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TEACHERS' PERSPECTIVE ON THE EDUCATIONAL IMPLICATIONS OF ONLINE TEACHING

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Abstract. The present research explores the perception of teachers in Romania on the implications of the transition to online education. 143 teachers participated in the research, all of them involved in continuing education activities. From the results, we can highlight the fact that as we approach pre-school and primary level in regular education, online teaching is perceived as much more difficult. The same happens in special education, where efficiency is considered low in the online environment. Almost 80% of teachers consider that online education is below the efficiency of on-site education. Teachers consider that they are better prepared than the institutions where they work or than their students for online activities. 40% of teachers consider that they are well enough prepared and no longer need training, most of them investing in their training. Almost half of the teachers believe that some activities could remain online even after the end of the COVID-19 pandemic and they believe that the general responsibility for improving the situation lies with the Ministry of Education.

Keywords: online teaching; teachers; COVID-19 pandemic; special education; blended learning

Introduction

This research was conducted to analyze some effects of the sudden transition to online education due to the outbreak of the COVID-19 pandemic and the declaration of a state of emergency in March 2020 in Romania. At that time, the decision was taken at the level of the Ministry of Education and Research to suspend on-site activities in schools to prevent the transmission of the virus. The transition to online education was a difficult one given that there was no prior institutional preparation for a sudden transformation of such magnitude and also the training of teachers for this type of education was minimal until then. At the local level, there have been recent analyzes on the institutional and legal implications concerning what is happening in other European countries (Dobrilă 2020), on the organization of the activity at university level (Răduca, Popescu, Hamat, Molnar, Rotaru 2020) and pre-university level (Alexandru, Scoda 2020; Edelhauser, Lupu-Dima 2020). All those researches were trying to identify which practices could improve online educational activities.

But most are at the level of exploring the situation and it is observed that there is a high need for the collection of empirical data to allow an objective interpretation of the situation. Internationally, there are recent interpretations that indicate an opportunity in online education (Mata 2021; Adedoyin, Soykan 2020; Allen, Rowan, Singh 2020; Carrillo, Flores 2020) but also negative effects such as lack of access to educational resources necessary for children from vulnerable backgrounds (Bacher-Hicks, Goodman, Mulhern 2021; Esposito, Principi 2020; Azorin 2020). Most research indicates a major need for both teacher training and institutional developments to cope well with a challenge such as the current one (Daniel 2020).

In the article, we try to focus on understanding the perspective of teachers, given that we start from the premise that we must first focus on training them to adapt to the requirements of online education (Alea, Fabrea, Roldan, Farooqi 2020). The adaptation of teachers to the new paradigm is imperative (Pop 2020) on which educational policies should focus. But it is important to use as much field data as possible in this regard, and in the following, we set out to explore particular empirical dimensions that we have not encountered in other research. These refer to the analysis of the perceived impact of the transition to online education, the interpretation of efficiency according to the level of teaching, the perspective of returning to on-site activities, how teachers consider responsibility for the efficiency of education in the virtual environment, how teachers in special education adapted, how the teachers consider it appropriate to organize online educational activities or the perspective on how students have been affected by the lack of on-site activities.

Participants

143 teachers participated in the research, all of them being higher education graduates, 109 from urban areas (76.2%) and 34 from rural areas (23.8%). 109 participants work in regular education (76.2%), 27 work in special education (18.9%) and 7 work in universities (4.9%). By level of schools, 36 teachers work at preschool level – kindergarten (25.2%), 38 work in primary education (26.6%), 36 work in secondary schools – gymnasium level (25.2%), 27 work in high school (18.9%) and 6 at university level (4.2%). Due to the low number of participants at the university level, the specific statistical processing omitted this category and the data were used only for the general results. 27 participants are aged between 18 – 35 years (18.9%), 103 are aged between 36-50 years (72%) and 13 are aged between 51-65 years (9.1%). The sample is also representative since all these teachers are actively involved in lifelong learning, regularly participating in training courses and academic events related to education.

Materials and procedure

Participants were given a questionnaire of 19 questions regarding the impact of digitalization of education during the COVID-19 pandemic, which was developed

within the Teacher Training Department at the University of Oradea. The collected data were processed using SPSS-17. In the first phase, the data were processed descriptively and then we proceeded to the inferential processing of the data where an in-depth interpretation of the results was needed.

