Krystian Tuczyński

The behavioral component of academic teachers' attitudes towards remote education – the intercultural context of education[1]

Abstract: The article is an attempt to identify the tendencies displayed by university teachers towards the adoption of e-learning solutions in the academic environment. The paper is divided into four main sections. Section one explains the theoretical assumptions behind remote education and the role of the university teacher, with behavioral component being considered the core element. Section two describes the research methodology and defines the original research tool used to measure the scale of concrete actions taken by university teachers in their embrace of e-learning. On the basis of the analysis of the results, the importance of further education of academic staff for the improvement of the quality of education was demonstrated, regardless of the place of residence or professed values. The concluding section sums up the findings and puts forward recommendations for higher-education institutions in the area of remote education in the academic environment.

Keywords: e-learning, remote education, e-learning, intercultural education, university teacher, component attitude

Introduction

Cultural diversity is inherent in modern societies. The multiplicity of cultures within a globalized world is becoming an everyone's natural environment today, also in the context of the educational environment (Welskop, 2013).

Looking at how universities are perceived today, regardless of their values

---

[1]   The article was developed in cooperation with the Center for Innovation, Technical and Natural Knowledge Transfer of the University of Rzeszow at the E-learning Laboratory

compasses teaching activities that essentially rely on e-learning technologies (Borba, Askar, Engelbrecht, Gadanidis, Llinares and Aguilar, 2016).

E-learning embedded specifically in the academic context has been divided into three key models, which are: synchronous, asynchronous, and mixed learning (Pachisia, 2022).

Synchronous learning is one that occurs in different places at the same time, where participants meet on a specially designed platform on a scheduled date (Hrastinski, Keller and Carlsson, 2010). Currently, the software most frequently used for this purpose is Microsoft's Teams. Because it is a web-based system, the installation of additional tools is not required, and once uploaded, the content is available for users at any time (Raheem and Khan, 2020).

Asynchronous learning, meanwhile, occurs in different places at different times. The benefits include time flexibility for students and constant access to learning materials (Ong, Lai and Wang, 2004).

The mixed model is a combination of the two previous ones, that is synchronous and asynchronous (Moebs and Weibelzahl 2006).

As for academic universities in Poland, the so-called *hybrid education*, referred to in the literature as *blended learning*, is most often opted for, as it blends elements of traditional education with those of e-learning (Albiladi and Alshareef, 2019).
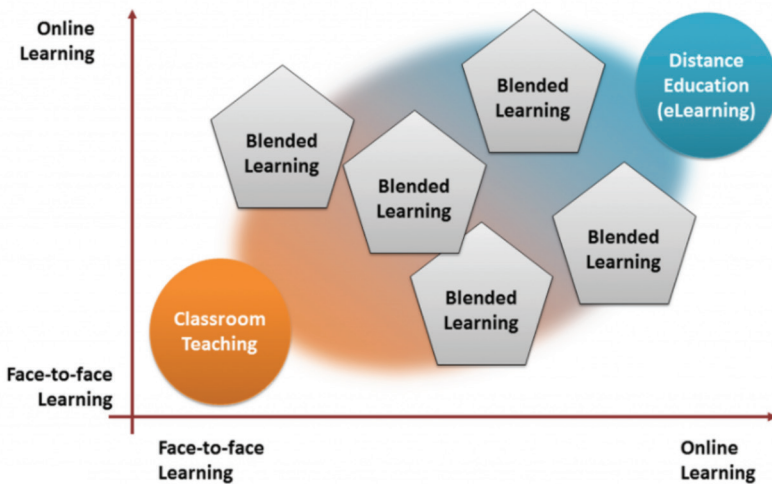

Figure 2. Graphical interpretation of the prevalence of traditional education, e-learning and blended learning (internet1).

or culture, a number of significant shortcomings in the course of the teaching process immediately arise (Szempruch, 2021). In many environments, a belief is also common that the university structure, as it is commonly known, is becoming outdated and changes should be made to reverse this process (Halim, Yusus and Yakob, 2021). The dysfunctions of university-teaching systems are a clear signal to seek and implement alternative approaches to education, with technological advancement over the years having exposed these deficiencies more than ever (Johnson, Jacovina, Russell and Soto, 2016).

A solution to the challenges faced by the academic community in Poland may lie in the use of information technology in curricula as an alternative form of education, known as remote education, distance learning or e-learning. This type of teaching is already used in most European countries at every level of education, from primary to higher (Alharbi and Drew, 2014).
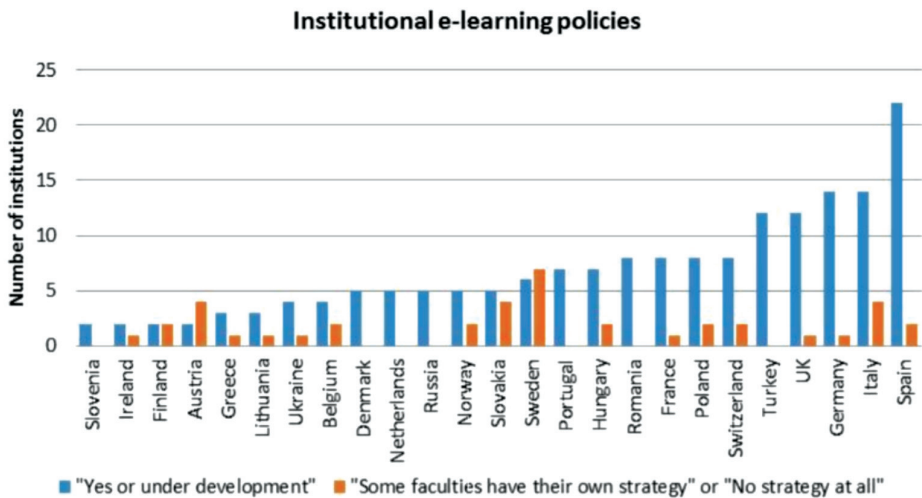
Institutional e-learning policies

Figure 1. Comparison of European countries using e-learning (Gaebel, 2014, p. 23).

