can be implemented both in face-to-face education within the university walls and in remote education. Students like to be appreciated. Another important person is the lecturer, who should involve students in classes and not only transmit the content linearly. E-learning is a strong trend in higher education. This does not seem to be the result of a temporary fashion, but a real trend that will only be strengthened over time. This is facilitated by the progressive development of new technologies that give a new dimension to academic education, so it is worth to teach the content not only through a presentation, but also, for example, educational games. This will create a friendly atmosphere during classes, which will significantly improve students' motivation to participate in online classes.

REFERENCES

Chaiprasurt, C., & Esichaikul, V. (2013). Enhancing motivation in online courses with mobile communication tool support: A comparative study. *The International Review of Research in Open and Distributed Learning*, *14*(3), 377–401, **DOI: https://doi.org/10.19173/irrodl. v14i3.1416**.

Górska, D. (2016). E-learning in Higher Education. The Person and the Challenges, *2*, 35–43, **DOI: http://dx.doi.org/10.15633/pch.1868**.

Hyła, M. (2005). *Przewodnik po e-learningu*. Kraków: Oficyna Ekonomiczna. Oddział Polskich Wydawnictw Profesjonalnych.

Kozłowski, W. (2020). *Motywowanie pracowników w organizacji*. Warszawa: CeDeWu.

Madej, M., Faron A., & Maciejewski, W. (2016). *E-learning w dydaktyce szkoły wyższej – założenia, doświadczenia, rekomendacje*. Wrocław: Wyższa Szkoła Handlowa.

Ordon, U., & Sołtysiak W. (2017). Media społecznościowe w e-learningu akademickim. *Edukacja – Technika – Informatyka*, *1*, 216–221, **DOI: https://doi.org/10.15584/eti.2017.1.29**.

Pilkington, C. (2018). A Playful Approach to Fostering Motivation in a Distance Education Computer Programming Course: Behaviour Change and Student Perceptions. *The International Review of Research in Open and Distributed Learning*, *19*(3), 282-298, **DOI: https://doi. org/10.19173/irrodl.v19i3.3664**.

Pokrzycka, L. (2019). Efektywność e-nauczania w szkolnictwie wyższym. Studia przypadków. *Zarządzanie mediami*, *1*, 15–27, **DOI: https://doi.org/10.4467/23540214 ZM.18.019.10571**.

Porzucek-Miśkiewicz, M., & Wawrzyniak, S. (2018). O funkcjach motywacji w dydaktyce akademickiej. *Pedagogika Szkoły Wyższej*, *2*, 117–130, **DOI: https://doi.org/10.18276/psw.2018.2-11**.

Rawa-Kochanowska, A. (2012). Motywowanie w e-nauczaniu – z doświadczeń praktyka. *E-mentor*, *4*, 40–44.

Redlarski, K., & Garnik, I. (2014). Zastosowanie systemów e-learningu w szkolnictwie wyższym. In: B.A. Basińska, I. Garnik (eds.). *Zarządzanie informacyjnym środowiskiem* pracy, (pp. 77-94). Gdańsk: Wydział Zarządzania i Ekonomii Politechniki Gdańskiej.

Szabłowski, S. (2009). *E-learning dla nauczycieli*. Rzeszów: Fosze.

Słownik Języka Polskiego, *Motywacja*. (retrieved May 29, 2022, from: https://sjp.pl/motywacja)

Wang, Y., & Baker, R. (2018). Grit and Intention: Why Do Learners Complete MOOCs?. *The International Review of Research in Open and Distributed Learning*, *19*(3), 20–42, **DOI: https://doi.org/10.19173/irrodl.v19i3.3393**.

The Educational Potential
of Virtual Reality in Polish Schools

ABSTRACT

The aim of this paper is to review and analyze educational applications in virtual reality, to investigate the issue of availability of VR headsets in Polish schools and to study the opinions of teachers and specialists working in educational institutions in Poland on the potential of learning with virtual reality. The first part provides a brief history and definition of virtual reality and the most common typology of VR in relevant literature due to the immersion level. Then, the way in which VR technology can positively influence the learning process was described, referring to the literature and already available research results on this issue. Learning with VR was set in a broader socio-cultural context by referring to Generation Z and Alpha, i.e. people who have been navigating the world of modern technology almost since birth. It was shown that learning with traditional, instructional methods is less effective than learning through experience, which VR allows. The next part of the paper presents a review of games and educational applications by individual subjects/school areas and the results of the research consisted of a quantitative study, using a survey technique.

Keywords: virtual reality, VR in education, immersion, educational games and applications, generation Z and Alpha, learning with VR

Introduction

Modern technologies are a part of everyday life for almost everyone in many areas of their lives – in learning, work or entertainment and leisure. However, this paper focuses on the area of education and the use of modern technology such as virtual reality in teaching. The pandemic and thus the re-

mote education contributed to the spread of digital tools in Polish education. The results of Digital Center's 2020 report showed the openness and readiness of teachers to use remote education tools even after the end of the pandemic, which was declared by up to 87% of the respondents (Buchner & Wierzbicka, 2020). However, on the other hand, the results uncovered weaknesses in the Polish education system and indicated areas for further improvement, such as insufficient digital competence of teachers. The period of pandemic and remote education proved that the methods of administration proved ineffective, and it was necessary to turn to activities that would activate students more. Although virtual reality is still primarily associated with the entertainment industry, this paper will show that VR can also be an effective tool to achieve educational goals. The aim is to review and analyze virtual reality educational applications by subject/school area, to investigate the issue of availability of VR headsets in Polish schools and to study the opinions of teachers and specialists working in educational institutions in Poland on the potential of learning with virtual reality. The research group consists of teachers and specialists (of different ages and seniority) who have VR in their institutions and those who do not have it yet.

Virtual reality in education

Virtual reality (VR) is defined as simulations of a real or imaginary environment, where a participant can both perceive and interact with the environment (Craig, 2013). Obtaining such an effect, i.e. complete disconnection from the environment and relocation to the virtual world, is possible with the help of special headsets and controllers (needed to move and interact with 3D objects). The innovative technology of virtual reality develops very dynamically, and therefore there are many models of VR headsets available on the market (both in Poland and worldwide). The most common typology of VR made in the literature focuses on the immersion level (Choudhary & Raj, 2022, pp. 1–2), i.e. "fully immersive", "non-immersive", "web-based", "augmented reality" and "collaborative". The first type of VR ("fully immersive") is based on a high immersion level, which is the ability to interact with 3D objects in a computer-generated world that we recognize as real and present (Brzezińska, 2020). The second type ("non-immersive") is also called 360°VR (Kittel et al., 2020) or "immersive video" (Panchuk et al., 2018), which uses real-world footage filmed from a 360° camera. The participants watching real world video, cannot interact with the environment, but the projected images are much more

real than the computer-generated ones. Consequently, 360°VR has been labeled as a "middle ground" between VR and existing screen-based video technologies (Kittel et al., 2020). Results from the Interactive Technologies Lab at the Information Processing Center[1] (Bohdanowicz et al, 2021) show that younger participants (7–12 years old) rated better those applications that featured high interactivity, thus it can be inferred that immersive devices will be of greater interest to students. Morton Heilig (1926–1997) is called the father or fore-runner of virtual reality for his creation in 1962 of the prototype of today's VR, the Sensorama (Conte, 2017). At the very beginning of the development of this technology, he proposes, in addition to entertainment, its use in the educational process for children (Stasieńko & Dytman-Stasieńko, 2020) Currently, VR finds its application, among others, in medicine (Coulter et al., 2007), in rehabilitation (Boone et al., 2019), in psychological or psychotherapeutic therapy, such as treatment of claustrophobia or pain therapy (Pourmand et al., 2018) and for the training of learners with special learning needs (Li et al., 2019). The advantages of using VR for people with learning difficulties are worth mentioning: VR creates a safe space in which participants can make as many mistakes as they want without suffering physical consequences; this space can be created and modified according to pedagogical needs for the learner and adjusted to their abilities; educational content is provided through different channels, engaging multiple senses, which increases learner engagement (Cromby et al., 1996). VR technology is beginning to appear at a higher level of education in Poland – students have the opportunity to learn with VR at the Wrocław School of Banking for logistics classes and at the Leon Kozminski Academy for forensic science classes (Mikołajczyk, 2019).

Learning and teaching Generation Z and Alpha

Learning in the traditional sense is based primarily on the reproductive acquisition of knowledge, where the teacher's role is to convey it (Babich, 2019). On the other hand, VR allows for creative and imaginative creation, because the VR user not only sees the discussed issues or phenomena, but also becomes an active participant (e.g. is in the spaceship together with Neil Armstrong). He or she learns by experiencing and interacting with objects, e.g. by conducting chemical experiments, in completely safe conditions. Brzezińska (2020,

---

[1]   Laboratorium Interaktywnych Technologii w Ośrodku Przetwarzania Informacji.

p. 7) writes about "the end of the age of media and the beginning of the age of reality" which means that teaching methods involving the transmission of content through various media will be replaced by participation. It seems that the challenge for modern education is to create a culture of participation, i.e. students engaged in the learning process.

VR makes it possible to be in places and at times (e.g., the depths of the ocean) where the users would not be able to be (participate) in the real world. This, in turn, affects emotional reaction and, consequently, better memorization. As research results show, memorizing content using VR is more effective than using screen-based technologies such as a computer or tablet (Krokos et al., 2018; Dragani 2019). On the other hand, other studies show that in a lesson using VR, students were more interested in the topic discussed and participated with more engagement than in a lesson taught using traditional, presentational teaching methods (Aubrey et al., 2018, p. 18). Therefore, it is worth asking whether the school as a place of teaching (and learning) for the current generations, namely Z and Alpha, is using the most effective and appropriate educational tools possible. Generation Z is the term for those born after 1995 (Fister Gale, 2015), (the cut-off date is still up for debate) and Generation Alpha includes those born after 2010 (McCrindle, 2010). For the purpose of this paper, it is worth noting especially that these are individuals who have been surrounded by modern technologies since birth (or almost). Thus, in order to increase the effectiveness of teaching when working with these persons, it is necessary to keep in mind the role that modern technologies play in their lives and the way they learn. As the author of the publication points out, it may be a good idea to converge learning objectives, i.e. to use students' digital competencies while pursuing other educational goals. Following the words of Albert Einstein "I never teach my pupils, I only attempt to provide the conditions in which they can learn" – it is the teacher's job to create the best possible conditions for learning (Stunża, 2017, pp. 91–92).

According to Brzezińska (2020, p. 8), "the era of media is coming to an end and the era of reality is beginning", which means that teaching methods involving the transmission of content through various media will be replaced by participation unlimited by time or space. Although VR will not solve all the problems of modern education, as has been shown, well and skillfully used, it can be a modern educational tool, adapted to the ways of acquiring knowledge and skills of generations Z and Alpha, which will help students actively participate in the learning process.

Review of virtual reality games and educational applications

The following is a review and analysis of games and educational applications in virtual reality with a view to individual subjects/school areas – foreign languages, humanities, science and natural sciences, as well as physical education, interest groups and therapeutic classes. In order to narrow down the research scope, the conditions of their selection were defined as follows:

1. Application is in the "educational" category.
2. Application is suitable for the school age of students, i.e. it falls under PEGI 3 or 7. Pan European Game Information is a European video game content rating system.
3. Application is available for the Meta Oculus Quest 2 device[2], which is currently the most popular model of VR headsets. As reported in the latest Steam Hardware and Software Survey data, this model of VR headsets currently accounts for nearly half of all the VR headsets being used on the Steam platform (47.97%)[3].
4. These are not photos or videos taken with a 360° camera, but a fully immersive and interactive application.

The research process consisted of reviewing the Oculus and SideQuest platforms and searching for games and apps in the "virtual education" and "educational" categories. The number of applications is very large (despite the specified 4 selection conditions) and therefore the presented review (Table 1) is still subjective in nature. Links to the source pages of the applications are provided in the bibliographic footnotes at the end of the paper.

When analyzing the games and apps presented in the table by subject or school area, it is important to highlight several aspects that seem to be relevant from a pedagogical perspective. The first significant point concerns their very high number, which means that an increasing number of people are developing them, but also that an increasing number of users are using them. This, in turn, raises the concern that not all games are properly created in terms of content, but also programming, and the worse the quality of content (e.g. stuttering), the greater the possibility of motion sickness symptoms (Brzezińska, 2020).

---

[2] It was originally a headset model from Facebook, but with the name change to Meta, the headsets were also renamed and are now only produced under the Meta name. In the text, I will be using "Meta Oculus Quest 2" which is still in the public space. Read more: https://store.facebook.com/pl/quest/products/quest-2.

[3] Read more: https://store.steampowered.com/hwsurvey/Steam-Hardware-Software-Survey-Welcome-to-Steam (retrieved May 22, 2022).

Table 1. Educational applications review

Languages		
Application	Japanese in a nutshell	Lost Recipes	Mondly
Description	"Get a glimpse of Japanese through this unique learning experience. Explore the challenges and activities crafted for you to engage in each topic."	"You will cook for ghosts from Greek, Chinese, and Maya civilizations who long to pass on the traditional recipes of their favorite dishes."	"You'll get instant feedback on your pronunciation, suggestions that enrich your vocabulary, and surprises that transform language practice with Mondly VR into a one-of-a-kind experience."
Genres	Educational	Educational, Food, Simulation	Educational, Productivity, Casual
Price	USD 3.00	USD 14.99	USD 9.99
Humanities		
Application	Surrealist Persistence of Memory VR	Anne Frank House	Virtual Gallery of Art
Description	"Immersive Painting in a Surrealist World inspired by Dali."	"Travel back to the years of the Second World War. Immerse yourself in Anne's thoughts on the power of VR."	"The VR Gallery includes 140 pieces by Zygmunt Niewiadomski, reconstructed by photogrammetry. Audio and text in Polish."
Genres	Educational, Exploration	Documentary & History, Educational, Movie	Educational
Price	USD 3.00	free	free
Science subjects		
Application	Mission: ISS: Quest	Math World VR	Faraday's Magnets
Description	"Take a trip into orbit and experience life on board the International Space Station!"	"It's an educational math game that is jam packed with fun mini-games with challenging math problems for the whole family to enjoy!"	"Transport yourself back in time to 1855 into the lecture hall of Michael Faraday, the experimental physicist who made vital discoveries."
Genres	Educational, Exploration Space/Universe	Educational, Arcade	Documentary & History, Educational, Simulation
Price	free	USD 9.99	USD 9.99

Natural sciences		
Application	3D Organon VR Anatomy	Ocean Rift	Star Chart
Description	"You can now visualize the skeletal system, muscles, vessels, nerves, and other organs in 3D. The app features an extensive knowledgebase of anatomical definitions."	"Explore a vivid underwater world full of life including dolphins, sharks, turtles, sea snakes, rays, whales, manatees, sea lions and even prehistoric animals!"	"Explore our Solar System, view constellations and meteor showers in your night sky, stand in the footsteps of Neil Armstrong & Buzz Aldrin on the Moon, explore Mars with the Curiosity Rover!"
Genres	Educational, Medicine	Educational, Exploration Travel	Documentary & History, Educational, Simulation
Price	demo for free	USD 9.99	USD 9.99
Physical education		
Application	ZenVR	The Climb	All-In-One Sports VR
Description	"With an instructor-led classroom experience, ZenVR will teach you real meditation beyond relaxation."	"Experience the adrenaline rush as you ascend to epic heights, explore caves. Race against your friends' routes to compete."	"A variety of sports titles experiences - Baseball, Archery, Ping Pong, Basketball, Bowling, Badminton, Golf, Dart, Billiard, Boxing, Tennis."
Genres	Educational, Relaxation, Meditation	Exploration, Sports, Arcade	Casual, Sports, Simulation
Price	USD 19.99 USD	USD 29.99	USD 19.99
Interest clubs		
Application	VRtuos	Speed Cube	Chess Club
Description	"Just calibrate your real piano and press play! It's really easy to learn how to play any song pretty fast."	"Learn how to solve a cube, practice your skills, and compete with others to become the fastest cuber!"	"Select a stunning environment and challenge your friends, our AI, or one of the millions of Chess fans around the world."
Genres	Educational, Music, Art/Creativity	Educational, Puzzle, Casual	Strategy
Price	free	USD 4.99	USD 14.99

Therapy (for example pedagogical)			
Application	Virtual Speech	Enhance	Cubism
Description	"It's a VR soft skills training app that's offered alongside online courses to accelerate learning of key communication skills like public speaking, job interviews, and leadership."	"Intense games designed by neuroscientists to test and train your cognitive skills, including: memory, attention, flexibility, problem solving, motor control, spatial orientation, information processing."	"Immerse yourself in a zen environment as you reason your way through 90 puzzles which will put your spatial thinking skills to the test."
Genres	Educational, Productivity,	Educational, Productivity, Casual	Educational, Puzzle, Relaxation, Meditation
Price	demo for free	free	USD 9.99

Source: Author's own elaboration.

