The role and functions of a teacher in distance learning

Nina Kapitonova1*, Yulia Karagodskaya2, Anzhelika Gadakchian1

1Don State Technical University, 344003, Gagarin Sq., 1, Rostov-on-Don, Russia
2Southern Federal University, 344006, Bolshaya Sadovaya Street, 105/42, Rostov-on-Don, Russia

Abstract. Technology, in the year 2020, has attained its utmost use by becoming the solution for people across the world in all sectors. Despite the use of applications like Zoom, Google Meet, Kahoot, and Google Classroom, teaching language online has proved to be a challenging task without the presence of a live teacher. This paper aims to throw light on the technological gap and its pace that has not matched the necessity of the period. The analysis of an example from the English Language Teaching will not show what technology lacks in this field, but also serve as a guidance for the developers of future artificially intelligent software and applications. As teaching and computing are two different fields, it is their searchers’ duty to bridge the gap by meticulously explaining the limitations in the currently existing applications and the necessary features in the yet to be developed ones.

1 Introduction

In modern conditions of European integration of domestic education, fundamental changes are taking place in the pedagogical activity of a teacher of a higher educational institution. In the system of higher education, a new type of distance learning teacher—a tutor—is being formed.

With the introduction of distance learning in higher educational institutions of Russia, the number of scientific studies and publications devoted to the problems of distance learning has significantly increased. The analysis of scientific papers shows that a significant amount of scientific research has been carried out on the issues of distance learning, reflected in the publications of A.A. Akhayan, T.P. Zaichenko, N.Yu. Marchuk, E.S. Polat, A.V. Khutorsky.

Thus, the famous scientist A. Khutorskoy believes that distance education is carried out with a predominance of distance technologies in the educational process, as well as information resources and educational platforms of the Internet.

2 Methodologies

* Corresponding author: neonilak@inbox.ru

© The Authors, published by EDP Sciences. This is an open access article distributed under the terms of the Creative Commons Attribution License 4.0 (https://creativecommons.org/licenses/by/4.0/).
Distance learning, according to E. Polat and many others, is defined as a type of open learning using computer and telecommunication technologies that provide interactive interaction between teachers and students at different stages of training and independent work of the latter with the materials of the information network, most of which are prepared by teachers. Without the structure of regular classroom meetings and direct external regulation by the teacher, students’ learning more strongly depends on meta-cognitive as well as internal and external resource-related strategies that help them to plan, monitor, and regulate their learning processes in a goal-oriented way [3, 4]. Closely related, not only teachers but also students require basic digital skills in order to make use of online learning opportunities. Digital skills encompass being able to use digital technology to search for, process, manipulate, and create information and data as well as online communication and collaboration skills [5]. International large-scale assessments, however, indicate that both students’ and teachers’ digital skill levels vary considerably at secondary school [6, 7]. Accordingly, also at higher education institutions, the student population can be expected to be highly heterogeneous in terms of their preconditions to profit from online teaching and learning.

We agree with scientists who believe that distance learning is learning in which the main part of the educational material is provided to the student using modern information technologies: computer technology, multimedia and various teaching systems. So, by the distance learning system, we mean a pedagogical system that includes the design, organization and conduct of the educational process with the help of new pedagogical and information technologies in the context of the temporal and spatial separation of learning subjects.

The distance learning process presupposes conducting systematic classes with students, methodically competent use of the developed content for distance learning, means of communication and educational resources of the Internet, as well as providing technical support for the educational process from the teacher. The technical possibilities for distance education today are of great variety and make it possible to solve almost all organizational issues. But the methodological work of teachers in the context of distance education is not of high quality [8]. From the analysis of the popular applications used for teaching online, it is evident that most of those are satisfying the basic needs and that they could just be a temporary solution. With this positive push from the epidemic towards the technological world, it should be going higher and not getting down the ladder back to old-school methods. With some help from the science, we could easily take this up to the next level. Zachary Pardos, an assistant professor at University of California, Berkeley, says that, while preparing an online course, auto grading could be enabled for problems, or even for essays. However, in order to devise adaptive learning, additional personalization needs to be done from the technological side. If human teachers were to regularly assess and change all these as per each student, they would soon be exhausted due to the colossal task [9].