Regardless of the culture, language or place of residence, e-learning is a valuable supplement to the traditional form of academic education (Gutierrez-Esteban, Alonso-Diaz, Smyrnova-Trybulska, Capay, Ogrodzka-Mazur, Goncalves and Gajdzica, 2015).

When it comes to literature analysis, let it be briefly noted that e-learning is commonly defined as the intentional use of ICT in teaching and learning (Najdu, 2003). In more general terms therefore, remote education en-

To supplement our deliberations on the essence of e-learning in the educational process at university level, a theoretical study was conducted exploring the role of the university teacher in this particular context.

Intercultural role of the university teacher in e-learning

The role played by teachers in traditional education has been studied so extensively that pretty much anyone could name at least a few tasks a teacher nowadays is expected to perform (Allo, 2020). Regardless of the local culture or values, teachers should have a solid pedagogical background, substantive preparation, and the awareness of their full responsibility for every didactic activity they choose to embark on (Guerrero, 2010).

The teacher should be a culture critic who changes and modifies culture. The teacher's task is to prepare all students, regardless of their origin and values, for functioning and interacting in social reality. It is important to reject the awareness of the dominance of the culture of the majority over minority social groups (Nikitorowicz, 2009).

Moreover, a teacher should be the so-called cultural intermediary, who is distinguished by: interactivity in the educational process consisting in a calm, devoid of violent emotions reacting to the attitudes of others, the ability to cooperate, negotiate, jointly solve problems, empathy and the ability to behave appropriately in new situations (Zawadzka, 2004).

The 2020 pandemic has greatly accelerated the embrace of e-learning technologies, a fact which triggered significant changes in the role of the university teacher as well (Mishra, Gupta and Shree, 2010). The conventional learning system that had existed for many years turned into an online learning system to maintain the learning process (Kurnawatti and Noviani, 2021). This global crisis caused by the pandemic has brought education in all countries into the digital world. Due to the socio-cultural changes caused by the COVID-19 pandemic, many schools have started the educational process using the Zoom mobile video program.

In recent months, one has had a chance to witness how the lecturer's mode of work is not set in stone but rather needs to adapt smoothly to the circumstances (including those concerning education itself). The students who have less ability to self-regulate or study autonomously struggle with the absence of a teacher providing in-person support (Rashid and Yadav, 2020). University teachers can no longer rely solely on the transfer of ready-made information, but they must also teach students to process it to form on its

basis a cohesive whole (in line with the cognitive theory) and to selectively draw that information which corresponds to their own conceptual system (Komalasari, Fitriasari and Anggraini, 2021).

Active learning is explored from a constructivist perspective in which students adopt an analytic approach to questioning and problem solving (Scott, 2011).

Therefore, one should think of a university teacher more as a guide who applies in their work a truth-seeking learning model. The role of teachers becomes more challenging and, thus, the heavy burden of teachers requires such skills along with duty and responsibility (Huda, Jasmi, Mustari and Basiron, 2015). As such, teachers should act as "mediators" who implicitly adopt for their students a certain learning strategy, certain ways of solving problems, and a certain approach to the independent discovery of knowledge. A teacher is the link of judgment and motivation with a student (Urhahne, 2015).

Among the many approaches recommended for university teachers in the online environment, several authors point out the following: establishing and managing connections within the group while providing constructive feedback; keeping the motivation running high among the users of e-learning platforms; organizing the work of the entire team rather than individuals; sharing experiences and promoting their exchange between participants (Rakic, Tasic. Marjanovic, Softic, Lüftenegger and Turcin, 2020). In addition, teachers should keep in mind that students nowadays are a product of the information society – they have an innate grasp of e-learning tools which they use on an everyday basis (Mahoney and Hall, 2017).

Having said that, the teacher's role remains very important, not to say crucial, in the remote environment as well. The problem arises when teachers, relying on their extensive educational experience in the traditional form, intend to translate it directly into e-learning. The transfer of teaching methods and resources without proper preparation (such as through the implementation of refresher training) has a significant impact on the quality of the teaching process as a whole (Ogrodzka-Mazur, Szafrańska, Malach and Chmura, 2017). Hence, the main task for teachers is to constantly update their skills both in terms of the function of information transfer and of shaping appropriate attitudes along the way. Open learning enthusiasts believe that every individual should have access to high-quality educational or bibliographic sources, and the barriers preventing this access should be eliminated.

Summarizing the deliberations on the role of university teachers in e-learning, five key areas of activity can be distinguished:

– teaching process implementation,
– contact with students,
– academic advancement,
– obtaining source materials,
– teaching process management.