On the other hand, the approach of some developers, who emphasize that a given application was created in collaboration with specialists in a given field (e.g. Enhance), is encouraging. Many of the games mentioned already in their descriptions indicate that they are immersive – Virtual Gallery of Art (Figure 1) or Anne Frank House. Instead of reading about the history of Anne Frank from a textbook or tablet, we move to the time of the Second World War and together we learn about her history and participate in it. The creators focus primarily on experiencing and performing specific actions, simulating them in safe conditions.

A wide range of games and applications is also faced by specialists – special educators, psychologists or pedagogical therapists. Students with special educational needs can practice: social skills such as communication during a public speech in the application Virtual Speech (e.g. people with autism spectrum disorder), cognitive functions such as memory or attention in the application Enhance (e.g. people with intellectual disabilities) or visual perception and spatial imagination in the application Cubism (Figure 2) (e.g. pedagogical therapy). It is obvious that the possibilities of using these exemplary games are wide. Ultimately, the type of application used depends on the needs and abilities of the student and therapeutic goals set. This in turn requires the teacher to have at least a basic understanding of the games and applications available in a given category. Another issue is that even the most difficult topic, e.g. physical phenomena such as Michael Faraday's concept of electromagnetism, thanks to VR become interesting and accessible to understand, as well as engaging to play and make positive associations with this often difficult topic.

Figure 1. Virtual Gallery of Art
Source: https://sidequestvr.com/app/667/virtual-gallery-of-art (retrieved May 26, 2022).
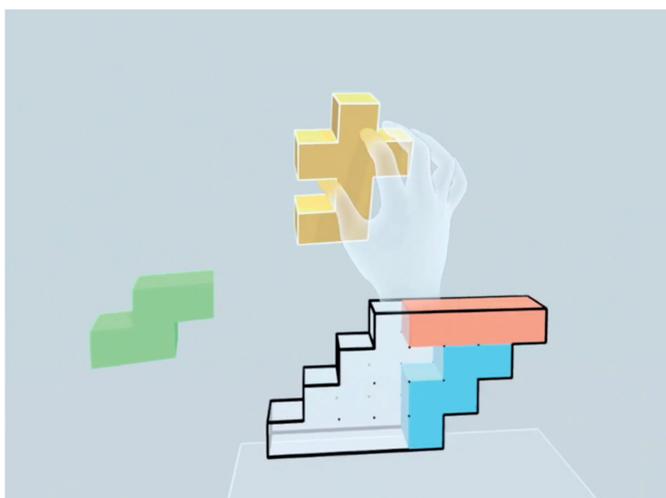
Figure 2. Solving 3D puzzles in the Cubism application
Source: Author's own elaboration.

The VR participant learning a foreign language does not read the definitions of individual words but interacts with objects or other people practicing their skills, receiving quick feedback on the correctness of performed tasks (Mondly,

Figure 3) or learns human anatomy on a detailed skeleton in the 3D Organon VR Anatomy application (Figure 4).

Figure 3. Mondly
Source: https://store.steampowered.com/app/1141930/Mondly_Learn_Languages_in_VR/?l=polish (retrieved May 26, 2022).

Figure 4. Human nervous system in the 3D Organon VR Anatomy application
Source: Author's own elaboration.

Hence, developers imply terms such as "learning experience" or "explore" in game descriptions to emphasize experiential learning opportunities. Another issue is that the applications are very often gamified to keep the player engaged, striving for the best results while competing with others and having fun (e.g. Speed Cube – Figure 5, The Climb). The language of games availability is also an important issue, as the vast majority of games are developed in English, this may be a barrier for some people, especially when it comes to working on linguistic material – for example in pedagogical therapy for Polish students. Two apps that are not in the "educational" category (The Climb and All-In-One Sports VR) were intentionally included in the "Physical education" category but would certainly work well to meet the goals of this subject, as they are in the "sports" category. This means that a teacher who is independently looking for apps for their students should be familiar with the specifics of their categorization. Last but not least, it refers to the prices of apps, as most of the presented games are paid, which can be a problem for the education system.

It is worth mentioning that the study did not include the social aspect of virtual reality, which theoretically does not fit as such within the "school subjects". On the other hand, it plays an important role in the development of VR technology and, at the same time, in the development of social-emotional aspects of Z and Alpha generation students. Social platforms (AltspaceVR, Bigscreen, VR Chat) provide real-time participation in events such as concerts, exhibitions, conferences or support groups. This means that they have a huge educational potential. An important role here is played by the created avatar character, which is to represent us in virtual space. Interesting research results are presented by Rosenberg et al. (2013) – respondents who performed tasks in a virtual city by flying (like Superman) instead of using a helicopter, showed a higher propensity for altruistic behavior in the real world. Author Figure 6 shows a meeting of a group of people with an educational and therapeutic nature in virtual reality in the Altspace VR app. The meeting focused on the topic of neurodiversity, meaning people with ADHD, autism spectrum disorders, or dyslexia, among others. The participants were avatars from all over the world, united by a "virtual conference room," common interests and the desire to share knowledge and experience with others. Despite the different nationalities of the participants, the common language turned out to be English.
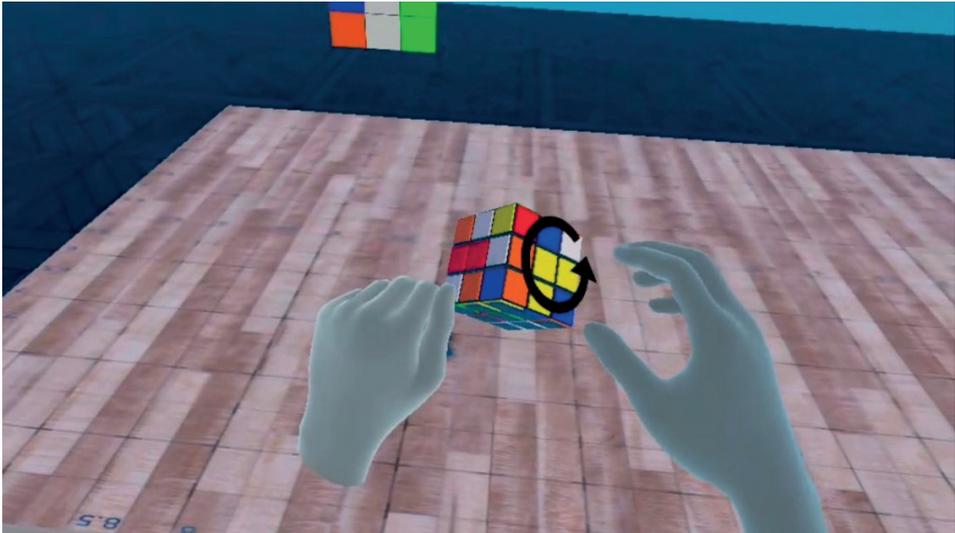
Figure 5. Speed Cube

Source: https://sidequestvr.com/app/1249/speed-cube (retrieved May 26, 2022).
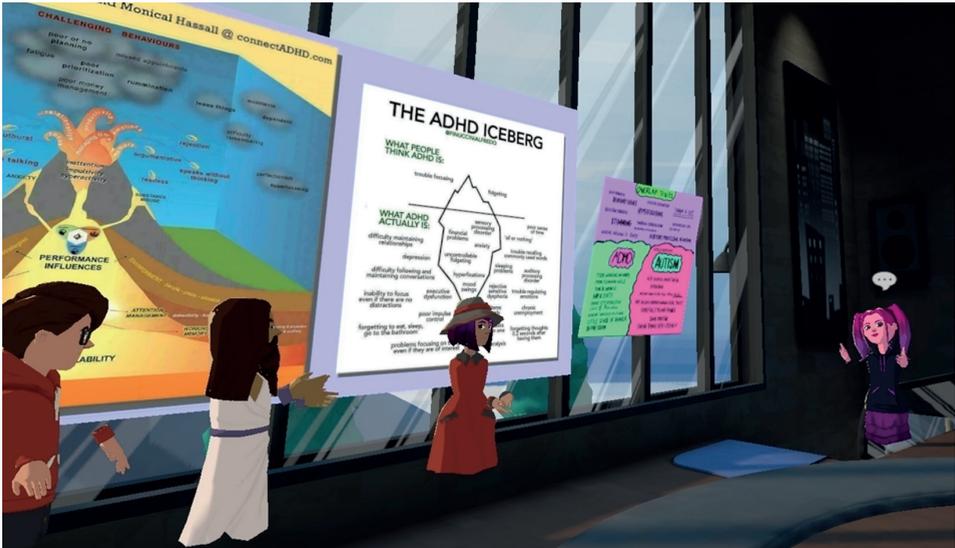
Figure 6. Meeting of a group of people interested in the subject of neurodiversity in the Altspace-VR application

Source: Author's own elaboration.

Methodology

The second stage of the research process, i.e. after reviewing the games and applications on VR, was to conduct quantitative research. A survey technique was used with a survey questionnaire as the research tool, consisting of closed questions with closed or closed-ended questions and one open-ended question (Sztumski, 2005). The research tool was constructed independently based on the literature analysis and the identified research questions. The study was conducted in Polish language and then translated. The research was conducted online, through social networking sites such as Facebook and Instagram, using various groups for teachers. This provided an opportunity to reach respondents from all over Poland. The respondents' anonymity was maintained at every research stage (Sztumski, 2005). Selection of the research sample was purposeful (Sztumski, 2005), and the criterion for selection was based on employment in an educational institution as a teacher or specialist in Poland. The questionnaire was filled out by 129 teachers, including 107 females and 22 males. The age of most respondents was within two ranges: 26–35 years (33.3%) and 36–45 years (38%), individuals under 25 years of age were only 1.6% of the respondents. The most numerous group of respondents (45.7%) are those whose work experience as teachers is between 6–15 years, while the least numerous group of respondents is those who have been working for less than 5 years (13.2%).

The aim of surveys conducted was to find out the opinions of teachers and specialists on the use of virtual reality in teaching. The research focused on three main issues:

1. Availability of VR headsets in educational institutions in Poland.
2. Assessment of the possibility of using virtual reality technology in the classes of various school subjects.
3. Assessment of the VR potential as an educational tool.

Analysis of research results

The analysis of quantitative data (Sztumski, 2005) will be carried out in relation to the indicated 3 areas of research. The first area concerns the availability of VR headsets in educational institutions in Poland. The respondents' answers (Figure 7) show that currently there are no VR headsets available in the vast majority of educational institutions in Poland (70.5%).

It is worth mentioning that the review of games and educational applications for VR conducted in the first part of this paper (Table 1) assumed that they are available for the most popular headsets – Meta Oculus Quest 2. Interestingly, in Poland, among the schools that declared to have VR, also the most popular model turned out to be the Meta Oculus Quest 2 (55.9%), followed by ClassVR (26.5%). Teachers who do not have VR headsets at their school were asked if they would like to own one and interestingly enough 68.7% said yes, which is a high result.
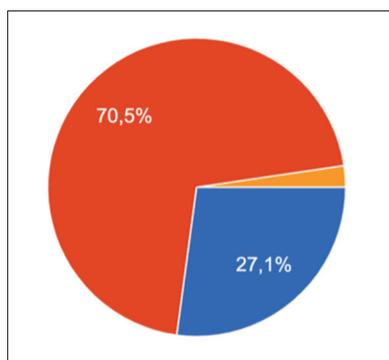
Figure 7. Availability of VR headsets in Polish schools

Source: Author's own elaboration.

The second research area relates to the possibility of using VR headsets in classes for each school subject. As shown in the previous analysis (Table 1), the educational content is available for all the studied school subjects/ areas. However, according to the respondents (Figure 7), VR as a teaching tool can be most effective for interest clubs and for natural sciences. The most controversial subject is physical education, because there was a large group of people claiming that VR was not an adequate tool for teaching this subject. In general, the attitude of the surveyed teachers to the use of VR for learning the mentioned school subjects is positive. This means that teachers know (or believe) that VR could mean a new and better quality of teaching. According to the research 72.9% of the teachers would recommend their students to learn using VR assuming that it is more effective than traditional methods.

The last area surveyed concerns the assessment of VR's potential as an educational tool. Respondents answered the open-ended question "Do you think that VR is the future of education? Why?" Using the categorization method
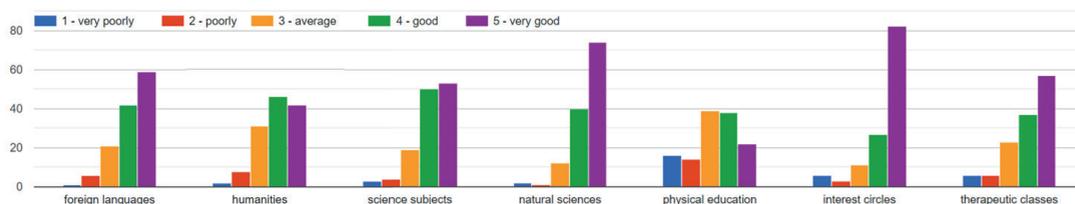
Figure 8. Teachers' opinion on the potential of using VR in school subjects

Source: Author's own elaboration.

(Sztumski, 2005), the responses were classified into five groups due to the problem issues that emerged from the responses.

