

THE TEACHER IN THE AGE OF PANDEMIC

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Purpose: The aim of the article is to propose a teacher's professional model adapted to the changing conditions of students' education due to the pandemic.

Design/methodology/approach: The author conducted a pilot study using the survey method with a partially structured author's questionnaire (the survey also included open-ended questions) on a sample of 95 students from extended physics and mathematic classes in general secondary school. The questionnaire examined the problem and needs of students (in this part there open-ended questions) and students' expectations towards the teacher (structured questions) during remote education, which allowed for the preparation of a professional teacher model.

Findings: The author drew attention to the impact of external factors, including legal regulations and the created image of the teacher, on his daily work, especially during the pandemic.

Research limitations/implications: Due to the pandemic author could carry out the research only in extended physics and mathematics classes in general secondary school, where she works. In the future, research may be extended to other schools teaching students extended physics.

Practical implications: The author proposes a physics teacher model that reflects students' expectations of a teacher during a pandemic, which can also be applied at higher educational stages.

Social implications: The new model of teacher can raise awareness of the needs of young people in times of crisis and help teachers adapt to students' expectations, which would have a positive impact on the educational process and well-being of students during and after the pandemic.

Originality/value: The author proposes the teachers' professional model which meets changes in the environment such as online work and the pandemic. The model is aimed at secondary school teachers, but it can also be used by academic teachers.

Keywords: the teachers' professional model, teacher's professional role.

Category of the paper: research paper.

1. Introduction

The article presents the issues of the changing role of teachers during the Covid-19 pandemic. E-learning has changed the approach to the teaching process, both from the students' and teachers' point of view. The author proposes a physics teacher model that reflects students' expectations of a teacher during a pandemic, which can also be applied at higher educational stages. Currently, in the era of a pandemic, the need for teachers to have the ability to communicate with students through modern technologies has emerged. The lack of direct contacts with students made the work of teachers and students much more difficult and weakened interpersonal relations. Lack of contact with peers, a sudden change in lifestyle, often a student's illness or illness in the student's family, and long-term isolation resulted in many unfavorable phenomena, such as: depression among students of discouragement to learn. So what role should the teacher assume in such a difficult situation?

2. The role of the teacher

The teacher is „a person imparting knowledge to others, endowed with authority and being a role model; a properly prepared specialist to conduct didactic and educational work in educational institutions (kindergartens, schools of various types, out-of-school institutions” (Encyklopedia PWN). Article 6 of the Teachers' Charter indicates not only the tasks related to teaching, but also educational and care activities for children and young people, especially ensuring their safety during their stay at school. The teacher is to support the development of the student, educate young people in the light of patriotism, freedom of conscience and respect for every human being, as well as care for the moral and civic attitudes of students in the conditions of democracy, an atmosphere of tolerance, peace and friendship. At the same time, the teacher is obliged to independently develop and improve professionally (Ustawa z dnia 26 stycznia 1982 r. Karta Nauczyciela).

The 21st century has given people new challenges, we live in a time of political and socio-economic changes, the growing share of international trade, geographical and professional mobility, in the process of globalization, changes in techniques and technologies, changes in organizations and at the same time in the expectations of employers regarding the skills of employees. These factors oblige the school to change its approach to the education of students. The activity of students should prevail at school, learning new skills, not only knowledge, the comprehensive development of the student is important, as well as developing the ability to use technology. The teacher becomes the initiator of the students' independent cognitive content. Therefore, the task of a modern school is to support the development of students, in accordance

with the didactic and educational objectives of the European Qualifications Framework relating to the gaining of knowledge, skills and shaping social attitudes. The teacher should undertake innovative undertakings, independently design, verify and introduce specific novelties to the education process. Its task is to stimulate, provide help, advise in solving tasks and striving to achieve the set goals by students. By organizing the educational environment, the teacher becomes a diagnostician, tutor, facilitator, expert, mediator and responsible professional, and he is also to act as an adviser, guide, self-education instructor (Famuła-Jurczak, 2013, pp. 42-52), and more often Internet psychologist (Serafin, 2009, pp. 107-108). A modern teacher should have appropriate competences: substantive, psychological and pedagogical, diagnostic, planning and design, didactic and methodological, communication, media, control and evaluation of school curricula and textbooks, self-educational to fulfill his role in the profession (Strykowski, 2008, pp. 18-27). In exact sciences, the use of methods based on the development of scientific reasoning skills and supporting the independence of students by noticing important questions and looking for answers to them, changes the traditional role of the teacher and the student. In such classes, the teacher should use activating methods, shifting the focus from the teacher to the student. The recommended teaching model for science teachers is the 5E model – a five-stage learning cycle described in the IBSE methodology, based on the teacher's and student's tasks related to: involvement, searching, explaining, developing (refining) and assessing (Odrowąż, Maciejowska, Kędzińska, Ellermeijer, 2013, pp. 48-56).