According to L. Janssen [10], the available technological advancements have the potential to exceed mere teaching. With the assistance of Artificial Intelligence, online courses could also observe the way students learn. Simultaneously, they could survey the type of tasks and thinking that hold the students’ attention, and also the sort of problems accordingly to fit every student’s learning style. Most important of all, this could be done with more accuracy than any other usual face-to-face methods. The examples and possibilities for the future of technology in education in an article [11]. As per the suggestion, bringing social media in education could allow learners and educators to post their thoughts, ideas, and comments in an interactive learning environment, where students
could follow influencers and learn from their posts. Another idea of hers is to create better
digital simulations and models that could aid teachers teach ideas and concepts that are
normally not demonstrable in a classroom.

But, in our opinion, in the pedagogical literature, the problem of the various roles and
functions of a tutor in the distance learning system is insufficiently illuminated.

With this in mind, the purpose of our article is to determine the place, role and functions
of a teacher in the distance learning system.

Within the framework of the traditional educational process, the main link in ensuring
the high efficiency of teaching is the teacher, whose activities are of high social
significance and occupies one of the central places in the formation of the student's spiritual
culture. The work of a teacher of a higher educational institution is a conscious, purposeful
activity for the training, education and development of students.

Distance learning imposes special requirements on the level of professional training and
qualifications of tutors - teachers involved in organizing and conducting distance courses.
The tutor (teacher - consultant) organizes the effective study of the course, conducts
seminars and advises students, checks and comments on written assignments. The
specificity of distance learning puts forward requirements for the teacher - tutor that are
significantly different from the traditional ones, both in personal qualities and in teaching
methods.

Tutoring activities were included in various historical contexts of university education,
in particular, at the universities of Oxford and Cambridge, the tutoring system provided for
regular, individual - group lessons of a tutor with students who were attached to him for the
entire period of study at the university. The concept of a "tutor system" was also used when
they meant various forms of communication between the university administration and
students. A tutor, as an element of the training system, carried out his professional activities
during the academic year, and was also responsible for the student's life at the university. In
England, the tutoring method of teaching and upbringing was recognized as extremely
effective and has retained its position up to these days. In modern Western universities, a
tutor acts as a developer of educational projects or programs, as a consultant in the field of
educational services.

The tutor creates an educational environment, allows the student to gain knowledge and
skills, to solve real problems in their activities. At the same time, the tutor helps to make
the most efficient use of various educational materials and Internet resources. Undoubtedly,
a teacher in a distance learning system must have the skills to use Internet technologies, e -
mail, computer training programs, chat technologies.

Modern pedagogical technologies embedded in traditional education are not fully
satisfactory in distance learning. Therefore, it is important for a distance learning teacher to
be proficient in information and communication technologies. Information and
communication technologies determine the development of new organizational, material
and technical, educational and methodological, software; sites as elements of the
information environment for organizing training. Information and communication
technologies provide opportunities for improving the educational process, improving the
quality of training of future specialists, enhancing cognitive activity; choice of forms and
methods of teaching; formation of information culture, deepening of interdisciplinary ties.

Compared to the traditional form of education, computer technologies have the
following advantages:

- a high level of motivation of the educational process;
- the ability of the computer to instantly respond to the information entered, which has
found its application in the creation of test programs;
activation of cognitive activity. The computer is better suited to the principles of individual learning, since students can themselves determine the direction of educational and search activities; the ability to process, use and store a large amount of statistical information for the analysis of various processes; clarity of presentation of educational material; the graphic capabilities of the computer allow you to create various teaching aids, textbooks, dictionaries necessary for training. And with skillful use of a computer, the teacher must do it himself; the possibility of interactive communication through computer networks, local and global Internet networks. The value of the Internet for education is twofold: maintaining communication with subscribers around the world and accessing remote sources of information and international libraries; the computer course is very effective for distance and correspondence forms of education; the possibility of improving the professional level of a teacher. A modern teacher must have a number of competencies, must comply with the trends of the world development and constantly improve his qualifications not only in the subject area, but also in pedagogical and technological ones, in order to transmit knowledge to his students in different new ways.