(1) Amount, availability and quality of hardware and apps.

"Very cool way to learn therapy, but expensive and not very accessible." "Have a better chance if education has access to good apps (quality, near-real-life images, pixels, ability to experience, not just watch)." "No. High price. Lack of training."

(2) Preference for traditional teaching methods and digital competency gaps.

"Teachers prefer traditional methods and don't waste time on the attraction of classes related to VR." "The educational system is ossified and teachers are not motivated enough to use VR in their lessons." "No, because nothing can replace learning through books." "First we have to change the whole education system unfortunately." "VR gives a lot of possibilities and can indeed speed up the process of acquiring knowledge and certain skills, but it certainly cannot replace traditional classroom learning." "I prefer traditions, but I know that the introduction of VR is just a matter of time!!!" "Although I feel quite knowledge-able and competent in the use of 'modern' technologies, in this case – it seems to me that the use of this one is complicated and tiring."

(3) New quality in teaching.

"Yes, it allows you to see and touch what you can't show kids in regular lessons." "Immersion definitely enables a better educational and therapeutic process." "Yes, because it increases the chances for young people to engage in learning." "It's primarily a move away from paper and flat images, being able to see objects, characters, animals, their insides in 3D. Developing logical thinking without the expense of paper teaching aids. An empty classroom, VR headsets and the learning begins!" "Yes, because it is a tool with which we can support the learning process in an interesting and attractive way at every stage of education." "Of course it is the future of education, it is a very interesting solution and attractive to the audience."

(4) VR as a technological gadget.

"No, VR is a gadget." "I see it more as a form of 'curio' – to be used once in a while in class." "It can be an interesting addition, a tool that will enrich the classes and allow us to convey new content in an unusual way." "VR elements in education in the future, yes, but as an enrichment of the form of learning, not a replacement."

(5) Keeping up with modern technology.

"We're in the 21st century so the tools for the job should also be up to date with our times." "Everything is moving towards VR becoming more and more popular." "Education should be adapted to the changing reality, so VR can be the future of education." "Nowadays students are interacting with new technologies from birth, so they have different needs and need different stimuli than the teachers teaching them as they were at their age." "There are rapid advances in digital technology, students like it and expect it."

The presented five different categories and sample statements of the respondents show that teachers' attitudes vary significantly. They can be described as positive, neutral and negative. On one hand, the teachers indicate numerous deficiencies (in financial resources of schools, in their own digital competences), but on the other hand they declare readiness to introduce changes and openness to new (better) solutions in teaching.

Conclusions and future work

The paper focused on the use of VR in particular school subjects in the opinion of teachers, as well as on the availability of VR headsets in Polish schools, an assessment of the potential of VR as an educational tool and a review of games and educational applications. The results of this study showed that teachers perceive great potential in the use of this technology in individual school subjects (especially in classes such as interest clubs and for natural sciences), despite the fact that only 27.1% of the surveyed teachers declared that there is VR in their schools. Perhaps this means that teachers have a basic knowledge of this technology and are aware of what benefits using it can bring to teaching and/or are open and ready for modern teaching methods. This is confirmed by the fact that although the majority of the surveyed teachers (55%) have not yet used VR technology, at the same time the vast majority (72.9%) would recommend learning through VR to their students knowing that it would be more effective than traditional teaching methods.

The respondents also recognized problem areas in the context of using VR in Polish schools – they pointed out "the division of teachers focused on development and self-improvement and those who have been conveying knowledge to students from the same notes for years" (Buchner & Wierzbicka, 2020, p. 40), the digital exclusion of schools (e.g., low-quality Internet connection), high cost of equipment, and the need to independently search for educational

content adapted to the age and abilities of students from among the many available applications, often paid and of uncertain quality (Mikołajczyk, 2019). The conducted review of games and apps showed that there is indeed a great deal of educational content, while some of it is paid, unavailable in the language or of uncertain quality. The teacher should know what aspects to pay attention to when choosing an app, e.g. PEGI, taking care to preserve the safety of students and not to expose them to inappropriate content for their age. It is worth mentioning that despite the division into subjects/lesson areas made, the proposed VR applications still leave many creative options in their use for educational purposes. Interestingly, the weaknesses of the Polish education system in the context of VR, as noted by the teachers, are very similar to those that were mentioned in the report "Remote Education in Time of Pandemic" (Buchner & Wierzbicka, 2020) regarding remote education. The authors of the report noted that in the era of remote education, teacher self-help was significant, e.g., community groups on Facebook (often at the expense of their own free time). In the context of VR in education also appeared such self-help groups, which include people who want to gain or deepen knowledge about the use of VR in education, receive content support, information on training, as well as share their own experience and inspire each other (e.g., the Facebook group "AR and VR in education").

As rightly noted by the respondents, teaching methods should be selected adequately to the needs of current students, i.e. the Z and Alpha generations. VR as an educational tool increases the involvement of students in the course and interest in the topic as well as allows for active participation in the educational process, rather than just reproductive assimilation of knowledge. Interesting research results on this issue are presented by Peng et al. (2020) indicating that older people, strongly associated with the traditional concept of teaching, are less willing to introduce technological innovations.

The presented research results and conclusions can be the basis for further research exploration in this topic. Another in-depth research could be conducted among students, i.e. individuals from Z and Alpha generations, who use this technology in school activities and their evaluation on the use of VR in education.

REFERENCES

Bibliography

Aubrey, J.S., Robb, M.B., Bailey J., & Bailenson, J.N. (2018). *Virtual Reality 101: What You Need to Know About Kids and VR*. San Francisco, CA: Common Sense.

Babich, N. (2019, September 19). *How VR In Education Will Change How We Learn And Teach?*. Adobe. https://xd.adobe.com/ideas/principles/emerging-technology/virtual-reality-will--change-learn-teach/.

Brzezińska, A. (2020). *Od mediów do rzeczywistości*. Warszawa: Fundacja Centrum Cyfrowe.

Bohdanowicz, Z., Kowalski, J., & Kobyliński, P. (2021). *Laboratorium Interaktywnych Technologii w Ośrodku Przetwarzania Informacji.* Retrieved May 22, 2022, from: https://opi.org.pl/ruszyla-akademia-opi-pib.

Buchner, A., & Wierzbicka, M. (2020). Edukacja zdalna w czasie pandemii. Edycja. II. Warszawa: Centrum Cyfrowe

Boone, A.E., Wolf, J.T., & Engsberg R.J. (2019). Combining Virtual Reality Motor Rehabilitation With Cognitive Strategy Use in Chronic Stroke. *The American Journal of Occupational Therapy*, *73*(4). **DOI: https://doi.org/10.5014/ajot.2019.030130.**

Choudhary, S.P., & Raj, R. (2022). Virtual Reality in treating mental illnesses. *International Journal of Environmental Research and Public Health*, 19, 2–14.

Craig, C. (2013). Understanding perception and action in sport: how can virtual reality technology help?. *Sports Technology*, 6, 161–169. **DOI: https://doi.org/10.1080/19346182.2013.855224**.

Conte, J. (2017). *Virtual Reality*. New York: University at Buffalo, The State University of New York.

Coulter, R., Saland, L., Caudell, T., Goldsmith, T.E., & Alverson, D. (2007). The effect of degree of immersion upon learning performance in virtual reality simulations for medical education. *Medicine Meets Virtual Reality*, 15, 125–155.

Cromby, J.J., Standen, P.J. & Brown, D.J. (1996). The potentials of virtual environments in the education and training of people with learning disabilities, *Journal of Intellectual Disability Research*, *40*(6), 489–501. **DOI: https://doi.org/10.1111/j.1365-2788.1996.tb00659.x**.

Dragani, R. (2019, July 23). *Brain science: Why VR is so effective for learning*. Verizon News Archives. https://www.verizon.com/about/our-company/fourth-industrial-revolution/brain-science-why-vr-so-effective-learning.

Fister Gale, S. (2015). Forget Millennials: Are You Ready for Generation Z?. *Chief Learning Officer*, *14*(7), pp. 38–48.

Kittel, A., Larkin, P., Cunningham, I., & Spittle, M. (2020). 360° Virtual Reality: A SWOT Analysis in Comparison to Virtual Reality. *Movement Science and Sport Psychology*, 11, 2–6. **DOI: https://doi.org/10.3389/fpsyg.2020.563474**.

Krokos, E., Plaisant C., & Varshney A. (2018). Virtual memory palaces: immersion aids recall. *Virtual Reality*, *23*(1), 1–15. **DOI: https://doi.org/10.1007/s10055-018-0346-3**.

Mikołajczyk, K. (2019). VR w edukacji – subiektywny przegląd możliwości, *E-mentor*, *2*(79), 33–40. **DOI: https://doi.org/10.15219/em79.1410**.

Li, C, & Ip, H.H.S. (2022). Defining Virtual Reality enabled Learning. *Int. J. Innovation and Learning*, *31*(3), 291–306. **DOI: https://doi.org/10.1504/IJIL.2022.122128**.

Li, C., Ip, H.H.S., & Ma, P.K. (2019). A design framework of virtual reality enabled experiential learning for children with autism spectrum disorder. *International Conference on Blended Learning*, 11546, 93–102. **DOI: https://doi.org/10.1007/978-3-030-21562-0_8**.

North, M.M., & North, S.M. (1994). Virtual Environment and Psychological Disorders, *Electronic Journal of Virtual Culture*, *2*(4), 37–42.

McCrindle, M. (2010). *The ABC of XYZ: Understanding the Global Generations*. Sydney: University of New South Wales Press.

Pourmand, A., Davis, S., Marchak, A., Whiteside, T., & Sikka, N. (2018). Virtual Reality as a Clinical Tool for Pain Management. *Current Pain and Headache Reports*, *22*(8), 53. **DOI: https://doi.org/10.1007/s11916-018-0708-2**.

Panchuk, D., Klusemann, M.J., & Hadlow, S.M. (2018). Exploring the effectiveness of immersive video for training decision-making capability in elite, youth basketball players. *Frontiers in Psychology*, *9*, 2315. **DOI: https://doi.org/10.3389/fpsyg.2018.02315**.

Peng, L., Yen, Y., & Siswanto, I. (2020). Virtual reality teaching material – virtual reality game with education. *Journal of Physics: Conference Series*, 1456, 012039. **DOI: https://doi.org/10.1088/1742-6596/1456/1/012039**.

Rosenberg, R.S., Baughman, S.L., & Bailenson, J.N. (2013). Virtual Superheroes: Using Superpowers in Virtual Reality to Encourage Prosocial Behavior. *PLOS ONE*, *8*(1), e55003. **DOI: https://doi.org/10.1371/journal.pone.0055003**.

Stasieńko, J., & Dytman-Stasieńko A. (2020). Odmienne przestrzenie uzdrawiania – psychologiczne terapie VR w perspektywie krytycznych definicyjnych aspektów pojęcia wirtualnej rzeczywistości. *Przegląd Kulturoznawczy*, *2*(44), 75–91. **DOI: https://doi.org/10.4467/20843860PK.20.015.12379**.

Sztumski, J. (2005). *Wstęp do metod i technik badań społecznych*. Katowice: Wydawnictwo "Śląsk".

Stunża, G.D. (2017). Edukacja wersja beta. Pokolenie Z i pokolenie Alfa a kompetencje uczestnictwa w kulturze, *Kultura Popularna*, *1*(50), 86–94 **DOI: https://doi.org/10.5604/01.3001.0010.0046**.

Application Sources

VRtuos – https://www.oculus.com/experiences/quest/3827275690649134/?utm_source=sidequest

Math World VR – https://www.oculus.com/experiences/quest/4923914040997217/?utm_source=sidequest

Organon 3D – https://www.oculus.com/experiences/quest/6218475558223281/?utm_source=sidequest

Ocean Rift – https://www.oculus.com/experiences/quest/2134272053250863?ranking_trace=100252698541779_2134272053250863_SKYLINEWEB_53f4803a-3aa9-4535-a611-6ab20c5a2f71&utm_source=sidequest

VirtualSpeech – https://www.oculus.com/experiences/quest/3973230756042512/?utm_source=sidequest

ZenVR – https://www.oculus.com/experiences/quest/4405820249480267/?utm_source=sidequest

The Climb – https://www.oculus.com/experiences/quest/2376737905701576?ranking_trace=100252698541779_2376737905701576_SKYLINEWEB_eef10a2d-16d8-4acd-b49f--d44d54555dd0

Speed Cube – https://www.oculus.com/experiences/quest/3812740692111787?utm_source=sidequest

Chess Club – https://www.oculus.com/experiences/quest/5353996901307344?ranking_trace=0_5353996901307344_QUESTSEARCH_77750482-cd64-4d65-aacb-22577989a841&utm_source=sidequest

Faraday's Magnets – https://www.oculus.com/experiences/quest/3939484836074053/?utm_source=sidequest

Anne Frank House – https://www.oculus.com/experiences/quest/1958100334295482?ranking_trace=0_1958100334295482_QUESTSEARCH_dee03006-d7be-44ad-828d-a3021597f85f

Mondly – https://www.oculus.com/experiences/quest/4214902388537196?ranking_trace=0_4214902388537196_QUESTSEARCH_38cd3720-e1e3-400e-b710-d70e26944ea9

Japanese in a nutshell – https://sidequestvr.com/app/2519/japanese-in-a-nutshell

Virtual Gallery of Art – https://sidequestvr.com/app/667/virtual-gallery-of-art

Star Chart – https://www.oculus.com/experiences/quest/1951863938215666?ranking_trace=0_1951863938215666_QUESTSEARCH_38cd3720-e1e3-400e-b710-d70e26944ea9

All-In-One Sports VR – https://www.oculus.com/experiences/quest/3840611616056575/?utm_source=oculusapplab.com

Enhance – https://www.oculus.com/experiences/quest/3696764747036091/?utm_source=sidequest

Mission: ISS: Quest – https://www.oculus.com/experiences/quest/2094303753986147?ranking_trace=100252698541779_2094303753986147_SKYLINEWEB_53f4803a-3aa9-4535-a611-6ab20c5a2f71&utm_source=sidequest

Lost Recipes – https://www.oculus.com/experiences/quest/4584847304916084/?forced_locale=en_US&utm_source=sidequest

SURREALISTa Persistence of Memory VR – https://sidequestvr.com/app/1694/surrealista--persistence-of-memory-vr

Cubism – https://www.oculus.com/experiences/quest/2264524423619421/?locale=pl_PL

The Characteristics of E-learning in Corporation – a Case Study Based on PZU and mBank

ABSTRACT

Corporate e-learning is different from university e-learning. The process of creating an e-learning training in a corporation consists of several steps, incl. the analysis of needs, setting goals and expected results, collecting materials, preparing the initial version of the training, testing, promotion and evaluation of training effectiveness. Characteristic features of e-learning in corporations are encouraging employees to co-create digital education within the organization, implementing various e-learning forms and cooperation with external entities. Due to the lack of resources (time and money), the university to a limited extent analyzes the needs of students, promotes digital education, engages recipients in creating training, or assesses effectiveness. In addition, the university implements modern techno-logical solutions to a limited extent. The cooperation of universities with external entities occurs, but it is organized in different fields than in the case of companies.