The teacher should have specific values, extensive knowledge, high qualifications for the profession and broad interests. He is also expected to work well planned his own and team work, activating students and applying individualization in teaching and getting to know students, noticing and emphasizing students' achievements, rewarding and distinguishing, creating a sense of security (Kutrowska, 2017, pp. 39-40). Summarizing the role of the teacher, we can quote the sentence of B. Conklin: „a teacher is someone very special, who can use his ingenuity, kindness and inquisitive mind to develop the rare ability to encourage others to think, dream, learn, try, act” (Sana, 2010, p. 434).

3. Problems in remote education of students

The author, based on her own life and professional experiences, noticed many problems related, in particular, to the transition to distance education of high school students. In the first phase of the research, the author made the observation of the four first grades with which she carried out basic physics. In the initial period of the pandemic, remote work was difficult. The teacher herself chose various means of communication with students who did not always connect to the lessons. They were lost due to the lack of a uniform educational platform, there were cases of students who did not have access to a computer, or students who, despite

their technical capabilities, „disappeared” from the educational system. Students left their textbooks in school lockers, which they picked up in sanitary conditions within a month in classes according to the school’s schedule. In such a situation, the author decided to switch to e-textbooks in physics lessons in order to avoid classroom backlogs and be able to implement the core curriculum, and at the same time enable students to access educational materials. Students had to switch to computer work, implementation of on-line tests, and watched educational films related to the subject matter. During the lessons, at the beginning, the students could not adapt to working with the cameras turned on, they showed up in funny situations, „fooled around”, took pictures, chatted, played computer games. After some time, the students adapted to the new situation. Most of the students were satisfied with the regular lessons, tasks carried out on the electronic board and work with the e-textbook, but there were also negative comments, especially from weaker students or students with various problems in family homes, who either did not want to or could not participate in the lessons and unfortunately they had to catch up with compensatory classes in the afternoons after school, or on their own to pass the school year. The author of the thesis, based on the observation of students’ work, believes that the change of education to remote education was a great difficulty for many students. Despite having computer skills, students initially struggled to log into the educational platform and e-textbooks, and in many cases students had to be assisted individually through telephone counseling. Telephone contacts in the afternoon were also necessary to encourage and motivate students to work remotely and carry out various activities. The isolation in the homes of young people was also a great difficulty.

The needs of high school students in the second phase of the research were analyzed on the basis of a questionnaire that was carried out on a group of students from three classes with a mathematical and physical profile (the author concluded that when choosing this type of class, students were more interested in physics, which they carried out in the form of an extension). In the studied school, during the pandemic, teachers of this subject frequently changed in these classes. The students had high expectations regarding the subject matter and the form of conducting classes, they tried their best in the lessons, asked many questions beyond the curriculum, On the other hand, many students had problems with finding their place in remote education, despite the fact that they were ambitious students with a high level of intelligence. From the questionnaire, it can be concluded that most students are genuinely interested in physics according to the class profile they have chosen. They do not want to be limited only to the knowledge from the textbook, they are curious about the world and technical innovations, they want to better understand the laws of physics by learning about the application of these laws in nature and in life. It is also important for these students to link physics with other subjects at school. Many questions were directed to the teacher, going beyond the curriculum, practically on every topic discussed in the classroom. Several students also asked the teacher to organize a physics additional lessons where they could carry out more difficult tasks and issues, and they were indeed actively participating in extra-curricular activities. Approximately 55%