These five elements constitute a practical basis for pursuing research into the self-declared behaviors of university teachers in relation to the online form of education.

Behavioral component of university teachers' attitudes in the context of e-learning

In many life situations, including professional work, human attitudes are both manifested and shaped. In the educational environment, the correct course of educational activities is essential and the attitudes of understanding and tolerance are necessary, leading to a dialogue based on mutual respect (Nikitorowicz, 2009). The initial concept of attitudes, developed by scholars in the 1920s and 1930s, viewed them as evaluations, ranging from positive to negative, that efficiently encapsulate prior life experiences and direct thinking and action (Howe and Krosnick, 2016). Against the backdrop of the conducted literature analysis, let us point out that attitude is "a relatively permanent structure (or a disposition for such structure to emerge) of cognitive, affective and behavioral processes in which a specific approach to a given object is expressed" (Santillán, 2012). On the basis of that definition, three main components of attitude seem to stand out, namely: the cognitive, affective, and behavioral. In this study the last one is going to be examined (Albarracin and Shavitt, 2018).

The literature analysis shows that an attitude is an action plan geared towards a specific attitude object (Olson and Zanna, 1993). Such a plan may contain merely general indications for the course of action or may consist of clearly defined and outlined conditions under which a given action is to be carried out. This component is therefore a teacher's specific tendency to act towards the attitude object (Estrada, Batanero and Lancaster, 2011).

To elaborate on this further, one may want to cite the definition suggested by S.J. Becker, who defines attitude as an intention to act towards a specific attitude object (Becker, 1984).

Looking at all these terms, the following definition was developed for the purpose of this study: *the behavioral component of an attitude defines the*

behavioral tendency (understood as either taking or avoiding specific actions) among university teachers with regard to the use of e-learning technologies in the educational process.

As part of the assumptions, several relevant scales were indicated. The first scholar to have truly delved into the scientific ins and outs of the behavioral component was E. Bogardus, who designed what is now known as the Bogardus social distance scale (Wark and Galliher, 2007). It allows determining a behavioral tendency, i.e. a measure of either approaching or avoiding a specific attitude object. Particular focus in Bogard's research was on measuring attitudes towards ethnic groups and consisted in presenting respondents with seven statements to which they were then asked to assign a score from 1 to 7 to denote the extent to which they would accept each group (Bogardus, 1925).

Knowing the particularity of the research, these scales could be a springboard for developing our own research tools the assumptions of which have been detailed below, in the methodological section.

Methodology of research

The research period spanned from October 2018 to March 2020 as a part of the Poland's National Center for Research and Development project *A Single Integrated Program of the University of Rzeszow – the path to high quality education.*

The goal was the theoretical and practical preparation of university teachers for conducting classes with the use of e-learning methods and techniques. A separate training program was developed on the basis of the current needs to boost teachers' didactic and computer skills, and concerned the use of e-learning tools by the University of Rzeszów teachers.

A total of 429 university teachers from four departments: of Social Sciences, Humanities, Medical Sciences and Natural Sciences, were pre-selected to participate. However, to make the study more reliable, the study group was narrowed down via importance sampling to 320 respondents (80 faculty members per department).

As a result of the random selection, the following stratified distribution of respondents was obtained, broken down by the employment unit and gender (Table 1).

Table 1. List of the respondents by unit/college as a result of stratified selection

Unit	Female	Male	Total
College of Social Sciences	48	32	80
College of Humanities	59	21	80
College of Life Sciences	57	23	80
College of Medical Sciences	45	35	80
Total	209	111	320

On the basis of the data, it can be noticed that the group of women surveyed is almost twice as large as the group of men, which is fully in line with the distribution of academic teachers at the University of Rzeszów.

The breakdown of respondents by age and gender is equally important (Table 2).

Table 2. Age and gender breakdown of the respondents

Age	Female	Male	Total
Up to 35 years (early adulthood)	35	20	55
36–55 years (middle adulthood)	148	73	221
55 years and above (late adulthood)	26	18	44
Total	209	111	320

The selection of respondents by age was determined on the basis of the developmental stages of an adult, proposed, among others, by R. Havighurst, D.L. Levinson and E.H. Erikson.

The respondents aged 36–55 (middle adulthood) constituted the largest research group. The smallest number of respondents, only 44, were over 55 years old (late adulthood), and there were 55 in the youngest group, not exceeding 35 years of age.

The main research method was chosen as the Student's t-test for dependent samples, which can be used to calculate the so-called significance coefficient p indicating statistical significance between the initial test and final test results. The study also used standard deviation, indicating how far the results are dispersed from the mean. The lower the value, the more consistent the results are within the specified range. An important statistical apparatus used in the authors' own research was also the coefficient of variation, which can be used to determine the dispersion of the results of the answers in the group

of respondents. In addition, the study used the median, understood as the middle number in the ordered non-decreasing sample.

The research intended to determine behavioral tendencies (a behavioral component of the attitude) of university teachers towards e-learning. The research process was carried out at the first and last meeting with the respondents. This procedure was aimed at defining the academics' initial action plan towards e-learning.

The main objective of the research was to determine the relationship between the behavioral component of the attitude of university teachers towards e-learning and the implementation of relevant distance-learning training.

The behavioral component of university teachers' attitudes was examined using a tool in the form of a questionnaire *The Scale of University Teachers' Behavior Tendencies towards E-learning*. The questionnaire was split into five categories corresponding to academics' tasks in terms of e-learning (as explained in the theoretical section), each consisting of five statements to define the measure of either approaching or avoiding a specific aspect of academic e-learning.