Keywords: e-learning, corporation, creating an e-learning training, university

Introduction

Corporate e-learning differs significantly from university e-learning. I am a student at the University of Warsaw, and at the same time I work in a corporation as an e-learning specialist. Therefore, I observe with interest the development of remote education in both these spaces – both in business and at the university. As part of this article, I want to present good e-learning practices that function in corporations and compare it to the reality of university. I believe that universities are able to draw on the experience of companies and develop digital education to the benefit of students.

As Edward T. Chen (2008, p. 45) from University of Massachusetts at Lowell said:

E-learning in corporation can be defined as a type of training delivered on a computer that supports an individual learning as well as organizational goals. The key of e-learning in corporations is to reach the organizations' strategic goals through reliable learning. (...) The purpose of an organization in using e-learning is to help the individual improve job performance and satisfaction, understand the job skills and help the company create a competitive work force.

E-learning is growing rapidly within corporations. It is possible because corporations "are utilizing it to help the individual achieve improved job performance and satisfaction, understand the job skills and help the company create a competitive work force. Companies need to train and educate their employees in a cost effective, efficient, thorough manner. E-learning is providing solutions to companies to achieve these goals" (Chen, 2008).

In the case of universities, e-learning also contributes to building a competitive advantage of the school compared to other schools. As Sylwester Gregorczyk (2010) notes, the development of e-learning must be related to the general strategy of the university's operation:

The consequence of such a choice will be the synchronization of e-learning with all areas of the university. (...) This means a qualitative change in performing basic activities related to recruitment, teaching, sharing knowledge (functioning of the library), communication (exchange of information between course participants, contacts with lecturers and practitioners). The online customer service channel must guarantee reliability, high security and professionalism.

What stands in the way? The most serious limitation in the development of e-learning is the high cost.

Methodology

As part of this work, the author wants to present good e-learning practices that the author has observed in two large companies in Poland: PZU and mBank. PZU SA is one of the largest Polish insurance companies, while mBank SA is one of the main consumer banks. Both companies are publicly listed companies and

therefore are required to report regularly. The annual reports of both companies contain a lot of information, including financial results, number of employees, but also the average number of training hours, good training practices. Both companies employ over 8,000 employees in parent companies alone. A decision was made to conduct a case study based on these two companies due to the fact that: (a) both companies are market leaders in their sectors; (b) have a similar number of employees in the major companies and significant financial capital, enabling a large budget to be located to training; (c) operate in sectors where employees have to do a lot of training (anti-corruption, data security, etc.); (d) most of the data on these companies is provided in annual reports; and (e) in annual reports and social media, companies boast about their digital education practices.

First, the author presented the process of creating an e-learning training based on Marta Machalska's book "Digital Learning. From e-learning to sharing knowledge" (2019), supplementing the theoretical content with examples. As we read from the cover of Marta Machalska's book (2019), "the study is intended for managers of all levels, people employed in human resources and administration departments, interested in employee development in the context of implementation and new challenges in line with the implementation of the company's business goals". So this means that the book focuses heavily on corporate e-learning.

In the next step, the characteristics of corporate e-learning were described on the basis of materials from two companies: PZU and mBank. The cast study method was used based on existing materials: reports and content on companies' websites. On the basis of these materials and personal experience, the author prepared the characteristics of e-learning in the corporation. The article contains quotes written in Polish, which the author translated into English.

The final section on e-learning in university is based on the observation of the participating author, because since 2017 she's been a student at the University of Warsaw.

The process of creating e-learning training

Creating an e-learning training in a corporation consists of several steps. At all stages, the training team cooperates with substantive experts, e.g. by creating training on the correct posture at the desk, the training team cooperates with experts in this field. The process of creating an e-learning training is presented

based on Marta Machalska's book "Digital Learning. From e-learning to sharing knowledge". Marta Machalska (2019, p. 80–81) points out, "the e-learning training production cycle consists of five stages (…): 1. Analysis, 2. Project, 3. Production, 4. Implementation, 5. Feedback".

Analysis of the needs, setting the goals of the training and the expected results

"The analysis stage requires the determination of the target group of the designed materials", it is necessary to determine who will teach whom and what (Machalska, 2019). The training team determines what needs in the organization are to be answered by the training and set goals for the training to achieve. This is an important point, because the form and content of the training should fit the purpose. The training goals allow you to plan the teaching process as well as evaluate the effectiveness of the training at the end.

Example

The current situation in the company: We conducted a survey and found out that 65% of employees complained of back and neck pain. Workers indicated that, in their opinion, the pain was caused by poor body posture at work.

The OHS team carried out an expert opinion on workplaces and no shortcomings in the workplace equipment were found – desks, chairs, monitors, etc. are adapted to office work. It has been shown that the problem is incorrect body posture of employees. Employees do not know how to adjust the height of the chair, how far away from the monitor you should sit, etc.

Goal: To show employees how to adopt the correct desk posture and enable them to practice it.

One month after the training, a test will be carried out to show whether the employees know how to adopt the correct body posture. We will also check if fewer people will complain of pain.

We set our goals as follows: (a) to make 60% of employees know how to adopt the correct posture at the desk after the training; (b) to reduce the group of employees complaining of pain (to a maximum of 50% of employees).

It is important to set realistic goals for yourself – it is impossible for all employees to stop complaining of back pain. Pain that manifests itself at work may, for example, be a consequence of a person's biological conditions.

Project

After the analysis is completed, a project should be created that specifies, among others: the production team, budget, schedule, assumptions, training concept (Machalska, 2019). The production team includes: a trainer or expert providing training content, methodologists (a person who knows how to create training courses), game designer, proofreader, graphic designer, 2D and 3D animator, programmer, tester (Machalska 2019). All these roles do not have to be filled by the company's employees. It may also be that the company employs content experts and a training team, but the technical work on the training will be carried out by the company that will be commissioned for this project.

Production

The production team knows what, how and with what it will be achieved. The training concept should include the training structure, goals, method of achieving goals, training methods. The production team collects substantive materials and then divides the content into important, additional and irrelevant. This division allows you to better prepare the training. Important content should be emphasized so that the training participant focuses his attention on it. Additional content can be described as a fun fact, and if something is irrelevant – it can be completely skipped.

The production team has to choose the form suited to the purpose, topic and target group. In the case of large corporations, the range of e-learning forms to choose from is very large, including screen training, animations, interactive documents, gamification, webinars, podcasts, movies, VR/AR, 360 movies. Moreover, often various forms are included in one course. You can also combine classroom training with e-learning elements.

Example

The training is to familiarize employees with the correct body posture at a desk, and then to have them practice hands-on. We can familiarize employees with the correct posture at the desk with an educational video showing step by step how to adopt the correct posture. And the practical part of the training, enabling the employee to practice adopting the correct posture, can be carried out using VR technology, where the employee will have to properly sit at the desk in virtual reality, and if he does not do so – the technology will guide him step by step through this process.

Many companies use the services of external suppliers, e.g. companies producing educational films or VR applications. Working with external entities, companies draw on their experience and together refine the concept of the training. Depending on the needs and capabilities of the company, the training is prepared internally or outsourced.

Once the initial version of the training is in place, the production team evaluates the product and has it revised as needed. At the testing stage, representatives of several groups are involved: potential recipients, content experts, a training team, IT. When the training is verified, it can be transferred for implementation.

Implementation – providing employees with training and promotion

When the training is ready, the company has to make the training available to employees, i.e. recipients. An important point is the promotion of training. Marketing team tries to present the recipients with the benefits of participating in the training. Employees should know why this training has been prepared and what goals it achieves. Often, in the case of e-learning training, companies promote not only a single training, but also digital education in general, emphasizing the advantages of this solution. Keep in mind that solutions such as VR are still new. Employees may have concerns about the use of such training, so describe in detail what this training is about and why this technology was used.

Feedback

When the participant completes the training, the training team collects feedback from them. Sometime after making the training available to employees, they conduct an overall assessment of the effectiveness of the training based on the collected data. If necessary – they introduce corrections to the training.

Example
We launched the training on proper posture in the workplace on June 1. Employees have time until June 30 to complete the training during working hours. After completing the training, each employee receives a questionnaire where they provide feedback. In such a survey, the employee can right after the training indicate what he liked, what was missing, how he assesses the usefulness of the training, form and content.

At the beginning of July, we collect all the answers and prepare a report that presents the overall assessment of the training. We collect all comments from employees and, if necessary, improve the training so that the next users receive the improved version of the training.

To check whether the training has achieved its initial goals, at the end of July, the company organizes a survey in which it checks whether employees know how to adopt the correct posture at the desk and whether they still complain about body aches.

E-learning at the university from the perspective of a student

I noticed that the above-mentioned elements of the e-learning training development process are typical for business organizations, but rarely occur at the university. Describing the situation at the university, I will refer to my experience, because since 2017 I have been a student at the University of Warsaw.

Needs analysis

As a student, I rarely come across asking students about their needs regarding both individual courses and digital education in general within the university. First of all, there is no need for research within the university. Sometimes it is the lecturers who take the initiative and ask the participants of the course about their needs.

Breakdown of content into important, additional and irrelevant

Often the substantive scope of courses at the university is wide. There is a lot of information in the class and important information is not listed.

Various forms at the university

Online courses at college mostly consist of reading texts, podcasts or short videos. Of course, this is associated with limited resources, because the university does not have a sufficiently large budget for the development of e-learning.

Engaging the target audience

In my 5-year adventure at the university, I did not encounter the involvement of students in testing e-learning training. Students can express their opinion after completing the course or pass it directly to the staff during the course. From my perspective, it would be worth it to show the course to at least a small group of students before implementing it in order to hear their feedback.

Promotion

Due to the lack of resources (money and time), the promotion of training and courses at universities is limited. The University assumes that students want to develop and will find motivation to develop. The promotion of digital education at universities is slowly growing, as exemplified by the activities of the Digital Competence Center of the University of Warsaw. An interesting form of promotion of individual classes is used by the Faculty of Sociology of the University of Warsaw, adding information about the classes on the faculty's fanpage on Facebook.

Assessment of effectiveness

At the University of Warsaw, feedback from course participants is collected in an organized manner only after the semester. In addition, only a small amount of information can be provided in evaluation questionnaires. In addition to the survey, feedback on the course can be provided directly to the instructors during the course. In my opinion, the assessment of the effectiveness of the courses is too limited.

The specificity of e-learning in a corporation

Characteristic features of e-learning in corporations, apart from those mentioned above, are encouraging employees to co-create digital education within the organization, implementing various e-learning forms and cooperation with external entities.

Encourage employees to participate in the process

An important part of digital education in a corporation is encouraging employees to participate in development activities. There are many forms of engaging employees.

Firstly, employees are involved in many stages of e-learning training creation, incl. extensive needs analysis and regular feedback collection. Feedback is collected both immediately after a specific training or development event, as well as in the course of general research, e.g. once a year.

Secondly, in large companies, employees have access to meetings, conferences and webinars devoted to development organized by the organization. At these meetings, employees have the opportunity to find out, among others, what development opportunities they have in the organization, how they can take care of their development in their free time and what the opportunities on the market are. A good example is the "Click on development" conference at PZU. As we read on the PZU website, as part of the second edition of the conference, which took place in 2020, "talked about how to remember new information quickly and for a long time, where to find valuable podcasts and what you can learn thanks to them; The topics covered why it is important not only to learn effectively, but also to unlearn and how to minimize the damage caused by constant exposure to new technologies" (PZU, 2020). During the conference, participants could listen to the speeches of experts (Radosław Kotarski, Karol Stryja, Rafał Żak, Kamil Śliwowski), but also ask a question or share their experience in the chat.

Another example of development events for employees are mBank's initiatives such as "Piątki z rozwojem" (Friday with development) and "Zaloguj się do rozwoju" (Log in to development). As part of the "Zaloguj się do rozwoju" initiative, employees have access to a variety of e-learning educational materials. As the chief employee development specialist puts it: "Zaloguj się do rozwoju is a program thanks to which we wanted to change the image of remote tools in development. We show employees that systematic learning, divided into smaller blocks, gives better results. We show, based on the 70/20/10 method, how important it is to experiment with the newly acquired knowledge and to supplement it through practice" (mBank, 2018).

"Piątki z rozwojem" is an initiative under which, on the first Friday of each month, mBank employees can take advantage of various development activities, including workshops, lectures, consultations. As we read on the bank's website:

Figure 1. PZU conference banner with the title "Technology is for us"

Source: LinkedIn of PZU, https://www.linkedin.com/posts/pzu_takapracamasens-kliknarozwoj-activi-ty-6808334570644148224-utSN?utm_source=linkedin_share&utm_medium=member_desktop_web (retrieved August 01, 2022).

Figure 2. The studio where the PZU conference took place

Source: LinkedIn, photo by Marcin Franczak, https://www.linkedin.com/posts/marcin-franczak-29182948_pzu-kliknarozwoj-takapracamasens-activity-6808831160588754944-rogV?utm_source=linkedin_share&utm_medium=member_desktop_web (retrieved August 01, 2022).

We want to present the development opportunities that our organization creates, as well as encourage people to be inspired and think about a broad approach to development. We also present development tools related to new technologies. The event is an opportunity to try development in areas other than daily tasks, and to experiment with different activities. (mBank, 2018)

The third form of engaging employees in development is encouraging them to co-create educational activities. Employees can not only learn, but also create their own e-learning training and share their knowledge and experience. In the case of PZU, the "Klik na rozwój" (Click on development) podcasts were created internally by PZU employees, while external experts made guest appearances (PZU, 2020).

Various e-learning forms

The form of the educational material should be matched to the subject, purpose and target group. In large companies, various forms of e-learning are used: screen training, animations, interactive documents, gamification, webinars, podcasts, films, VR/AR, 360 films. Moreover, various forms are often used within one course. You can also combine classroom training with e-learning elements.

Modern e-learning solutions such as gamification, VR/AR or 360 movies deserve special attention. Large companies can afford these expensive solutions due to having sufficient financial capital.

A good example of the use of modern e-learning solutions is the gamification used at mBank. MBank moved employees from several locations to the new headquarters. It was a large undertaking in which the company wanted to (a) show employees the new building, (b) indicate the hybrid principles, (c) present good practices regarding efficiency in the hybrid model. The whole game was set in the new mBank building, thanks to which employees could see the interior of the new headquarters even before the move.

As part of gamification, participants could use infographics, e-books, knowledge tests, films, and interactive tasks. According to the creators, the platform was visited by 591 employees who spent 1,251 hours in the game and completed 2,261 tasks (Westhill Company, 2022).