We believe that the roles of a tutor are constantly changing and the choice of his role position depends on many factors. In addition, there is a hierarchy of professional roles of a tutor, within which the tutor advances depending on the student acquiring a certain degree of independence and activity in the learning process. Students with no distance learning experience, or those whose past experience has been in the dominant role of the teacher in the learning process, require the tutor to act as a translator of knowledge. A tutor moves from the role of a translator of knowledge to an expert, and subsequently a guide and facilitator, depending on how quickly the student's degree of independence and his ability to take responsibility for his own educational trajectory grows. Continuous development of tutors is ensured through the formation of a professional tutor environment. A tutor has the opportunity to interact with colleagues by participating in permanent Internet conferences, visiting schools for tutors, various seminars, author's seminars, conferences. Using these diverse forms of interaction, tutors exchange experiences, learn about new courses, and create a common vision of approaches to teaching and assessing knowledge.

The level of competence of a tutor depends, first of all, on previous teaching experience, as well as on his personal characteristics. Students' preferences are influenced by: previous learning experience, especially if it was formed in a traditional learning environment; the learning style that the student prefers; personal characteristics; experience of professional activity. All this forms certain advantages of students and affects the level of motivation and readiness of the student for an active position in the learning process.

Distance learning programs offered by educational institutions differ in the level of complexity. Complex distance learning programs are characterized by a high level of interactivity and technical support, requiring the tutor to master higher-level roles such as a guide and facilitator.

The organizational context is related to the requirements of the particular educational organization in which the tutor works, as well as to its history and culture.

So, in the modern educational environment, the distance learning system functions at the crossroads of several areas of activity: business (from the point of view of a student who is a customer of a certain educational service and a teacher who provides this service), consulting (from the point of view of counseling a student by a teacher or educational specialist), training (from the point of view of training teachers or educational specialists).
Look at the figure 1 – the multifaceted role of the tutor and the figure 2 – the functions of the tutor.

According to S.A. Shchennikov, the functions of a tutor include the following: managerial, diagnostic, goal-setting, motivational planning function, communicative, controlling, reflexive, methodical.

Look at the figure 3 – the actions required for the tutor.

Fig. 1. The multifaceted role of the tutor

Fig. 2. The functions of the tutor

The diagnostic function is associated with the participation of the tutor in the implementation of analytical activities. This function assumes the following actions in figure 4.

1. designer (designs forms of organization of the educational process for the purposes and content of the course being studied);

2. a consultant teacher (acts as an interpreter of knowledge and professional experience, forms skills and abilities, on the one hand, gives recommendations to students on the effective assimilation of course materials, on the other hand);

3. manager-organizer (organizes joint educational activities of students, manages the interaction of students during training, coordinates the educational process, solves some organizational and administrative issues);

4. a facilitator (stimulates independent cognitive activity and creates favorable conditions for learning).

Fig. 3. The actions required for the tutor

Organizational - the tutor organizes the educational activities of students.

• Informational - he takes care of the assimilation by students of a certain theoretical content, set in the course materials.

Communicative - the tutor provides communication between the students and the tutor and among themselves.

• Developing - a tutor activates the cognitive activity of students, contributes to the personal development of students.

1. study of the initial data about students and their individual characteristics (for example: learning style, dominant thinking style, level of development of abilities, etc.);

2. determination of students’ attitudes towards learning, their needs, motives, expectations;

3. diagnostics of the degree of assimilation by students of the content of the course being studied.
Fig. 4. The functions of the tutor’s analytical activities

1. analyze the purpose of the distance learning model in which it works and define the tasks that students must solve;
2. predict the most typical difficulties and problems that a student may face in the learning process;
3. formulate the expected results of students' activities;
4. align learning objectives with student expectations and opportunities to achieve them.

Fig. 5. The functions that tutor must solve

1. to form an attitude towards productive, mainly independent activity;
2. create an atmosphere of interest, trust and support in the group of students;
3. stimulate learning motivation with various interactive teaching methods.

Fig. 6. The motivational functions.

1. formation of strategies and tactics of personal activities with students;
2. determination of the sequence of actions in accordance with the goals and expected results;
3. development of the structure of classes with students as a completed cycle of activities;
4. distribution of class time, taking into account the purpose, content and learning technologies, as well as the characteristics of the group (taking into account the individual learning style of students).

Fig. 7. The planning function provides for the ordering of the actions of students and the teacher according to the learning goal and the implementation of the following tasks, presented in figure 7.
The communicative function is the most important at the first stages of interaction between a tutor and students when forming a group, establishing relationships between a tutor and students and between the students themselves. This function assumes the implementation of the following tasks:

1. to organize joint activities of students in a group on the basis of cooperation, agreeing on the goals of group activities and ways to achieve them jointly;
2. to form a favorable emotional climate, an atmosphere of support and mutual assistance, a sense of belonging to the group in the group;
3. to carry out an ongoing dialogue with students;
4. to develop and maintain relationships with other tutors, with course authors and with the administration of the educational institution.