The tested ranges concerned, respectively:
– teaching process (implementation or avoidance of teaching via e-learning technologies),
– communication (contact with students through e-learning technologies or traditional contact),
– academic advancement (scientific work supported by e-learning technologies or only traditional form of career advancement),
– obtaining source materials (transfer of knowledge via e-learning technologies or in traditional paper form),
– learning process management (using an e-learning platform to teach or avoiding it).

The selected categories correspond to both the training attended by university teachers and to the responsibilities expected from them in the context of e-learning.

Research results

The results were analyzed against the scope of university teachers' activities in relation to the novel form of education which is e-learning. Using the reported disparities of responses (in the initial and final measurement), the change in behavior tendencies (behavioral component) was calculated.

The formula denoting the change in behavior tendencies is expressed as follows:

$$C_c = F_m - I_m$$

Change in behavioral component value

C_c – change in component level value, F_m – final measurement, I_m – initial measurement

For each area of activity, five values were assigned to determine the measure of taking or avoiding concrete actions. On the scale of 1 to 5, "1" meant *complete rejection of e-learning*, "3" – *flexible as to the use of e-learning*, while "5" – *full commitment to the use of e-learning*. The results, taking into account the mean, the standard deviation, the mode and Pearson's correlation coefficient, are shown in Table 1.

Table 3. Overview of results

Area of using e-learning technologies	initial measurement				final measurement				CBT	P
	Mean	SD	Mode	CV	Mean	SD	Mode	CV		
Teaching process	2.19	1.00	2	46%	**3,00**	1.31	2	44%	0.81	0.08
Teacher-student communication	**2.84**	1.02	3	36%	**3,45**	1.21	3	35%	0.61	0.01
Academic advancement	**2.51**	1.09	3	43%	**3,01**	0.87	3	29%	0.51	-0.05
Obtaining source materials	**2.67**	1.11	3	42%	**3,43**	1.19	3	35%	0.76	0.01
Learning process management	**1.95**	1.15	1	59%	**2,33**	1.15	1	49%	0.38	0.04

abbreviations: SD – standard deviation, CBT – change in behavior tendencies, P – Pearson's correlation coefficient, CV – coefficient of variation

Analyzing the mean results, it can be seen that before the training (initial measurement), university teachers leaned more towards the traditional mode (within the range of 1.95–2.84 points). After the 30-hour training course, however, the same teachers reported increased commitment to using the novel form of learning (2.33–3.45 points). It is noteworthy that, for learning process management, the lowest increase was recorded in the context of taking action, which is likely due to the fear of facing a new, challenging situation in the teaching environment which entails an additional burden of responsibility.

All this is reflected in the mode values, which, in the case of the indicated range, stood at "1" (meaning *complete avoidance of taking action*).

The standard deviations in the preliminary and final test were moderately dispersed and oscillated within 1 point. The obtained Pearson's coefficient indicated very poor correlations between the initial and final indicator, which means a high impact of training on the occurrence of changes in e-learning tendencies. In the case of the initial test, one can see that the coefficient of variation ranged between 36–59%, and in the final measurement it ranged from 29–49%. This means that as a result of the training, its value decreased, which confirms that the respondents' indications are less dispersed.

In the next part of this analysis, the five aforementioned areas of activity are going to be broken down into individual fields related to university teachers' tasks.

Field 1 concerns teaching classes with the use of e-learning technologies. Among the options available to teachers were the following statements:
- I will completely avoid the use of e-learning in the teaching process (1),
- I will conduct a small part of the classes in the e-learning mode (2),
- I will synthesize e-learning and traditional education (3),
- I will conduct a small part of classes in the traditional mode (4),
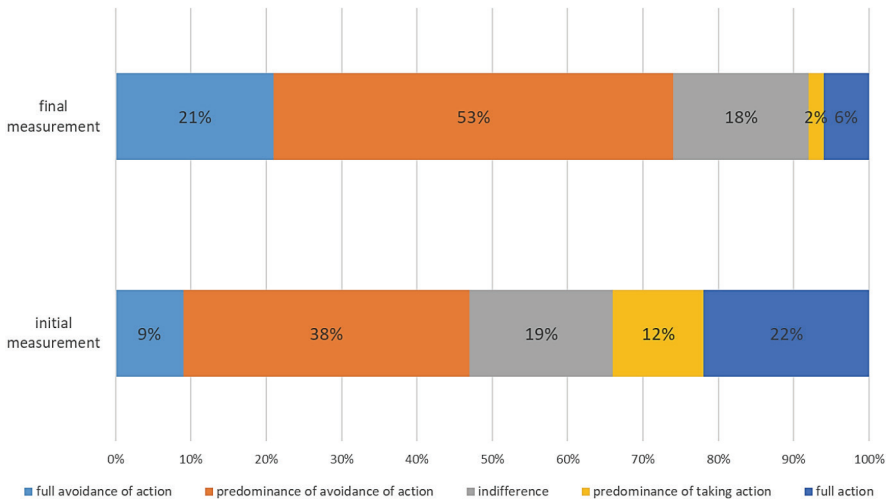- I will carry out all teaching activities in the e-learning mode (5).