Another example of using new and diverse forms in e-learning is the use of VR. PZU Zdrowie organizes first aid training in VR technology for facility employees. Training participants learn in practice how to ensure safety at the scene of an accident; when and how to call for help; how to correctly conduct
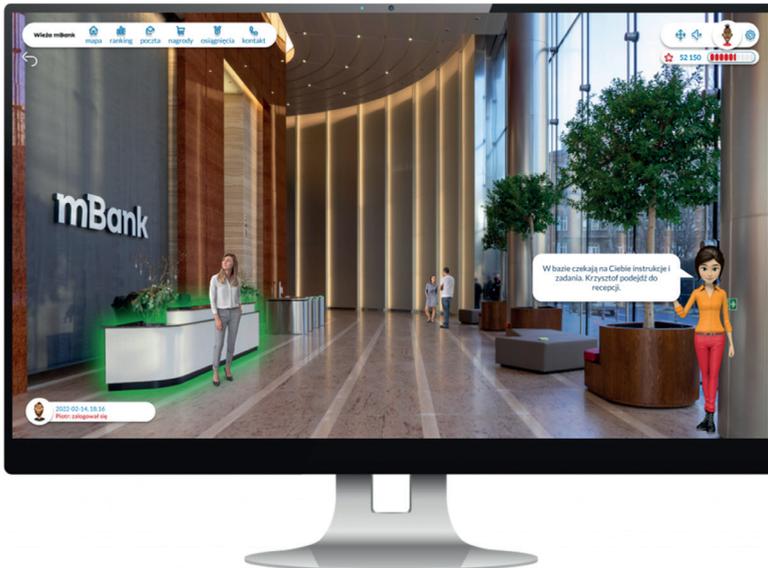
Figure 3. A screenshot of the gamification prepared for mBank, showing the hall of the new head office

Source: Westhill; https://www.westhill.pl/case-study/hybrydowy-model-pracy-gamifikacja-przeprowadz-ki-dla-mbank/ (retrieved August 01, 2022).
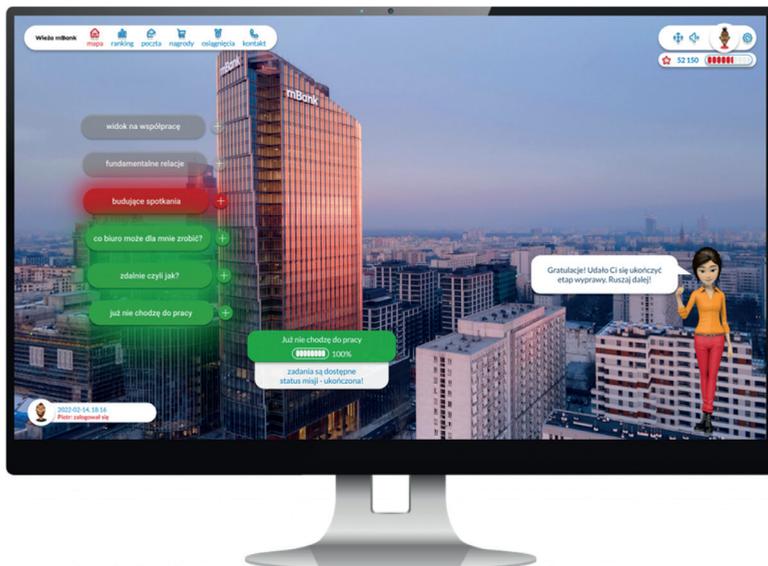

Figure 4. A screenshot of the gamification prepared for mBank, showing the bank's new head office from the outside

Source: Westhill, https://www.westhill.pl/case-study/hybrydowy-model-pracy-gamifikacja-przeprowadz-ki-dla-mbank/ (retrieved August 01, 2022)

cardiopulmonary resuscitation; how to use an automated external defibrillator in CPR. Thanks to VR technology, the participant can fully focus on what is happening in the game. The user puts on goggles and has to give someone first aid. The simulation guides the participant through a series of events and tasks and provides real-time feedback, e.g. it measures whether the depth of chest compression is correct.

Figure 5. Screenshot from PZU Zdrowie marketing material, showing a fragment of a VR game about first aid

Source: LinkedIn of PZU Zdrowie, https://www.linkedin.com/posts/pzuzdrowie_szkolenia-z-pierwszej-pomocy-w-technologii-activity-6919906947542519808-KrPs?utm_source=linkedin_share&utm_medium=member_desktop_web (retrieved August 01, 2022).

Access to various e-learning forms helps employees remember substantive content, builds commitment and interest.

Cooperation with external entities

Corporations are willing to work with a variety of third parties to create educational content for employees.

Various e-learning platforms for learning foreign languages such as eTutor, Tutlo, SuperMemo, Ella are very popular on the market. Large companies, such as mBank or PZU, which employ a large number of employees, eagerly use such solutions. The implementation of such a platform has many advantages, first of all it is cheaper than organizing foreign language classes for employees on their own. In addition, employees can use the platforms anytime, anywhere. The platforms are created by specialists in the field of teaching foreign languages, which allows for quick and effective implementation of language learning in large companies. There are also e-learning platforms on the market that develop leadership, interpersonal and similar competences, such as ICAN, LinkedIn Learning or Leanovatica. These types of platforms offer training in many areas, incl. in finance, law, management, marketing, public speaking.

Another form of cooperation with external entities is inviting external experts to co-create educational materials for employees, e.g. to participate in films, webinars and conferences. The company does not have to employ specialists in every field. Inviting experts from other organizations to cooperate allows you to broaden your perspective and exchange experiences.

Often, cooperation with external entities is undertaken in the long term, e.g. in the case of e-learning training, large corporations willingly cooperate with companies dealing strictly with screen training, VR, films, etc. Service providers, thanks to their experience and knowledge, can quickly and professionally make a product for clients.

On the mBank website you can find information that the company has its own internal e-learning platform, but it also gives employees access to other video and platform resources, incl. to the LinkedIn Learning database, the Legimi library, the eTutor application for learning English and to the archive of business publications of Harvard Business Review Polska (mBank, 2020b).

Reference to the situation at the university

The three characteristics of e-learning described above in a corporation are rather absent at universities. My observations show that the university does not have the resources (time and money) to engage students and employees in

co-creating digital education. Universities also lack resources to implement modern technological solutions, which means that the range of possible e-learning forms is small. The issue of university cooperation with external entities looks much better. In the case of the University of Warsaw, students have access to many different sources of knowledge, for example through the online databases of the University Library. On the other hand, this cooperation of universities with external entities occurs in different fields than in the case of companies, e.g. students do not receive access to e-learning platforms available on the market for learning foreign languages or developing soft skills, but educational materials are prepared by university employees.

Summary

Corporate e-learning is different from university e-learning. The process of creating an e-learning training in a corporation consists of several steps: 1. Analysis, 2. Project, 3. Production, 4. Implementation, 5. Feedback. I noticed that there is a limited need for analysis at the university, the division of content into important and less important, involving potential recipients in the process of creating and testing the training, promotion and evaluation of training effectiveness. However, it should be remembered that within the university, faculties and employees often take the initiative on their own, e.g. in the area of promoting their classes or deepening the assessment of effectiveness after the course.

Other characteristics of e-learning in corporations are encouraging employees to co-create digital education within the organization, implementing various e-learning forms and cooperation with external entities. On the other hand, the university does not have the resources (time and money) to engage students and employees in co-creating digital education. Universities also lack resources to implement modern technological solutions, which means that the range of possible e-learning forms is small. The cooperation of universities with external entities occurs, but it is organized in different fields than in the case of companies.

Of course, I am aware that the presented image does not show all aspects of the issues raised. I believe that the presented perspective, at least to a limited extent, shows the discrepancy between e-learning in corporations and e-learning at universities. I think universities are able to learn from the experience of companies and develop digital education to the benefit of students.

REFERENCES

Chen, E.T. (2008). Successful E-Learning in Corporations. *Communications of the IIMA*, *2*(8), 45-53. Retrieved June 30, 2022, from: https://scholarworks.lib.csusb.edu/ciima/vol8/iss2/5.

Gregorczyk, S. (2010). E-learning a przewaga konkurencyjna szkoły wyższej. *E-mentor*, *5*(37). Retrieved June 30, 2022, from: https://www.e-mentor.edu.pl/mobi/artykul/index/numer/37/id/787.

Machalska, M. (2019). *Digital Learning. Od e-learningu do dzielenia się wiedzą*. Warszawa: Wolters Kluwer Polska.

mBank. (2018). Raport roczny mBank. Retrieved June 30, 2022, from: https://www.mbank.pl/raport-roczny/2018/interesariusze/zaangazowani-pracownicy-2/zaangazowani-pracownicy/.

mBank. (2020b). Raport zintegrowany mBank. Retrieved June 30, 2022, from: https://www.mbank.pl/raport-roczny/2020/wp-content/uploads/2021/07/mBank-Raport-zintegrowany-2020.pdf.

PZU. (2020). Raport roczny PZU. Retrieved June 30, 2022, from: https://raportroczny2020.pzu.pl/pl/rozwoj-pracowników.

Westhill Company. (2022). *Hybrydowy model pracy gamifikacja przeprowadzki dla mBank*. Retrieved July 10, 2022, from: https://www.westhill.pl/case-study/hybrydowy-model-pracy-gamifikacja-przeprowadzki-dla-mbank/.

Television Workshops
as a Media Skills Training Method

ABSTRACT

The aim of the article is to show the specificity of media classes concerning television production. It contains the author's experience from many years of her work in the media. It describes the way of carrying out the workshops and the training cycle in the field of television journalism and audio-visual production for various audiences. The article presents the basic workshops (lasting 2–3 hours), specialist classes (in the amount of 6 hours) and the 30-hour training cycle. The activities were also presented, which, according to the author's assessment, give the highest effectiveness. The basic terms concerning television were also explained and training games were quoted. The author also demonstrated that classes of such kind constitute a perfect method of training media skills, making the participants sensitive to image, sound and film narration, incite them to discover their passion, show how to overcome difficulties and allow them to acquire knowledge better and gain skills. The aim of these workshops is, in the case of more advanced participants, to transfer knowledge and teach them the basic skills useful in the media sector, mainly television journalism and rudiments of the television art. The participants also acquire knowledge and skills concerning public speaking, auto-presentation, interpersonal communication, as well as the principles of building relationships with the media. As to the younger participants, the TV workshops are mainly encouraging them to learn about the world of the media and expressing their own creative expression. For everyone they are an opportunity for a creative play, discovering and stimulating the creative potential. They can also discover their own passion and career development path.

Keywords: TV workshops, media workshops, television, academic television interview, students, TV journalist's workshop, journalist, reporter, presenter, media production, camera operator, editing, postproduction, direct sound, stand up.

> One image is worth a thousand words.
> Chinese proverb
> Nie święci garnki lepią. (You don't have to be perfect to perform.)
> Polish proverb

Introduction

I was accompanied by these two sayings during many years of my work for TV. They indicate that, firstly, it is the image that is the most important thing in TV and that it governs everything. Without understanding this relationship no success can be achieved in the audio-visual sector. Secondly, everything can be mastered, provided that we develop appropriate habits. Charles Duhigg (2014) explains in a quite straightforward way, how one can bring about far-reaching changes in one's life, focusing on change or cultivating the key habits. The methods he describes can be successfully used when working to overcome stage fright during "live" interviews and in numerous stressful situations connected with the reporter's job. Besides, like the proverbs quoted above, they help to encourage students to commence their own activities in the audiovisual domain. One of the most important things that can be done for the participants of classes about the media (except teaching techniques that are useful in this profession) is to create a creative space for them. A space where they can demonstrate their creativity and learn on their own mistakes, as well as acquire, in the conditions of a play, the canon of values that are obligatory for a journalist and a TV author.

The article is focused on the activities, which make the classes the most effective. It also discusses the schemes of various workshops and training cycles. It was also demonstrated that classes of such kind constitute a perfect method of training media skills, making the participants sensitive to image, sound and film narration. Besides, they stimulate them to discover their passions, show how to overcome difficulties and allow them to acquire knowledge better, as well as to gain skills. Simultaneously they teach that a TV journalist is neither a judge passing sentences, nor a star – and the success of a program or an interview consists of the work of the whole team.

Whom for, what for, and how?

There are as many scripts and ideas for media workshops as there are TV authors. A film director's classes are different from those conducted by a feature writer, reporter or presenter. Still different will be the workshops prepared by a vision implementer, camera or image operator, or an editor or post-production specialist. However, they are also connected by the will to transfer knowledge and skills from a point of view of a practician.

I have been conducting workshops and classes in television art and broadly understood media production, as well as communication, self-presentation and public speaking. The participants are school students of different ages (from early years of primary school to final secondary school forms), as well as university students, including those cooperating with the Academic Television TV UMCS. Not only Poles take part in the workshops, but also foreigners e.g. from Ukraine or Belarus. Separate training courses are arranged for English-speaking students, in television techniques. I also run training courses for the representatives of other communities, including local government officials. Though the form of classes themselves varies significantly, depending on the listeners' age, their needs, expectations, level of knowledge, training cycle, project or place – however, every single time the basic elements of training remain constant. Such kinds of activating classes are always fully packed and enjoy substantial popularity.

When planning media training courses, we cannot always find out about the needs of participants or determine their profiles in advance. It happens so especially when the workshop is open in its form, e.g. during Open Day of University or Lublin Science Festival. That is why I always have alternative scenarios and games ready, which can be proposed, if needed. When preparing training courses, I take many factors into consideration, improving the effectiveness of classes, facilitating the participants' transfer of acquired knowledge and skills. Appreciating the role of the oldest teaching method – lecture, modifying it, using it as an introduction to problems or as a summary of exercises and practical activities. If the group is not too numerous, a lecture on, for example the basic journalist genres in television, reporter's workshop or types of interviews, assumes an interactive form. Frequently I start with an anecdote or case study. Another method that seems handy, regardless of the age and degree of participant's skills, is role-playing (simulation of a real interview where one person acts out the role of the journalist and the other – that of an "interviewee"). Positive feedback is the key thing here (the so-called "sandwich" feedback), which is mentioned in a greater detail here. This is significant mainly because

interviews take place in front of the camera and undergo public assessment. According to Sławomir Jarmuż and Tomasz Witkowski (2004) "role-playing is social exposition, and the camera multiplies it. This makes us focus on ourselves very strongly and we feel under threat". That is why they suggest the following procedure should be assumed:

- emphasizing that the analysis concerns BEHAVIOR, not the PEOPLE playing roles,
- focusing on positive behaviors of persons taking part in the exercise,
- indicating their own mistakes by the "actors" themselves, practicing through the question: "What would you change in your behavior, if you could repeat this scene?"
- analyzing mistakes, but simultaneously indicating of appropriate ways of responding.

Experienced trainers also advise to focus on one's own observations and not on drawing conclusions, make descriptions, not assessments, share ideas and information instead of giving advice. Besides, they suggest describing behavior in the categories of "less" or "more", and not "yes" or "no" and focusing on benefits that could be given to the recipient by feedback (Łaski, 2008).

Scenarios and scripts

During twenty-five years of my work in media and at the university I most often has been using the following formats of television workshops prepared by myself:

- in the amount of 2 full hours (120 minutes) without a break (or 3 lesson hours, 45 minutes each) carried out in a TV studio for persons usually inexperienced in media sector (school students, participants of projects) or for new cooperators with TV UMCS;
- for students of journalism/media production/ young journalists in the amount of 6 lesson (45-minute) hours (or during one day);
- workshops within the training cycle planned for 30 lesson hours for students of journalist courses, public relations and similar ones.