The monitoring function provides for:

1. analysis of students' written assignments and assessment of their quality;
2. correction of students' activities based on the results of checking written assignments;
3. monitoring written assignments;
4. evaluation of the achievements of individual students and the group as a whole on tutorials.

The reflection function is implemented in the following tasks of the tutor's activity:

organization of the analysis of the tutor's capabilities; organization of reflection of personal activities and communication of the tutor in order to identify his individual features.

3 Results

The methodological function is realized in the following activities of the tutor: creation of the necessary means for organizing the educational process; development of various control and diagnostic techniques; development and description of copyright technologies, methods of analysis and description of their own tutoring experience; the embodiment of the effective experience of other tutors into personal activities.

4 Conclusions

So, a teacher in the distance learning system, traditionally outlined in the scientific literature as a tutor, has certain similar and distinctive characteristics with the same type of professional activity in the plane of traditional education. At the same time, the tutor implements certain semantic, functional, personal characteristics in the distance learning system, which together constitute an integral technology of the tutor's professional activity in the space of distance education.

In our opinion, the problem is probably not that the technology is not advanced enough but that it has not been used adequately for assisting pedagogy. The expected advancements in technology for online education is not a necessity of the future but of the current period.
It is a fact that the teachers and students struggled to get into the habit of using online means for education. Some still do find it tedious and look forward to going back to face-to-face classes. The reason behind this is the lack of training for teachers and students as to how to use technology effectively. This has been one of the main reasons for educational institutions, teachers, and many organizations for stalling the use of ICT in their daily lesson plans. But now that they all have been introduced to it, they should feel encouraged to continue this way. Regrettably, the added work-loads and difficulties simply made them feel right about their avoidance of technology so far. Janssen stresses on the need for the teachers to be involved in planning for the technology to address their instructional needs. Failing which, they would stop encompassing digital technologies as soon as things return to normal. This research is a reminder for the application developers to focus on the essential aspects recommended by teachers and researchers in the field of pedagogy as well. "University educators perhaps need to temper enthusiasm for what might be achieved through technology-enabled learning and develop better understandings of the realities of students’ encounters with digital technology." The answer for the question whether a machine could ever replace a teacher is not a matter of 'could' or 'could not'. The machine WILL replace a regular teacher in due time. But it is the researchers’ and developers’ duty to make sure that nothing has been compromised, and that the replacement is for the best.

There is no doubt that sufficient internet access, learning management systems, as well as adequate software and hardware are at least conducive to a successful shift to online teaching and learning. In addition to personal and other institutional factors, infrastructure turned out to be important for a high level of initiated digital learning activities and the successful implementation of remote teaching. In their case-study with engineering students, Iglesias-Pradas and colleagues report a significant increase in students’ academic performance during emergency online learning compared to traditional face-to-face instruction emphasizing the importance of supportive organizational factors over and above digital equipment. Along these lines, the provision of infrastructure is not sufficient, teachers require educational and technical support for online teaching and learning to be effectively implemented. The existence of a coherent and comprehensive strategy of the university regarding online teaching and learning—a strategy for true digital transformation—might be an even more important distal factor comprising, coordinating, and orchestrating other distal factors on the institutional, organizational, and administrative level and enabling (or hampering) more proximal factors on the teacher- and student-level that influence effective online teaching and learning. Transparently communicating the strategy and setting up clear expectations on the part of the institution can in general be considered essential for increasing acceptance and commitment towards necessary behavioral changes. How this strategy should look like might depend on the requirements and resources of the university as well as the culture it is embedded in. In line with Scherer, the surrounding culture could be conceived of as an even more distal contextual factor contributing to online higher education. The respective culture can be expected to influence how university staff and students approach challenging situations, their activities, practices, and, ultimately, which artifacts are established.

4. Conclusion The integration of digital technology into university teaching and learning bears high potential to create cognitively engaging learning opportunities—not only in the current or future crisis situations. Due to the greater temporal and spatial/geographical flexibility, online learning environments also allow more diverse students with different constraints (including parenthood, a remote place of residence, or part-time study) to profit from potentially high-quality university instruction.

References