of students did not have problems with understanding the lessons conducted on-line, the remaining students would definitely prefer stationary education, for various reasons, especially related to technical problems related to Internet connections, or the need to establish a live relationship with the teacher. In the study, the students assessed the on-line communication with the teacher as very good and good, they especially appreciated the possibility of: asking questions and talking, keeping electronic notes from lessons, obtaining grades for tasks or tests during the lessons on-line. It is important for the students that the teacher addresses them culturally, without disrespect, with respect, nice and loudly and clearly, so that the lessons are enjoyable and the students can get involved in the educational process. Students expect the teacher to be understanding, friendly, polite, patient and kind towards them. Among the students' statements there were also indications regarding: encouraging them to their subject, not exerting too much pressure on the students, the teacher should maintain a safe and peaceful atmosphere, and at the same time control the confusion in the class, he should see another person in the student, he should not exalt himself, but approach with distance, flexibility, with a sense of humor, should listen to the student, but without establishing major relationships or interactions. When describing the teacher, students indicated such features as a positive attitude, normality, smile, no hatred, wisdom, peace, sympathy, good contact with students. It is also important for students to acquire practical knowledge useful in life, teach in various ways, accurately translate all information and answer all asked questions, encourage learning, and have an interesting story. Students do not want to be stressed, but the teacher should be educative, not too gentle, but not allowed to raise his voice, but calmly explain students' mistakes. Students would also like to be appreciated and positively assessed for the tasks performed. Most of the students agree that it is better for them to study stationary at school rather than on-line, because it is easier for them to focus on the lesson, prefer face-to-face contracts, get more out of the lesson, learn more, understand more, ask everything during the lesson, discuss with the whole class they can go to the blackboard to understand the task better, there is no disruption in communication, there is better contact with the teacher, communication is faster than on-line and without disruptions, they have a better motivation to learn, easier for them solve problems while physically at school. Students want to see the people they are talking to, but they themselves do not want to turn on the cameras in on-line lessons. Some students preferred remote lessons, saying that: I was well rested, I could concentrate better, I was less stressed when doing tasks, school and leaving home stresses me, it is more convenient, it is easier to ask a question than in the classroom, no need to travel to school. In one of the surveys, there was also a note about a hybrid solution, which, according to one of the students, would be less stressful. Analyzing the students' answers, it can be seen that direct contract is the most important for young people. Most of the students have high expectations towards the teacher – the teacher should create the teaching process, take the initiative in various tasks, participate in activities undertaken by students, while the students are not very interested, apart from a few people, in taking responsibility for their own educational process.

4. Students' expectations towards a physics teacher in selected general secondary schools

From the teacher, students expect support in every field. The teacher should emphasize the development of self-improvement skills, watch over the proper development of the student, not exalt himself and not exercise power in the educational process, but offer help when it is needed, and fulfill his role in a reliable and conscientious manner. He should not be critical of the students and of himself. The teacher should learn from his mistakes and improve his work thanks to the acquired experience in the profession. The author suggests the new roles of the teacher in the 21st century indicated in the literature (Nauczyciel pedagog...) asked respondents in the survey what the teacher should be like, with the most votes towards the role of a helper (about 45% of responses), while the guide (about 30%) and the authority and leader (about 25%) obtained more or less the same result (fig. 1).