These classes, due to their specificity, should be held in real time. In the cycle of training planned for 30 hours some elements of training can be conducted online, if the circumstances (most often the situation of pandemic) require so. What is especially meant here, is the lecture and all kinds of exercises related to teamwork not requiring operation of TV equipment. If, however, the training is to bring real results – it should be connected with the occasion to get acquainted

with the equipment in the studio or some other implementation room and to train the participants' skills in such conditions.

Practical media education of students, trainees and school students is an important part of educational activity carried out by the Academic Television TV UMCS that has existed since December 1st, 2015. What is meant here, is the cyclical, specialist training courses and taking part in different projects (such as the Open Doors of UMCS, Lublin Science Festival, Enterprising Kids, Enterprising Youth, Stage Adventure with Chatka Żaka, workshops for UMCS partner schools and others). Training sessions in TV UMCS were also prizes for the winners of competitions, such as the Unia Film Festival. The classes described here are most often held in the television studio and the video directors compartment of the UMCS Academic Culture and Media Center Chatka Żaka (TV UMCS is included in the structure of that unit), sometimes also in the small performance hall and in the editing room and generally – inside Chatka Żaka.

The media workshops, run by me in cooperation with camera operators, introducing the basic issues of television journalism and lasting 120 minutes, are dedicated to groups of 12–16 persons. Participants will get to know, among others features and structure of news, types of interviews and basic concepts in the field of television terminology. They can get acquainted with the relationship between the image and the word, journalist information sources and find out how work in the newsroom is organized. They can try their strength in front of and behind the camera. The scheme of classes is usually the following:

- introduction and the first activating, "ice-breaking" game, initiating the subjects concerning public speaking (articulation, diction, pronunciation intonation, pace, volume and learning to breathe);
- passing on to stage fright, its physical and mental symptoms, as well as the ways of coping with it;
- training basic TV terms in a quiz with rewards;
- training behavior in front of the camera (first impression, appropriate posture, gestures, eyesight, attire);
- discussing kinds of questions (open, closed, suggesting and others – their role and examples), as well as critical situations in the work of a reporter;
- dividing the group into the journalist and the technical team, as well as individual work supervised by the trainers;

- practicing conducting and recording interviews on assigned subjects in pairs with the use of TV studio equipment, video director's room, green screen and different kinds of background;
- discussing the exercise, summary of the class.

Due to the restricted class time and mobility of the group, some elements can be treated more briefly for the benefit of practical exercises with the use of equipment. The key parts are interviews conducted by the participants themselves, discussing types of interviews and kinds of questions is equally important. Simultaneously, the methods of reporter's work are introduced. Referring to situations from my reporter's practice, I present, among others, ways to deal with crisis situations. An important element of a longer class is discussing the sources of journalists' information and newsroom work organization. Obviously, a training session of such kind does not exhaust the subject and will not teach the participants the "TV behaviors". It may, however, become a good introduction to subsequent activities, such as gaining experience in academic television or other editorial offices. Regardless of their age and level of skills, the participants are very eager to take part in such types of classes, provided that for them it is connected with entertainment and the sense of unleashed creative expression. Hence, the biggest effort of the trainer involves suggesting exercises fit for most persons from groups that, obviously, are not homogenous. Another version of such a class for more advanced participants is a young filmmaker's workshop, concerning building film narration and rudimentary storytelling schemes, using film sets (movie plans), frames and perspectives. Then one of basic exercises involves using a currently easily available tool, which is the mobile telephone, to build a photo or video story – for instance in five shots.

Quite a big organizational challenge is to organize TV workshops for the youngest children (aged 6–10 years old). A good activating exercise, introducing some order in the class and always liked by the participants is dividing them into pairs and conducting interviews about their favorite animals. Children also willingly act out the roles of weather forecast presenters with the use of a portable green screen. An attraction (even in the groups of older school students, aged 11–13 years old), is playing "catching images" displayed on a green screen from popular cartoons.

Besides such kind of exercises, TV UMCS also offers specialist individual training courses for operators, including learning basic operation of video and photo cameras (mainly Canon 5D) with explanation of terms indispensable for

Figure 1. Technical equipment used during the workshops
Source: Author's own elaboration, photo by Tomir Jędrejek.

Figure 2. Technical equipment used during the workshops
Source: Author's own elaboration, photo by Tomir Jędrejek.

video recording and taking photographs, (such as: iris, snapshot, ISO, whiteness balance, etc.) and information concerning movie plans, frames etc.

We also have training courses in sound editing (including, i.e. learning to operate different kinds of audio recorders and basic knowledge concerning characteristics of directional and condenser microphones). Students take part in workshops in editing and post-production of images, as well as production management. Each of the training stages ends with a test of gained knowledge and skills.

Figure 3. Technical equipment used during the workshops
Source: Author's own elaboration, photo by Tomir Jędrejek.v

The above class schemes were carried out, as it has already been mentioned, at TV UMCS. I have also conducted classes for other organizations and units. A draft (scenario) of a specialist class – a 6-hour training session for young journalists concerning the art of conducting a TV interview is presented below:

1. Interview as a manner of presentation:
- an exercise (an "icebreaker") introducing into the module: the participants interview each other in pairs. They do not take notes – they focus on their interlocutors' utterances and then they present them to the group (according to the key interests and talents), a joint summary of most frequent questions

and answers. The participants themselves create a definition of interview (activation through teamwork).

2. Good interview criteria and interview types:

- preliminary discussion of ways to create strategy, structure, system, team, style and skill teaching,
- introducing and discussing the terms: information interview, curiosity satisfying and confrontation interview. Presenting other interview typologies – from street probe (*vox populi*) to an interview in the television studio (Boyd, 2006),
- activating and utterance accuracy training game entitled: 11 questions to an expert (Kirby, 2002) or teamwork: making questions to press spokespersons of the police, public prosecutors' office and fire brigade.

3. Kinds of questions and ways of coping with difficult questions:

- discussing kinds of questions (open, closed, suggesting and others),
- the game "Amnesia" (Kirby, 2002) – training verbal communication, transferring feedback, closed questions, body language,
- analysis of a selected TV show – guessing questions that guests are asked by journalists,
- discussion, joint preparing a set of most frequent questions and answers.

4. Ways of reporter's work and basic principles of conducting interviews:

- initial discussing of a reporter's workshop (observation, interview as a genre and a way of gathering information, getting acquainted with the documents),
- discussing sources of journalists' information,
- presenting principles: from the detail to the general, from practice to theory, from concrete to abstract, from the present to the past or future,
- presenting basic TV terms,
- technical (technical (production) aspects of conducting interviews:
- visiting the TV studio, presentation of production system, cameras and lightning,
- preparing for interviewing practice.

5. Exercise – interviews in pairs:

- recorded by cameras and played back to participants. Feedback consistent with the good presentation principle.

6. Summary:

- collecting applications, presenting bibliography, homework: prepare an interview with a well-known person (celebrity) meeting the criteria of one of previously discussed interview types.
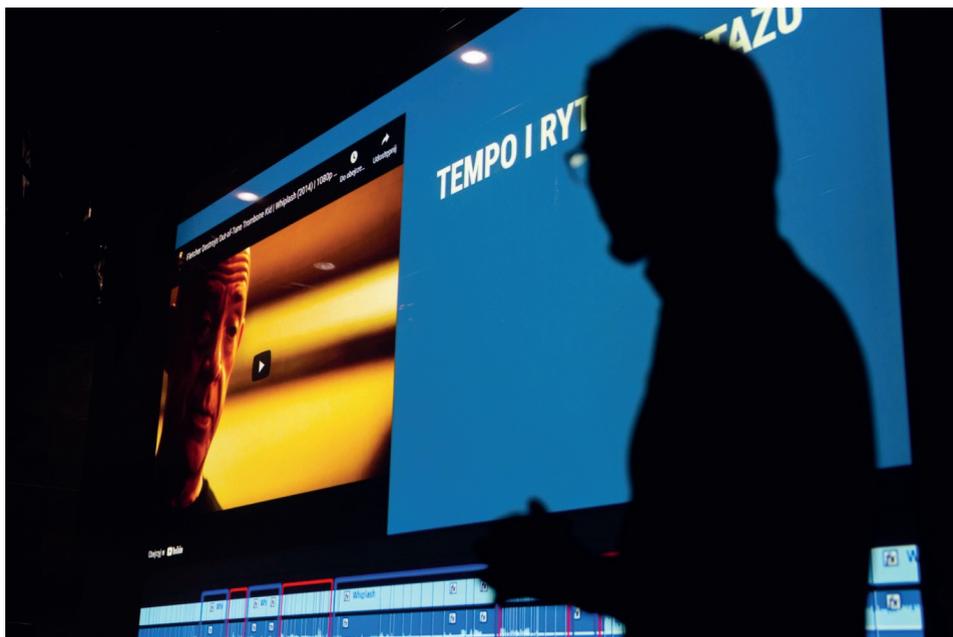
Figure 4. (Workshops in editing and post-production of image
Source: Author's elaboration, photo by Jan Jeżak.

The scenario for students within the 15-hour training cycle – 2 lesson (45 minute) hours each, which is 30 lesson hours in total concerns the comprehensive knowledge and skills within the scope of television journalism. Among others, it includes:

- rudiments of television techniques and film directing (terminology, word-image relationship, film and production standards, including movie plans and frames, edition and sound correct TV studio production system, set and other aspects),
- organization of an audiovisual work production process and the work in newsroom,
- discussing basic journalist genres in TV, as well as sources of information. A substantial part of the course is devoted to the language of journalist utterance, rudiments of TV rhetoric, as well as to the workshop of reporter, presenter, information program editor and feature writer (publicist). There is a lot of practice in front of and behind the camera, as well as in the course room, self-presentation and stage fright managing exercises, writing reporting texts, working with a team of reporters, creating one's own information program, analyzing selected TV shows and visiting different

editorial offices. A substantial part of the course is devoted to situations of crisis and program strategies. The participants also learn about press law and copyright, international codes and principles that journalists must observe, press spokesperson's workshop, including basic forms of communicating with the media. The subsequent editions also practice the production of individual films with the use of mobile telephones, to be published in social media and meetings with the Internet (web) authors.

Training exercises and games

In every training session, first impression made by the trainer (coach) is extremely important, as is establishing the principles for everyone to observe, as well as introducing an exercise, which is to help establish personal relationships within the group. The introductory exercises have three aims to fulfil:

· participants integration,
· general assessment of the group (looking at the participants' attitudes, knowledge and experience),
· stimulating active attitude and involving the participants into the class (Silberman & Auerbach, 2006).

During my classes I use both ready-made sets and the materials prepared by myself.

Due to restricted time during two-hour workshops, an "ice breaker" sometimes is reciting tongue twister sentences together that help master careful pronunciation. "Czy trzy cytrzystki grają na cytrze, czy jedna tańczy a druga łzy trze?" (Are three zither players playing the zither, or is one of them dancing and is the other wiping her tears off?); "Szczenię szczeka w szczawiu." (A puppy is barking in the sorrel.); and „To co, że ze Szwecji?" (From Sweden, so what?) – these are a few examples of phrases, which are very difficult to pronounce quickly and clearly, even for Poles, due to the specificity of the Polish language. They always make the participants burst out with laughter. They serve relaxation and introduce the issues of diction, breathing and the manner of articulation. They are used not only during media workshops, but also in public speaking training. Such exercises are done in a circle, in the middle of the hall or room, all the participants are invited to join in, and it usually gets a very good response.

Another exercise, involving the group and introducing some rivalry, is a game connected with guessing terms from the TV jargon. Thanks to this we can smoothly pass on to the next part of class. The participants are usually divided

into a few groups, each of them draws a set of questions with riddles and after a few minutes the group representative presents the answers. When it is difficult, everybody tries to find solutions. Prizes are small, usually promotional, gadgets. This game can be freely modified, depending on the time and age of the participants.

Another exercise is conducting interviews. If the class lasts two hours, this is preceded by a short introduction about what is an interview, what are the crucial strategies, interview types and kinds of questions. In longer training sessions these elements are appropriately extended (the six-hour session discussed in the article is entirely devoted to interviews). The key part of this exercise is dividing the participants into 2 groups: the journalists and the technical managers. Then, if the class takes place in a TV studio, camera operators and vision implementers work with the technical group, while I support the team of journalists. In the group of journalists, the participants draw or choose descriptions of reporting situations. Then they form pairs: journalist-spokesperson, next they swap their roles. In the technical group the participants gather around 2 or 3 studio cameras and, supervised by experienced camera operators, they work on frames and film sets. Next the "live" type reporting situation is initiated, which is a few minutes of a "live entry" of the reporter who is interviewing a guest. We have to add that all the reporting situations used in this exercise are real and they come from the author's archives. It is worth remarking here that nobody can be forced to do such an exercise, because we might involuntarily breach somebody's private space and the effect can be quite contrary to what was intended.

Depending on the time of class, it can be enriched with additional exercises, e.g. those concerning language correctness. A quiz related to the language of journalists' utterances can be conducted in the form of play in a circle in the middle of the room, which is not very stressful for the participants.

Television terminology

Some of the most important television terms, which are frequently classified as jargon, were explained below. Most of them are of English origin, but sometimes they mean something different from the original words. In the foregoing presentation I used both my own experience and the English-Polish Dictionary of Basic Television Terms and Expressions (Kidybińska, 1998) as well as other sources (Boyd, 2006; Adams & Hicks 2007).

One of the most important terms used in television is DIRECT SOUND (100% – "SETKA"), which is one hundred percent of image and sound. It strengthens the report credibility and provides emotions. It is an utterance of a person visible in the frame (recorded with good sound level). This is related to the term TIME CODE (electronically generated time code, giving hours, minutes, seconds and frames, useful in recording and editing). Unlike the direct sound, EFFECT SOUND is the sound whose source cannot be seen, or which can be heard in the background.

Another term that needs explanation is STAND UP. In the information program, it is a journalist's comment, said directly to the camera, often at the end of a piece of news. Stand up gives the report an original trait, it is also used when an occurrence must be told about, because it cannot be shown. Stand up can also be bridge or bridging one (e.g. in the middle of a news report, joining two plots – though a piece of news should principally consist of one, extended plot) or introducing (at the beginning of the report). This convention also includes a LIVE, that is an original live report (the term LIVE also refers to a "live" program transmitted while it lasts, without delays and without editing).

Here we cannot fail to mention the form known as NEWS. It is the basic journalistic information on TV, answering the question: who, what, when, where, why, how and what results from it. In many television transmissions the basic assumption – that news is information, not opinion- is deliberately disregarded. However, the comment is only acceptable in the form known as stand up. In accordance with KIS (keep it simple) principle, a bit of news should be short (2–3 minutes), topical (concerning current events taking place nearby), as well as significant (affecting the recipients' lives, revenues and emotions), interesting, sometimes also dramatic and, in a sense, entertaining (Boyd, 2006). Here it is worth remarking that a simplified form of news is VOICE or VOICE OVER, which exactly means "voice recorded out of vision" (Kidybińska, 1998), however, basically, it is a short report with a text read by a presenter from the studio during a "live" program.