Figure 3. Breakdown of behavioral tendencies for teaching classes via e-learning technologies

As per the initial indicator, every fifth respondent showed a tendency to fully avoid taking action towards embracing e-learning technologies, while

more than half reported only a limited use of this novel form of conducting classes. Reasons for this widespread scepticism can be sought in the lack of knowledge about e-learning, prejudice, and fear of finding oneself in a new, challenging situation as a teacher. Only 8% of the respondents indicated either a predominant or full implementation of classes via e-learning, which may be due to these teachers already having certain experience with such tools. The final measurement revealed a clear increase in the share of respondents willing to teach classes via e-learning (over 30%), while one in four said they had already tried this novel form in practice. The change in the intention to proceed with e-learning may be owed to the increase in relevant knowledge and the change in the emotions displayed towards this new mode.

Field 2 concerns communication with students via e-learning technologies, and the available responses were the following:
- I will only communicate with students in the traditional way (1),
- I will communicate with students via e-learning only when necessary (2),
- I will communicate with students both online and in real life (3),
- Most of my communication with students will be via e-learning technologies (4),
- I will communicate with students mainly through tools such as email, chat or forum (5).
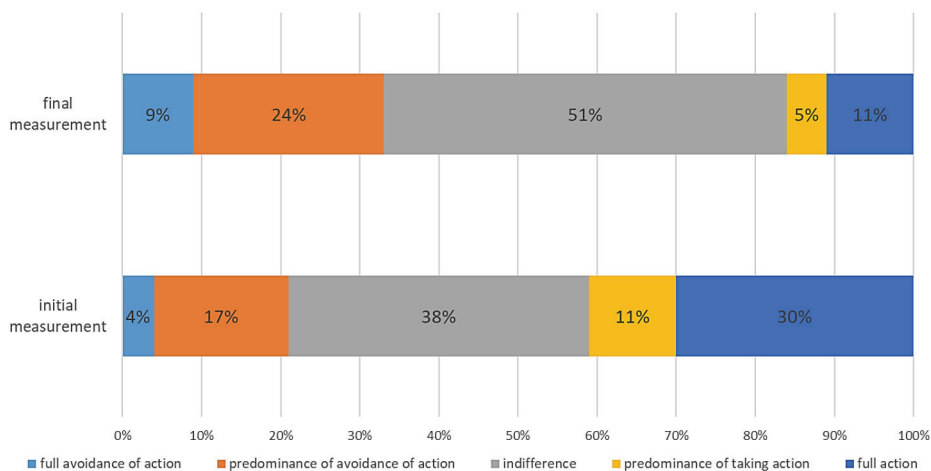

Figure 4. Breakdown of behavioral tendencies for communication with students via e-learning technologies

Analyzing the initial measurement for this field showed significantly lower values of the tendency to avoid action (full or partial) compared with the previous item. A possible reason for this is that the use of email to pass teaching materials to students, and in some cases also communicating via chat, was already fairly common. More than half of the respondents indicated the full synthesis of e-learning and traditional forms of contact, while 16% stated either full or predominant use of instant messaging in contact with students, which is a proof of teachers' extensive experience in this aspect.

Regardless, the final gauge managed to show a significant increase in the number of respondents mobilized to keep in touch with students via e-learning technologies. Instant-messaging applications, chats and forums playing the key role in communication with students was true for every fourth respondent who takes action in this respect, with only 4% intending to stick to traditional forms of teacher-student contact. This might be because of the increase in knowledge in this area (prompted by the training) and the display of mainly positive emotions to the phenomenon as such.

Field 3 is academic advancement via e-learning technologies, with the following statements:
– I will only use the traditional forms of accessing source materials for my academic advancement (e.g. articles in books) (1),
– I will use electronic databases with articles (2) from time to time,
– I will use electronic and traditional scientific studies (3),
– I will use online sources much more often (4),
– I will advance my career mainly through e-learning technologies (scientific collaboration in the cloud, databases) (5).

Comparing initial and final indicators, significant disparities are observed for academic advancement through e-learning technologies.

In the initial measurement, nearly 40% of the respondents assumed an action plan partially (11%) or completely (28%) excluding the use of e-learning, and only every fifth respondent intended to pursue their career through e-learning. Reasons for this include the lack of a clear agenda and possibly also the lack of knowledge of professional databases such as POL-index or CEJSH which allow access to many scientific studies. Almost half of the respondents hinted at the hybrid use of e-learning technologies, which may result from their already having some experience with it.

The measures performed at the end of the training showed a high change in behavior tendencies compared to the initial feedback. An almost two-fold decrease (from 39 to 24%) was reported for avoiding using online resources

to advance career, which could be closely related with an increase in knowledge as a result of active participation in the training. This increase reflects the increase in the number of respondents (by 6%) planning to use professional databases with articles or studies for collaborating on research projects (in the cloud).
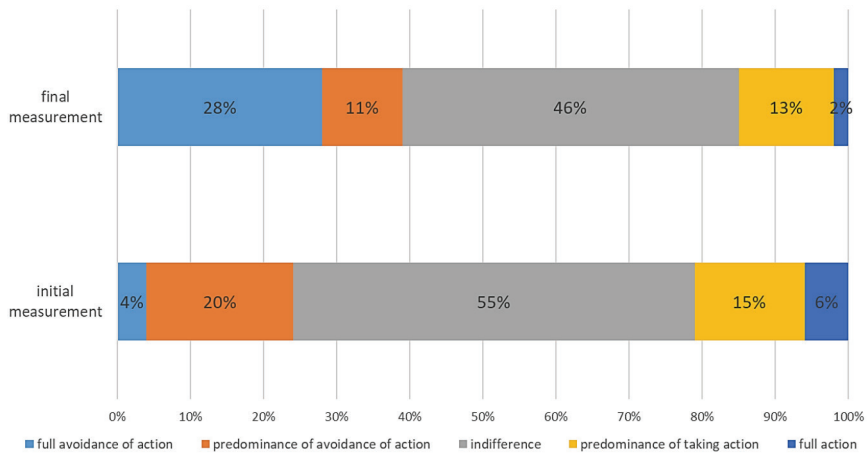