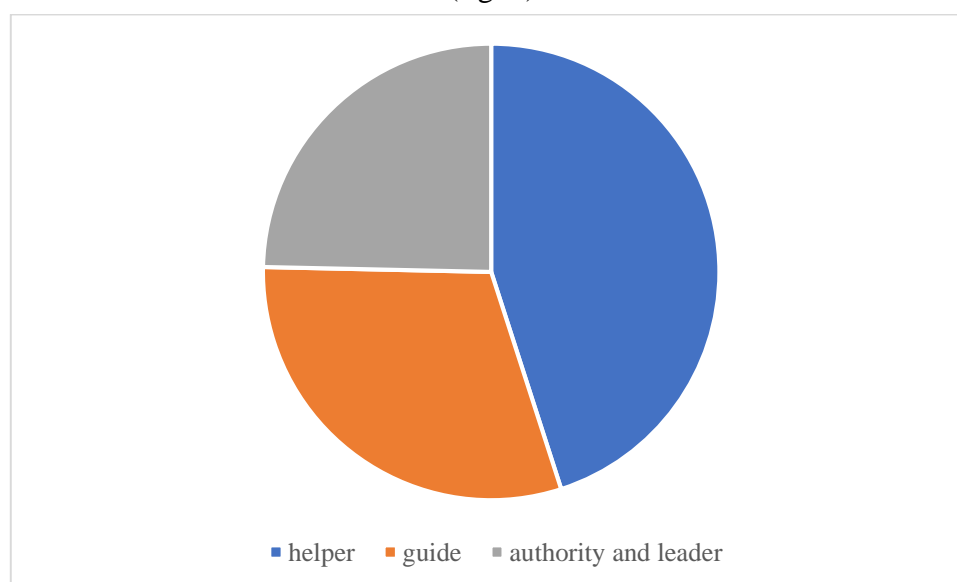


Figure 1. Answers to the question: who should a teacher be for you?

Source: Own study based on research.

Students allocated 100 points among all responses for researches presented in figure 1 and also in figure 2. The roles of the teacher (fig. 2) were adopted from the study according to E. Superczyńska (Superczyńska, 2005, p. 5).

In the eyes of students a teacher should simply be a person who works for the good of another person, is altruistic, places the good of others over his own. Students also highly appreciate the advisor teacher (his task is to observe the progress of students in various fields, he should be vigilant and perceptive, he should be able to discover the students' abilities and properly direct them in activities towards development) and the talent tutor (a teacher who properly cooperates with talented students, submits them to competitions and Olympiads, is able to adequately support a gifted student, but also a student with learning difficulties). Most high school students understand that they learn for themselves so that they can achieve

their goals in the future, but it can be concluded from the research that they approach life a bit childish, want to be protected by the teacher all the time and taken care of in many things. The person of the teacher is very important to them, so the teacher is an example for them. Learning should be fun, broaden your interests, encourage you to explore it, but in addition, according to the author, the role of the teacher is also to educate students, learn responsibility and prepare them for adult life.

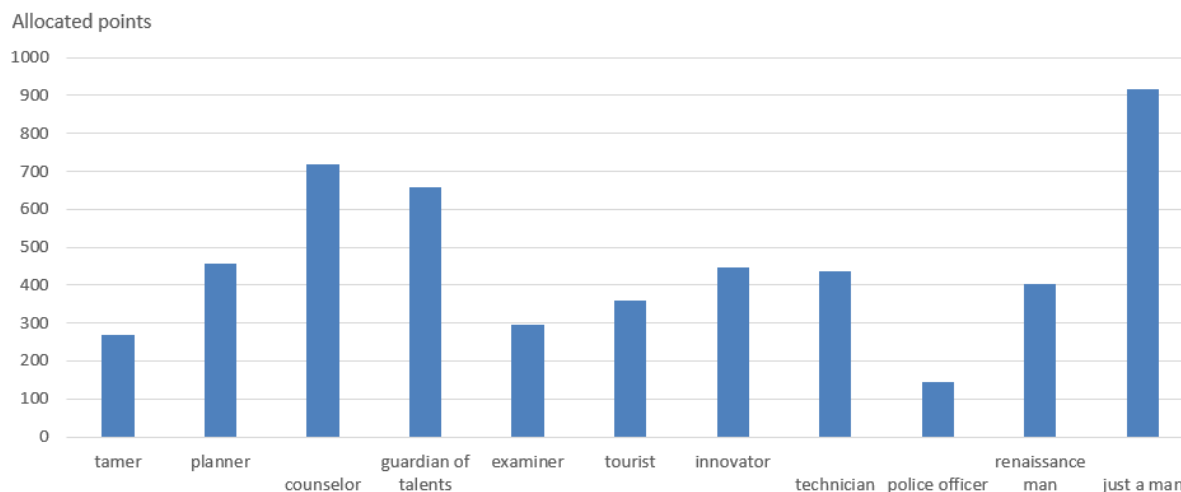


Figure 2. Answers to the question: who would you see as a physics teacher at your school?

Source: Own study based on research.

The author of the article, based on her own experiences as a high school teacher and several years of work as an academic lecturer, proposes her own teacher model (fig. 3). In the light of the current pandemic situation, which has highlighted many problems of students, according to the author, teaching should be approached in an interdisciplinary way, using a variety of skills. Reaching students, getting them interested in their activities and encouraging them to learn requires a lot of effort from a modern teacher.