FORSZPAN (TRAILER), corresponding to HEADLINES – is a short preview of the most important information in the program. It is placed at the beginning, often before the presenter appears, structured so that the viewer's curiosity is stimulated. INFOTAINMENT, in turn, is a digest of information, put more or less in the middle of the program – about what more interesting things can be seen there.

There is a game connected with TV terms, which is used at the beginning of most workshops (except those dedicated to the youngest children). In the

workshops it is also used other television terms, which were omitted in the article, as they are not of crucial importance for the reader. It is also worth explaining the meaning of two terms that might be encountered by all recipients of the media. PRZEBITKA (SHORT) – is a shot included in a TV material, whereas ANIMATION in this context means overlapping of similar images, i.e. a type of editing error (which, for instance, occurs when the interlocutors in two subsequent direct sounds look to the same side). Animation can be covered by a short. Obviously, all the principles of editing can be disregarded on purpose, however, you must know what for.

Summary

The article presented the specificity of media classes concerning television, especially informative, journalism, as well as audiovisual production. The classes were presented in their basic and advanced version, as well as the activities enhancing their effectiveness. It was demonstrated that television workshops create a valuable and creative method of working with young people facing the choice of future career path. They can be a supplement of academic or school education, as well as an impulse to undertake individual effort aiming at broadening one's own competence in the field of the media and audio-visual technology. They help to get acquainted with the rudiments of television techniques and gain reporter's, publicist's or presenter's skills. They are also useful in developing critical thinking, conscious analysis of TV programs and understanding the mechanisms governing the media world. The participants can also gain the rudiments of the knowledge about public speeches, auto-presentation or interpersonal communication. The workshops help to discover and awakening one's own potential, creativity and expression. They also give the opportunity for creative, frequently transforming, play.

REFERENCES

Adams, S., & Hicks, W. (2007). *Interviewing for Journalists*. Kraków: Wydawnictwo Uniwersytetu Jagiellońskiego.

Boyd, A. (2006). *Broadcast Journalism. Techniques of Radio and Television News*, Kraków: Wydawnictwo Uniwersytetu Jagiellońskiego.

Duhigg, C. (2014). *The power of habit*. Warszawa: Wydawnictwo Lekarskie Sp. z o.o.

Jarmuż, S., & Witkowski, T. (2004). *Podręcznik trenera. Praktyka prowadzenia szkoleń*, (pp. 135–136), Warszawa: Moderator.

Kidybińska, I. (1998). *Angielsko-polski słownik podstawowych zwrotów i wyrażeń telewizyjnych*. Warszawa: Ośrodek Szkolenia i Analiz Programowych TVP S. A.

Kirby, A. (2002). *Games for trainers*. Kraków: Oficyna Ekonomiczna, Oddział Polskich Wydawnictw Profesjonalnych sp. z o.o.

Łaski, K. (2008). *Komunikacja interpersonalna*. Lublin: Lecha Consulting sp. z o.o.

Siberman, M., & Auerbach, C. (2006). *Metody aktywizujące w szkoleniach*. Kraków: Wydawnictwo Wolters Kluwer, Oficyna Ekonomiczna.

Monoprofile Medical Simulation Centres – Selected Issues

ABSTRACT

Many universities aspire to have Monoprofile Medical Simulation Centres on their premises. Therefore, institutions are trying to obtain funding from the European Social Fund and related programs. The creation of a Monoprofile Medical Simulation Centre with appropriate infrastructure and trained academic staff in the field of conducting practical classes is valuable in the 21st century. The indicated simulation method will result in a better student's mastery of practical skills and social competences and in sensitising students to such a very important aspect in the patients' disease states, which is empathy, and thus better performance of the profession of a nurse in the future. Students learn appropriate medical procedures, interviewing, research and other medical elements using new technologies.

Keywords: Monoprofile Medical Simulation Centres, modern teaching methods, patient

Introduction

Including the simulation method in the didactic process is an integral part of a modern process preparing nursing students for practice as a nurse. Sometimes practical tasks may be adequate to build a sense of agency in people who will work independently with patients in the future. An important aspect is that the specialist will deal with issues in various situations, including crisis or emergency. It is important to build a stable position of the University in the market of nursing students' education. It is necessary to introduce innovative technologies, trainers and simulators, and to expand the knowledge of the teaching staff in the use of simulation methods. These issues are necessary

in the process of practical education for many students – not only in nursing (Kalemba-Dróżdż, 2019).

An example here is one of the educational institutions located in the Greater Poland region. The State Higher Vocational School in Konin has applied for funding for the project called "The establishment of the Monoprofile Medical Simulation Centre for the faculty of Nursing at the State Higher Vocational School in Konin" from the European Social Fund under the Operational Programme Knowledge Education Development.

The aim of the project is to significantly increase the practical skills of nursing graduates at the State Higher Vocational School in Konin by conducting additional classes for 72 students in the Monoprofile Medical Simulation Centre (MMSC) created within the project, based on the developed development programme and resulting scenarios for simulation classes. The project implementation period is from April 1, 2020 till December 31, 2022[1].

As a result of the project, it is planned to create a Single-Profile Medical Simulation Centre equipped with modern equipment enabling simulation teaching in the field of Nursing at the State Higher Vocational School in Konin. As part of this task, the following will be created: Simulation Room, which includes: adult simulation station, child simulation station, open incubator simulation station; equipment washing and segregation room, simulation equipment warehouse. Other elements will include the control room, server room, examination room and others. The tasks planned to be implemented under the project will include the adaptation of rooms in the teaching building through renovation and construction works, the purchase of equipment for the Centre, the development of a university development program for the Faculty of Nursing and scenarios for simulation classes. In addition, students will be familiarised with the work of specialist clinics operating in the hospital, staff training, training in the functioning of the IT program for patient service, training students in the rules of evacuation or conducting training and classes for students in prepared and equipped rooms[2].

There are many examples of implementation from all over Poland. One of them, which is nearly finalised, may also be a facility located in the capital city. On the website of Cardinal Stefan Wyszyński University in Warsaw, one can find detailed information on this subject. The aim of this project is to increase

---

[1]   https://www.ans.konin.pl/aktualnoscieu/8373-monoprofilowe-centrum-symulacji-me-dycznych

[2]   https://www.ans.konin.pl/aktualnoscieu/8373-monoprofilowe-centrum-symulacji-me-dycznych

the quality of education by improving the quality of practical training in the field of nursing at UKSW in the period from January 1, 2021 till October 31, 2022. As part of the project implementation, a Monoprofile Medical Simulation Centre (MMSC) will be established and maintained for the faculty of nursing[3].

Medical Simulation Centres are also a high-quality reproduction of hospital standards, and therefore the profiles of the patients themselves. In order to make real the realities that future nursing and midwifery students will have to face; such places are equipped with top-class phantoms.

The basis of the kit is the AmbuMan manikin with the latest built-in Ambu wireless technology. The Ambu Manikin Management Module enables wireless control from a web browser, monitoring of exercisers' actions and documentation of training.

The Ambu Manikin Management Module is the central interface collecting all data and information: depth of chest compressions, correct positioning of hands, respiratory volume, air blows into the stomach. The manikin enables training in airway management with such devices as: laryngeal mask, laryngeal tube or endotracheal tube. It is also possible to ventilate with

Figure 1. Equipment Monoprofile Medical Simulation Centre – Phantom – male Ambu company
Source: https://www.medyczny.pl/media/products/c97935612ecb4c98b2b9d45827895932/images/thumbnail/big_airway.png?lm=1653924007 (retrieved June 25, 2022).

---

[3]   https://wmcm.uksw.edu.pl/monoprofilowe-centrum-symulacji-medycznych-dla-kierunku-pielegniarstwo-uksw/

Figure 2. Equipment Monoprofile Medical Simulation Centre – surgical procedure – tracheostomy

Source: https:www.gwsh.pl/csm/monoprofilowe-centrum-symulacji-medycznych.html (retrieved June 25, 2022).

Figure 3. Medical Simulation Centre in Chełm

Source: https://ratownicy24.pl/nowe-centrum-symulacji-medycznej-w-chelmie-juz-dziala/ (retrieved June 25, 2022).

a self-expanding bag and face mask, and to place an oropharyngeal tube. The airway will only become clear if the head is properly tilted[4].

In relation to the specific products presented, it is worth looking at the direct actions of medical simulation. Nowadays educational challenges and technological advances have increased the use of medical simulation in education as an innovative method of teaching high quality, consistent and repeatable clinical experiences.

Experiential learning, which is part of the definition of simulation, is an active process during which the student applies knowledge and combines new information and experiences with previous ones. Practising the scenarios can be done individually, but most often it is done by a team from the same field of study or by representatives of different professions in a simulated environment, which is supposed to resemble as much as possible the real place.

Threat to health and life

It is important to note that there are 400,000 preventable deaths per year in the United States, and 3.5 million Americans experience complications during treatment. More than 100 years have passed since the Flexner Report, which identified one of the causes of this situation: educational difficulties at medical universities. Instead of long hours in lecture halls, it was proposed to learn by doing, including to enable problem-solving (Duffy, 2011)

The first attempts to use simulation in medicine have been recorded since the days of Link Trainer used in aviation, but the development of this method was hampered by technical limitations, high costs, lack of standardisation and widespread acceptance of this method of teaching in the medical community. In the early 1960s, Peter Safar, father of CPR principles and the ABC regimen, persuaded Norwegian doll manufacturer Ausmund Laerdal to develop the first mouth-to-mouth ventilation simulator. Laerdal took another advice from Peter Safar - he equipped the ventilator manikin with a spring in the torso to enable chest compressions to be performed. ResusciAnne became an icon of CPR teaching in the second half of the 20th century and the most widely used medical simulator of all time. The first heart simulator, Harvey, was introduced in 1968 at the AHA Scientific Sessions by Michael Gordon. Harvey simulated changing blood pressure, heart rate and sounds, central heart rate and breath-

---

[4]   https://www.medyczny.pl/fantom-ambuman-airway-wireless-tors-284-427-000.html

ing. ResusciAnne and Harvey have been milestones in simulation teaching for over 50 years

In 1964, neurology resident Howard Barrows described the use of healthy individuals to present disease symptoms in a standardised manner during student teaching. The search for the best means of simulation education continued, involving, among others, the Apple Macintosh to produce the computer program "Surgeon" in 1986. The program perfectly replicated aortic aneurysm surgery[5].

Anaesthesiology was the first field of medicine to identify its own actions as a source of medical errors. Since 1978, Harvard University has investigated the possibility of using airborne critical event analysis to explain anaesthesia failures. In 1985, the American Society of Anaesthesiologists established the Anaesthesia Patient Safety Foundation with the primary mission of ensuring that no patient will be harmed by anaesthesia.

In 2004, the Society for Simulation in Healthcare was established, whose main task is to standardise simulation teaching in medicine. SSH also conducts
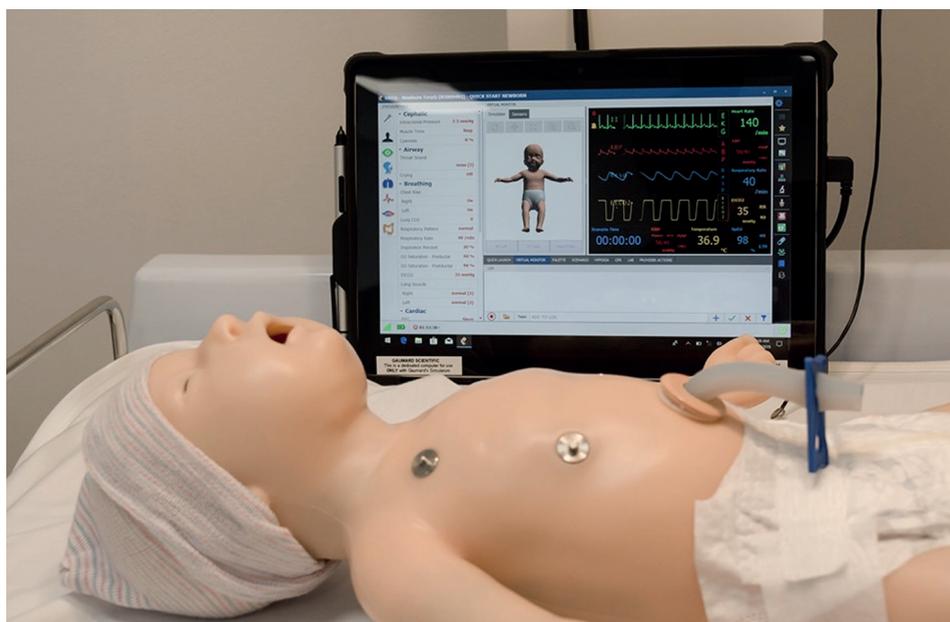
Figure 4. Equipment Monoprofile Medical Simulation Centre – Child / Neonate – Checking Indicators

Source: https://ppuz.edu.pl/zaplecze-dydaktyczne/monoprofilowe-centrum-symulacji-medycznej/ (retrieved June 25, 2022).

---

5   https://csm.pum.edu.pl/o-nas/symulacja-medyczna

scientific research using medical simulation and certifies instructors. The CAE METIman simulator started the era of advanced medical simulation in Poland in 2009 at the Medical University of Warsaw. In the following years, medical academic Centres in Poznań, Białystok and Katowice launched medical simulation Centres in order to best prepare future specialists to work with the patient[6].

The ability to learn different medical aspects affects many age groups, from children to the elderly.

Figure 5. Medical Stimulation – newborn

Source: https://www.pwste.edu.pl/2019/06/06/nowoczesne-monoprofilowe-centrum-symulacji-medycznej/ (retrieved June 25, 2022).

Dealing with difficult and crisis situations can affect the quality of the actions performed. Practice is important in medical science, sometimes it is easier to work with a mannequin and check these issues on the apparatus than to work with a real patient who is in pain.

---

6   https://csm.pum.edu.pl/o-nas/symulacja-medyczna

Medical simulation – examples

There are many examples related to stimulation. Each of them is valuable, therefore it is important to know each of these elements, as they can be helpful in your future career. Classes conducted using the medical simulation method give the possibility of better preparation for a profession in a shorter time than traditional education. Simulation provides students with very good conditions for practising and checking the level of acquired clinical skills, both technical and non-technical, with simultaneous lack of risk for the patient.

High-fidelity simulation

The basis of high-fidelity simulation is to recreate the learning environment as well as the subject of work – the simulator as faithfully as possible to the real workplace. Typical simulation rooms used in this technique look the same or almost identical to real hospital rooms with advanced equipment. They often have the same equipment, room layout or décor. In high-fidelity simulation, referred to as in situ simulation, the simulation room becomes a real workplace, the patient is replaced by a simulator or a simulated patient – actor. An important element of the equipment of high-fidelity rooms are cameras, audio-visual equipment and appropriate software, allowing to recreate the course of the scenario in order to analyse the mistakes made and constructively draw conclusions for the future.