Figure 5. Breakdown of behavioral trends for academic advancement via e-learning technologies

Field 4 concerns accessing source materials via e-learning technologies, and the statements were:
– I will obtain source materials only in the traditional way (e.g. books) (1),
– I will obtain source materials in electronic form from time to time (2),
– I will use both traditional and electronic forms to access educational content (3),
– I will occasionally obtain source materials in the traditional way (4),
– I will obtain educational content only through e-learning technologies (e.g. educational websites) (5).

Analyzing the initial measurement, one can see that over 40% of the respondents claim either full or partial avoidance of action in the context of using e-learning technologies to access educational content. Once again, reasons for this scepticism should be sought in the lack of knowledge about the possibilities of educational websites and prejudices resulting from the stereotypes of only low-value source materials being available online. Only 12% of the respondents claimed full use of source materials obtained via the

Internet, which may result from their previous experience with this type of files.
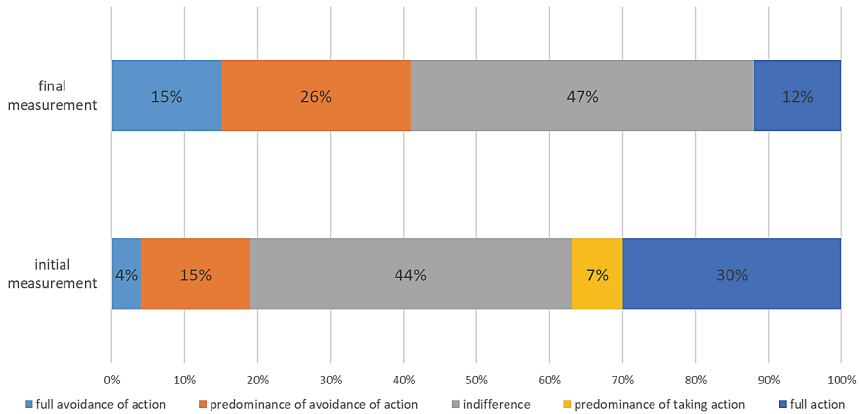

Figure 6. Breakdown of behavioral tendencies for obtaining teaching materials via e-learning technologies

The final measurement indicates a shift in the action plan towards e-learning. After the training, the number of initially sceptical respondents decreased two-fold, with every third respondent now using e-learning tools either fully or mainly in the context of accessing educational content. The reason behind this change was the increased amount of knowledge and the display of positive emotions.

The conducted analysis clearly indicates that, as a result of the training, the respondents' action plan in the context of obtaining educational content via e-learning technologies has shifted towards the manifestation of action.

Last but not least, Field 5 looks at learning process management through e-learning technologies. Here, the available responses were:

– I will manage the learning process only in the traditional way (e.g. paper attendance lists) (1),
– I will record the results of students' work using e-learning technologies from time to time (2),
– I will use both traditional and electronic forms to manage the learning process (3),
– I will manage student data in the traditional way only to a small extent (4),
– I will manage the learning process only through e-learning technologies (5).
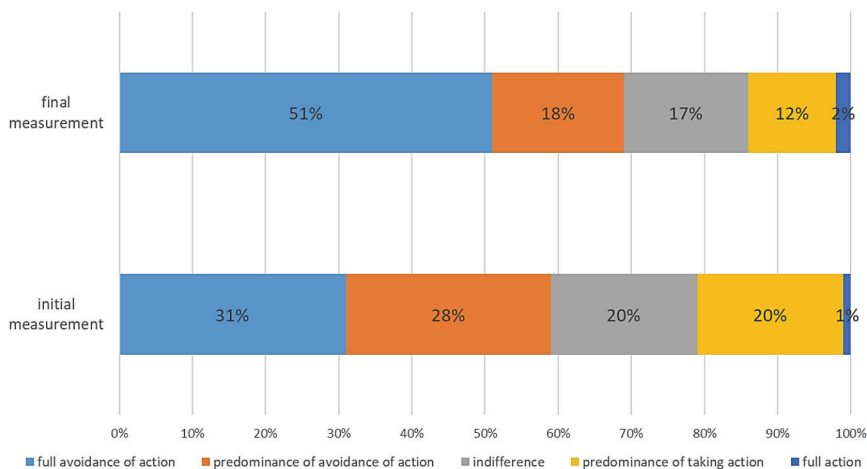
Figure 7. Breakdown of behavioral tendencies for learning process management via e-learning technologies

The initial gauge revealed a strong skew towards a traditionally managed implementation of the learning process among the academic staff. This is likely due to the lack of competence in the area of navigating e-learning plat-forms such as WBTServer or Moodle which enable the transfer of manage-ment online. In fact, as few as 2% of the respondents considered adopting a fully remote style of management, which may be related to their previous experience with using such tools.