Nowadays, a physics teacher should be, above all, an „expert”, should have extensive knowledge in the field of physics and related fields, so that he can conduct lessons beyond the textbook content, explain difficult content to students, or answer any questions related to the topic of the lesson. The teacher must update his knowledge by participating in scientific conferences in a given field, following interesting facts and news published in specialized journals or thematic research portals.

As an „engineer”, the teacher should be able to explain various types of laws, formulas, principles, methods of operation of various devices, discuss the use of the principles of physics in practice, conduct a series of experiments with students using specialized instruments in the school laboratory, propose the implementation of various thematic projects, explain complex tasks and make calculations. The engineer’s task is to study various problems in detail and find a number of solutions or improvements in this teaching process.



Figure 3. Physics teacher model

Source: Own study.

The „process designer” teacher also optimizes processes. He has to plan the lessons for each class himself, following the curriculum and guidelines indicated in the school documentation, as well as the amount of knowledge transferred. Lessons should be diversified by introducing various forms and didactic methods, so that students would not get bored, feel interested in the subject and motivated themselves to expand their knowledge on their own. Even the best lesson scenario can be further improved to enable better development of the student.

Remote teaching required teachers to have the ability to operate various types of IT programs, applications, the ability to work with the Internet or with various devices, such as an electronic board, camera, microphone, so the author used the concept of „IT specialist” in the model.

Collecting various information, interesting news, collecting links to websites and films in a wide range, associates the author with the profession of „information broker”, where in education the clients for whom we collect selected and properly developed knowledge will be our students.

The teacher, and especially the supervising teacher, performs a number of duties, both related to teaching, educating and caring for students, as well as administrative and organizational duties, tasks related to planning, coordinating or integrating class activities, as well as diagnosing students or organizing the educational environment. The educator leads the class team, carrying out the tasks of the „manager of the educational process”.

Work carried out at school is subject to legal provisions, norms, regulations and standards set out on laws or regulations. The teacher is responsible for the implementation of the teaching process and in periodic reports describes his work and the work of students, gives opinions about students, their behavior and skills, exercises supervision over students in the classroom, and performs advisory functions in various aspects. The supervising teacher controls the class money, which is accounted for to parents at meetings, and supervises the work of the Class

Three. The author of the work associates it with the work of an „auditor” in quality management processes.

An „animator” is a person who inspires, arouses interest in something, stimulates, encourages, enlivens, is an inspirer and initiator of activities, stimulated activity, creates circles of interest, organizes events or celebrations.

The teacher must have basic knowledge in the field of psychology, should have a good sense of observation of students, making diagnoses, giving opinions on their behavior, as well as conducting educational interviews with students and conversations about students with parents. An advertisement regarding the need to employ a psychologist teacher appeared in job offers, where this position is referred to as a new profession ([www.zawodowe.com/...](http://www.zawodowe.com/)).

A coach is a professional who specializes in helping people achieve specific goals and overcome obstacles to personal development. Such people must enjoy working with people and helping them solve problems, have excellent communication skills, be good listeners, have a positive and optimistic attitude, want to positively influence the lives of their clients, be interested in their own development and the development of others ([www.intensive-group.pl/...](http://www.intensive-group.pl/)). A school teacher also deals with the development of students in a similar way, for example through activities for career counseling at school.

The model proposed by the author was developed in a pandemic, when contacts with students were difficult and the work was carried out online. However, new experiences and skills gained by the teacher, and thus a new approach to the student, should also be used in the period of stationary work.

Summary

The pandemic disrupted the work of teachers and students, introduced many changes for which no one was fully prepared. Many teachers left their jobs during the pandemic, they were unable to switch to their new roles. It is a significant effort to learn how to use new technologies, no meetings with students „face to face” during lessons, a sudden change in the way of conducting classes. Not only did the students have many problems during the pandemic, so did the teachers, although they should support the students and help in a difficult situation. According to the author, the model could be applied in practice, provided that teachers are properly prepared for new roles through interviews, appropriate training and workshops, and analyzing good practices. Both teachers and students must learn to function in the new reality so that the educational process is effective and allows young people to pass their high school diploma, get into University and find their dream job, despite the emergency situation around the world. According to the author, the school should provide students with stability, gives a sense of security and support, because students, despite their young age, also face a crisis and often the tragic consequences of a pandemic, such as depression or suicide attempts.

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