Intermediate-fidelity simulation

Intermediate-fidelity simulation uses simulators that have the ability to reproduce basic life functions: pulse, heart rate, breathing sounds, but the simulator does not have functions such as speaking, chest movements or eye opening. Intermediate fidelity simulations are used as an introduction to simulation or to hone skills acquired during simulation.

Low-fidelity simulation

During low-fidelity simulation the main objective is to practice using medical equipment and a trainer/simulator. This equipment is intended to assist in achieving manual proficiency, acquiring a specific skill e.g. learning to place

a peripheral vascular access. Examples of low-fidelity rooms are rooms for training in resuscitation procedures or communication skills.

Medical simulation involves the use of educational equipment ranging from simple training devices, used to teach simple skills, to patient simulators that imitate humans and their reactions as closely as possible, allowing control of parameters depending on, for example, the treatment applied.

Training devices

Advanced training devices are also used in medical education, allowing for immediate assessment of the skills performed, e.g. a device for intramuscular injections that signals the wrong place of injection. The use of training devices is more common during the initial preparation for performing medical actions, for mastering a given skill, as well as for conducting examinations.

Human Patient Simulator (HPS)

The teacher who conducts the activities in the simulation room can elicit an appropriate response to the medications given, the treatment administered, or the actions taken by the students. This allows students to see the immediate consequences of their actions and experience the consequences for which they must be held accountable in real life. Improving the functions and capabilities of phantoms makes them more and more realistically reflect the physiological and pathological states of patients. The many possibilities of advanced phantoms include: photosensitive pupils, the ability to auscultate the circulatory, respiratory and digestive systems.

The student's task is to assess the patient's condition, often with very real phantom reactions such as bleeding, crying, and urination. Procedures that can be performed include intubation, alternative airway therapy, defibrillation, IV and IO access, and many other invasive procedures that most students would not experience in their education. Additionally, simulation gives the possibility to present complex or rare clinical conditions. Cases such as subarachnoid haemorrhage, spleen rupture, cardiac tamponade are some of the life-threatening emergencies that can be practised with simulators. The use of simulators allows students to frequently repeat and improve basic manual skills – specialist.

Figure 6. Surgery Patient Simulator

Source: https://www.medicalexpo.com/prod/cae-healthcare/product-79760-621491.html (retrieved June 25, 2022).

Figure 7. Human Patient Simulator

Source: https://reago.pl/pl/symulatory-pacjenta-wysokiej-wiernosci/hps-human-patient-simulator (retrieved June 25, 2022).

Computer simulation

Computer simulation allows the trainee to focus on the correct performance of activities and ensures even more effective learning. Computer simulation programs are becoming more and more advanced, using virtual reality, making it possible to recreate the history of a virtual patient encountered in the classroom during education. This area is constantly developing and improving the effectiveness of medical education.


Figure 8. Healthcare simulation

Source: https://www.healthysimulation.com/medical-simulation/vendors/audiovisual-recording-debriefing-systems/ (retrieved June 25, 2022).

Standardised Patients (SP)

Simulated patients may have specific additional equipment, e.g. a T-shirt to help simulate auscultatory events, a waistcoat to enable pleural drainage procedures or simple intra-abdominal procedures. Interpersonal communication and so-called "soft" skills are a very important element of cooperation between medical personnel and patients.

The course of the simulation session consists of three stages:

- **Pre-briefing**

  Pre-briefing also includes the time used by teachers, facilitators or staff to plan their roles before the simulation, prepare the room, equipment, simulator, time allocation etc. Prior to the start of the simulation session,

a pre-briefing is held to check the equipment and its capabilities and to present to the simulation participants the equipment available in the room, time is also provided to prepare for the start of the simulation.

- **Simulation session**

  Each simulation session carried out should reproduce the conditions of real cooperation with a patient as accurately as possible, e.g. the occurrence of situations of aggression from patients, demanding family members, etc. This is referred to as environmental fidelity. During the scenario, students acquire important skills such as interpersonal communication, teamwork, leadership, decision-making, ability to prioritise tasks under pressure and stress management.

- **Debriefing**

  Debriefing often uses audio and video footage recorded during the scenario to objectively present the activities just performed. Debriefing consists of several stages allowing each student to express their opinion and draw conclusions for the future. Analysing one's own feelings and experiences of the work performed has a great impact on the emotional sphere of students and allows them to formulate often critical but constructive assessments.

  Medical simulation is an intensively developing training method. Modern computer techniques and the availability of high-quality electronic equipment, as well as the creation of a virtual environment, make it possible to use modern methods in the process of education at medical faculties.

Figure 9. Simulation of debriefing

Source: https://www.healthysimulation.com/simulation-debriefing/ (retrieved June 25, 2022).

Medical simulation allows clinical cases to be carried out safely, reproducibly and in accordance with current knowledge standards. Simulation guarantees that every student will see and act on patients in various states of health, which is essential to become a competent doctor, nurse or paramedic[7].

Figure 10. Computer simulation

Source: https://www.mpo-mag.com/contents/view_breaking-news/2016-09-01/a-computer-simulation-to-spare-children-from-heart-surgery (retrieved June 25, 2022).

Summary

To sum up, the advantages of medical simulation include such aspects as: increased control over the accuracy of performed activities, the use of real medical equipment in simulated conditions, or practical training in invasive procedures. It is also important to constantly repeat practical skills, as well as their assessment and analysis. The important thing is that it is done with a view to your future professional career. Such classes may also be more interesting for the recipient than those focused only on the theoretical aspect. Valuable elements include allowing for errors and presenting their consequences under simulated conditions. All activities contribute to avoiding any danger to patients

---

[7]   https://csm.cm.umk.pl/wprowadzenie-do-symulacji-medycznej/

and students. The significant aspect is the implementation of the same scenario by all students and the planning of clinical education based on the needs and curriculum of the students, not patient availability or exposure to rare and complex clinical situations. In the educational process, it is also important to draw conclusions and summarise immediately after the debriefing session. In order to enable new learning opportunities, it is important to be able to create training scenarios that are very close to real situations, so that the learner can easily transfer the acquired training experience from theoretical conditions into a real-life situation in the future.

Simulation is a technique that reflects real-life experiences. An important issue is the possibility of working through real medical situations in safe conditions. It allows you to interactively recreate important aspects of the real world. In ancient times, clay and stone were used to build models of the human body to demonstrate the clinical symptoms of disease. This is not a new issue, as early as the 18th century in Paris, a "phantom" obstetrician manikin containing a human pelvis and a foetus was created to train obstetricians in birthing techniques. These types of issues resulted in lower maternal and child mortality rates. Since the Middle Ages, animals have been used to improve surgical techniques. However, the origins of modern medical simulation stem from aviation. This issue is developing and will continue to develop in the future to prepare for the challenges of the 21st century even better.

REFERENCES

Bibliography

Kalemba-Dróżdż, M. (2019). Otwarcie Monoprofilowego Centrum Symulacji Medycznej, *Państwo i Społeczeństwo*, 19, 117–120.

Duffy, T.P. (2011). The Flexner Report – 100 years later. *Yale Journal of Biology and Medicine*, 84, 3, 269–276.

Netography

Akademia Górnośląska, https://www.gwsh.pl/csm/monoprofilowe-centrum-symulacji-me-dycznych.html (retrieved June 25, 2022).

Centrum Symulacji Medycznej Pomorskiego Uniwersytetu Medycznego w Szczecinie, https://csm.pum.edu.pl/o-nas/symulacja-medyczna (retrieved June 25, 2022).

Computer simulation, https://www.mpo-mag.com/contents/view_breaking-news/2016-09--01/a-computer-simulation-to-spare-children-from-heart-surgery (retrieved June 25, 2022).

Healthy simulation, https://www.healthysimulation.com/medical-simulation/vendors/audio-visual-recording-debriefing-systems/ (retrieved June 25, 2022).

Human Patient Simulator, https://reago.pl/pl/symulatory-pacjenta-wysokiej-wiernosci/hps--human-patient-simulator (retrieved June 25, 2022).

Medical Simulation Centrein Chełm, https://ratownicy24.pl/nowe-centrum-symulacji-medycznej-w-chelmie-juz-dziala/ (retrieved June 25, 2022).

Medyczny, https://www.medyczny.pl/media/products/c97935612ecb4c98b2b9d45827895932/images/thumbnail/big_airway.png?lm=1653924007 (retrieved June 25, 2022)

Państwowa Akademia Nauk Stosowanych w Koninie, https://www.ans.konin.pl/aktualnoscieu/8373-monoprofilowe-centrum-symulacji-medycznych (retrieved June 25, 2022).

PWSTE, https://www.pwste.edu.pl/2019/06/06/nowoczesne-monoprofilowe-centrum-symulacji-medycznej/ (retrieved June 25, 2022).

Simulation debriefing, https://www.healthysimulation.com/simulation-debriefing/ (retrieved June 25, 2022).

Surgery Patient Simulator, https://www.medicalexpo.com/prod/cae-healthcare/product-79760-621491.html (retrieved June 25, 2022).

Uniwersytet Mikołaja Kopernika w Toruniu, Centrum Symulacji Medycznych, Katarzyna Betke, https://csm.cm.umk.pl/wprowadzenie-do-symulacji-medycznej/ (retrieved June 25, 2022).

Wydział Medyczny Collegium Medicum Uniwersytet Kardynała Stefana Wyszyńskiego w Warszawie, https://wmcm.uksw.edu.pl/monoprofilowe-centrum-symulacji-medycznych-dla--kierunku-pielegniarstwo-uksw/ (retrieved June 25, 2022).

Medyczny.pl https://www.medyczny.pl/fantom-ambuman-airway-wireless-tors-284-427-000.html (retrieved August 23, 2022)

Author biographies

EWA BULISZ, PHD – assistant professor at the Department of Media Communication, Institute of Social Communication and Media Sciences, Faculty of Political Science and Journalism, Maria Curie-Skłodowska University. Journalist, reporter and TV presenter. Laureate of the 2016 YOUTH AKLAUD award for professionalism in working in the media. Her research interests: media genology, linguistics, and visual communication.

JOLANTA DYNDUR, DHSc – Doctor of Health Sciences, assistant professor at the Faculty of Social Sciences and Humanities at the State Higher Vocational School Memorial of Prof. Stanislaw Tarnowski in Tarnobrzeg, where she conducts classes in the field of medical sciences and health sciences. Lecturer of such subjects as: public health, community psychiatry, health and hygiene in the family, oncological nursing. Supervisor of bachelor's theses and graduate studies. A graduate of postgraduate studies: Administration and Management for Security Health Managers at the Faculty of Law and Administration of Maria Curie-Skłodowska University in Lublin, and Management Quality in organizations according to the ISO 9001 standard at the Jagiellonian University in Kraków. Member of the University Children's Hospital in Lublin, internal auditor, specialist in the field of surgical nursing, program coordinator health education for parents and caregivers in the field of Nursing and how to deal with the child after surgery for scoliosis and Congenital hip dysplasia and dislocation. Member of the Science Committee, Training and Professional Development of Nurses and Midwives at the District Council of Nurses and Midwives in Lublin.

KATARZYNA HAŁAS, MA – PhD student at the Department of Computer Science, Book Studies and Media Education of the Institute of Social Communication and Media Sciences of Maria Curie Skłodowska University. Her research interests include media education, new media, and innovative technologies in academic education.

MICHALINA IGNACIUK, MSc – pedagogue, pedagogical therapist and diagnostician at the Psychological and Pedagogical Clinic in Gdańsk. She works mainly with children with specific learning difficulties, including dyslexia, conducts workshops for parents and teachers in the field of dyslexia and modern technologies in education. She is a PhD student of pedagogy at the University of Gdańsk Her research interests concern dyslexia in adults. She is the creator of the YouTube channel "Pedagog Michalina" on dyslexia and the use of AR and VR in education.

MAGDALENA KOZAK-SIEMIŃSKA, MA – journalist, coach, graduate of Polish studies at Maria Curie-Skłodowska University in Lublin (Master's degree), journalism at Warsaw University (two-year postgraduate course), as well as the course of human resources management in the School of Enterprising and Administration in Lublin (one-year postgraduate course). Currently she is studying Professional coaching – methods and practice in the Koźmiński University in Warsaw. She is a member of EMCC Poland (European Mentoring & Coaching Council). From 1994 to 2013, she was connected to the Lublin Branch of the Polish Television, where she was a publicist, an editor and presenter of information programs. From 2013 to the end of 2015, she was the press spokesperson for Maria Curie-Skłodowska University. Since the Academic Television – TV UMCS was established (December 1, 2015) she has been its editor-in-chief. For many years she led classes for students of journalism and public relations, as well as courses in auto-presentation, communication, rhetoric and eristic, as well as language correctness. At TV UMCS she organizes, among others, media workshops for students, school students and participants of many projects.

PAULINA NIEDZIÓŁKA, MA – senior training and development specialist at PZU; student of the University of Warsaw at the Faculty of Sociology. For 6 years, she has been a trainer of digital competences, an expert in the field of digital transformation. A graduate of BA studies in two fields: sociology and philosophy at the University of Warsaw.

PROFESSOR LIDIA POKRZYCKA – university professor at the Institute of Social Communication and Media Sciences of Maria Curie-Skłodowska University. She specializes, among others, in public relations, media economics, media education, and ICT. She has been implementing grants, including as part of Norway Grants (FSS) – Norway and Iceland, European Center for the Development of Vocational Training (Ireland) and Europlanet's RI 2020 expert exchange (Greece). National Foundation Archimedes scholarship holder in Estonia. Eduinspirator 2019 of the Foundation for the Development of the Education System, among others for the implementation of international didactic and scientific projects and implementation of innovative didac-

tic methods. Certified e-teacher, e-methodologist, e-learning expert of the Academic E-learning Association.

MARLENA STRADOMSKA, PHD – suicidologist, psychotherapist, psychologist academic lecturer, head of the socio-therapeutic facility of the Nowa Kuźnia Society in Lublin, vice-president of the Polish Suicidological Society, Lublin branch, trainer, therapist during a 4-year integrative course (currently for the 3rd year). Specialist in the Interdisciplinary Team for the Prevention of Suicidal Behavior, "Life is Worth Talking". PhD student of philosophy at Maria Curie-Skłodowska University in Lublin. Author of over 100 scientific publications in the field of social problems, work with people after a suicide attempt or threats of the 21st century. She promotes knowledge in the field of suicidology in the media, e.g. Newsweek, Onet news website, WP news website, Polish Radio Lublin, etc. The author of a series of free help guides "Strategies for coping during a pandemic and not only", published in cooperation with the ArchaeGraph Scientific Publishing House.

The book is a collection of articles devoted to innovative teaching forms, the importance of which in modern education cannot be overestimated. All texts are based upon the authors' scientific or professional experience and provide valuable tips for teachers, including easy-to-understand ideas of useful educational platforms and programmes. I recommend it to all teachers who are looking for new solutions in their work.

Prof. Lucyna Harmon, Ph.D.

UMCS
WYDAWNICTWO

9 788322 796375