Meanwhile, the final measurement indicated a scenario (not observed at the stage of analyzing the previous fields) in which the training did not bring about significant changes towards action. Almost 6 out of 10 respondents failed to show any intention to manage the learning process through e-learn-ing technologies. In this case in particular, the likely cause could be the fear of facing a new, challenging situation for them as teachers, which comes with an additional burden of responsibility. Yet, a two-fold percentage increase was reported in the number of respondents willing to move their learning process management online, which may have to do with the potential raising of their skills in this area.

Conclusions and recommendations

Summing up the analysis of the conducted research into the action plan of university teachers towards e-learning, it should be stated that teachers' attitudes have changed significantly thanks to the training. On the basis of the analysis, it has been determined that, in the initial measurement, teachers would display behavior tendencies suggesting predominantly avoidance of action (2.43 points), but the same value shifted towards the combined mode after the refresher training (3.04 points). This means that the difference in value represented by the scale containing values from 1 to 5 points stood at 0.61 points. Another key outcome of the analysis is that participation in the training triggered (for some respondents) a change in the action plan towards taking action.

It has been also showed that the task of universities is to establish distance-learning centers that will offer technical and substantive support to university teachers in the area of remote education. Such centers should provide conditions for conducting classes via e-learning technologies and hold periodic trainings so that academic staff stay up-to-date with the novel forms of education that emerge. Having analyzed the results, it can be confirmed that participation in training brings a tangible effect in the form of university teachers' willingness to take concrete actions.

Meanwhile, university teachers should ensure constant self-improvement. It is in lecturers' best interest to update their knowledge using various e-learning tools, as being aware of the importance of lifelong learning in a rapidly evolving society is something that cannot be done without. University teachers should also use their extensive experience gained over the years in traditional education and possibly pour some of that wisdom over to remote education. In an information and technology driven society such as ours, this is in fact the only viable attitude that can warrant smooth communication between teachers and students and help avoid digital exclusion, a problem particularly pressing for those whose long-proven teaching methods are no longer relevant, yet are still practiced by some of the faculty members.

It is worth noting the limitation of the obtained research results, stemming from the fact that the analysis was determined on the basis of the respondents' opinions. A key complement would be to carry out the research on the remaining components that make up a full understanding of human attitudes. The cognitive component, which is identified by knowledge (about

e-learning), and the emotional component, defined on the basis of emotions in relation to an innovative form of education, would constitute a valuable supplement of the research carried out.

The communication skills of teachers in intercultural education are also an important aspect. Closed attitudes characterized by negative emotions lead to the emergence and dissemination of undesirable social behaviour. On the other hand, open attitudes are the starting point for effective behaviour, intercultural interaction and collaboration (Welskop, 2013).

Bibliography

Albarracin, D. and Shavitt, S. 2018. Attitudes and attitude change. *Annual Review of Psychology*. **69**, pp. 299–327.

Albiladi, W. and Alshareef, K. 2019. Blended Learning in English Teaching and Learning: A Review of the Current Literature. *Journal of Language Teaching & Research*. **10** (2), pp. 232–238.

Alharbi, S. and Drew, S. 2014. Using the Technology Acceptance Model in Understanding Academics' Behavioural Intention to Use Learning Management Systems. *International Journal of Advanced Computer Science and Applications*. **5**, pp. 143–155.

Allo, M. 2020. Is the online learning good in the midst of Covid-19 pandemic? The case of EFL learners. *Jurnal Sinestesia*. **10** (1), pp. 1–10.

Becker, S.J. 1984. Empirical Validation of Affect, Behavior and Cognition as Distinct Components of Behavior. *Journal of Personality and Social Psychology*. **47** (6), pp. 1191–1205.

Bogardus, E. 1925. Measuring Social Distance. *Journal of Applied Sociology*. **9**, pp. 299–308.

Borba, M., Askar, P., Engelbrecht, J., Gadanidis, G., Llinares, S. and Sánchez, A.M. 2016. Blended learning, elearning and mobile learning in mathematics education. *ZDM Mathematics Education, Blended Learning, elearning and Mobile Learning in Mathematics Education*. **48**, pp. 589–610.

Estrada, A., Batanero, C. and Lancaster, S. 2011. Teachers' Attitudes Towards Statistics. In: Batanero, C., Burrill, G. and Reading, C. eds. *Teaching Statistics in School Mathematics-Challenges for Teaching and Teacher Education. New ICMI Study Series*, vol 14. Dordrecht: Springer, pp. 163–174.

Gaebel, M. 2014. *E-learning in European Higher Education Institutions*. Brussels: European University Association asbl.

Guerrero, S. 2010. Technological pedagogical content knowledge in the mathematics classroom. *Journal of Digital Learning in Teacher Education*. **26** (4), pp. 132–139.

Gutierrez-Esteban, P., Alonso-Diaz, L., Smyrnova-Trybulska, E., Capay, M., Ogrodzka-Mazur, E., Pinto, P.G.J and Gajdzica, A. 2015. Intercultural and digital competence in teacher training from an international perspective: Poland, Portugal, Slovakia, Spain and Russia. *Revista Latinoamericana de Tecnología Educativa*. **14** (1), pp. 145–157.

Halim, A., Yusus, Y. and Yakob, M. 2021. Analysis of Anxiety, Knowledge, and Beliefs Toward E-Learning During Covid-19: The Case of Science Teachers in Aceh, Indonesia. *The New Educational Review.* **64**, pp. 111–121.

Howe, L.C. and Krosnick, J.A. 2017. Attitude strength. *Annual Review of Psychology*. **68**, pp. 327–351.

Hrastinski, S., Keller, C. and Carlsson, S.A. 2010. Design exemplars for synchronous e-learning: A design theory approach. *Computers & Education*. **55** (2), pp. 652–662.

Huda, M., Kamarul. A., Mohd, I. and Bushrah, B. 2017. Understanding Divine Pedagogy in Teacher Education: Insigts from Al.-zurnuji's Ta'lim Al.-Muta'Allim. *The Social Sciences.* **12** (4), pp. 674–679.

Johnson, A.M., Jacovina, M.E., Russell, D.E. and Soto, C.M. 2016. Challenges and solutions when using technologies in the classroom. In: Crossley, S.A. and McNamara, D.S. eds. *Adaptive educational technologies for literacy instruction*. New York: Taylor & Francis, pp. 13–29.

Komalasari, K., Fitriasari, S. and Anggraini, D. 2021. Living Values-Based Digital Learning Resources in Civic Education. *The New Educational Review*. **63**, pp. 85–96.

Kurniawati, A. and Noviani, J. 2021. Indonesian Students' Perception about the Effectiveness of E-Learning Implementation During COVID-19. *The New Educational Review*. **66**, pp. 95–107.

Mahoney, J. and Hall, C. 2017. Using technology to differentiate and accommodate students with disabilities. *Learning and Digital Media*. **14** (5), pp. 291––303.

Mishra, L., Tushar, G. and Abha, S. 2020. Online Teaching-Learning in Higher Education during Lockdown Period of COVID-19 Pandemic. *International Journal of Educational Research Open*. **8** (12), pp. 111–124.

Möbs, S. and Weibelzahl, S. 2006. Towards a good mix in Blended Learning for Small and Medium-sized Enterprises – Outline of a Delphi Study. In:

Tomadaki, E. and. Scott, P eds. *Innovative Approaches for Learning and Knowledge Sharing.* Milton Keynes: Open University, pp. 10–17.

Naidu, S. 2003. *E-learning: A guidebook of principles, procedures and practices*. New Delhi: Commonwealth Educational Media Centre for Asia (CEMCA).

Nikitorowicz, J. 2009. *Edukacja regionalna i międzykulturowa*. Warszawa: WAiP.

Ogrodzka-Mazur, E., Szafrańska, A., Malach J. and Chmura, M. 2017. The use e-learning resources by academic teachers – a Polish-Czech comparative study. *The New Educational Review*. **50**, pp. 169–185.

Olson, J.M. and Zanna, M.P. 1993. Attitudes and Attitude Change. *Annual Review of Psychology*. **44**, pp. 117–154.

Ong, C.S., Lai, J.Y. and Wang, Y.S. 2004. Factors Affecting Engineers' Acceptance of Asynchronous E-Learning Systems in High-Tech Companies. *Information and Management*. **41**, pp. 795–804.

Pachisia, J. 2022. The concept of blended learning mode. *International Journal of Home Science*. **8** (1), pp. 74–81.

Raheem, B.R. and Khan, M.A. 2020. The Role of E-Learning in COVID-19 Crisis. *International Journal of Creative Research Thoughts*. **8** (3), pp. 3135––3138.

Rakic, S., Tasic, N., Marjanovic, U., Softic, S., Lüftenegger, E. and Turcin, I. 2020. Student Performance on an E-Learning Platform: Mixed Method Approach. *International Journal of Emerging Technologies in Learning*. **15**, pp. 187–203.

Rashid, S. and Yadav, S. 2020. Impact of Covid-19 Pandemic on Higher Education and Research. *Indian Journal of Human Development*. **14** (2), pp. 340–343.

Santillán, A. 2012. Cognitive, Affective and Behavioral Components That Explain Attitude toward Statistics. *Journal of Mathematics Research.* **4** (5), pp. 8–16.

Scott, S. 2011. Contemplating a constructivist stance for active learning within music education. *Arts Education Policy Review*. **112** (4), pp. 191–198.

Szempruch, J. 2021. Szkoła w społeczeństwie wielokulturowym. *Edukacja Międzykulturowa.* **2** (15), pp. 56–72.

Urhahne, D. 2015. Teacher behavior as a mediator of the relationship between teacher judgment and students' motivation and emotion. *Teaching and Teacher Education*. **45**, pp. 73–82.

Wark, C. and Galliher, J.F. 2007. Emory Bogardus and the Origins of the Social Distance Scale. *American Socilogist.* **38** (4), pp. 383–395.

Welskop, W. 2013. Rola nauczyciela w edukacji międzykulturowej. In: Michalik, U. and Michalska-Suchanek, M. eds. *Język i środowisko*. Tom II. Gliwice: Wydawnictwo Gliwickiej Wyższej Szkoły Przedsiębiorczości, pp. 41––49.

Zawadzka, E. 2004. *Nauczyciele języków obcych w dobie przemian*. Kraków: Oficyna Wydawnicza "Impuls".