Results

In a first phase we focused on how teachers felt the impact of the transition to online education, on their own opinion regarding the transition to education in the virtual environment, we also analyzed how they perceive the effectiveness of this type education, and their views on online education in a post-pandemic context.

The impact felt by teachers

Regarding the impact felt by teachers with the transition of educational activities to the online environment, we have the following general data presented in table 1.

Table 1. The impact felt by teachers

Impact	Frequency	Percent
Low	69	48.3
Moderate	73	51.0
Major	1	.7
Total	143	100.0

Analyzing the differences of the impact felt by teachers depending on the variables of categories such as school environment (urban or rural), age of teachers (18 – 35, 36 – 50, 51 – 65), level of teaching (preschool, primary, middle school – gymnasium, high school), the type of education (regular, special), there were no significant differences found.

Processing and comparing specific frequencies using Chi-Square (and the Fisher exact test) does not indicate a significant difference depending on the variables mentioned.

Regarding the differences depending on the school environment, there is no significant difference between rural and urban areas ($x2 = 0.25$, $DF = 1$, $p = 0.87$). Even in terms of differences depending on the level of teaching, there is no significant difference between preschool, primary, gymnasium, high school ($x2 = 3.23$, $DF = 3$, $p = 0.35$).

There is no significant difference on the impact felt concerning the type of education, regular or special ($x2 = 3.11$, $DF = 1$, $p = 0.07$) but we are approaching the threshold of significance. We notice that special education teachers feel a more intense impact than mainstream teachers.

There is no significant difference on the impact felt even in relation to the age of teachers ($x2 = 0.95$, $DF = 1$, $p = 0.33$).

Interpreting the transition to online education

Regarding how teachers interpreted the transition to online education, we have the following general data presented in table 2.

Table 2. Interpreting the transition to online education

Transition	Frequency	Percent
Natural process	93	65.0
Positive process	22	15.4
Negative process	28	19.6
Total	143	100.0

Analyzing the differences in the way teachers interpret the transition to digital education, depending on the variables of categories such as school environment (urban or rural), age of teachers (18 – 35, 36 – 50, 51 – 65), level of teaching (preschool, primary, gymnasium, high school), the type of education (regular, special), by processing and comparing specific frequencies using Chi-Square (and the exact Fisher test) there is a significant difference only depending on age.

Regarding the differences depending on the school environment, there is no significant difference between rural and urban areas ($x2 = 0.14$, $DF = 2$, $p = 0.93$). Even in terms of differences depending on the level of teaching, there is no significant difference between preschool, primary, gymnasium or high school levels ($x2 = 8.1$, $DF = 6$, $p = 0.22$). There is no significant difference in the way the transition to digital education is felt either concerning the type of education, regular or special ($x2 = 2.4$, $DF = 2$, $p = 0.28$).

However, there is a significant difference in the way the transition to digital education is felt concerning the age of teachers ($x2 = 9.46$, $DF = 2$, $p = 0.01$). We notice a somewhat surprising result that young teachers consider that the transition to digital education is a negative process and more experienced teachers consider the transition to be natural.

The efficiency of online education

How teachers evaluate the efficiency of online education is presented in table 3.

Table 3. Evaluation of the efficiency of online education for teachers

The efficiency of online education	Frequency	Percent
Low	26	18.2
Satisfactory	87	60.8
Similar to traditional education	22	15.4
Superior to traditional education	8	5.6
Total	143	100.0

Analyzing the differences on the way teachers evaluate the efficiency of digital education, depending on the variables of categories such as school environment (urban or rural), age of teachers (18 – 35, 36 – 50, 51 – 65), level of teaching (preschool, primary, gymnasium, high school), the type of education (regular, special), by processing and comparing specific frequencies using Chi-Square (and the exact Fisher test) there is a significant difference depending on the type of education - regular or special.

Regarding the differences depending on the school environment, there is no significant difference between rural and urban areas ($x2 = 2.86$, $DF = 3$, $p = 0.41$). Even in terms of differences depending on the level of teaching, there is no significant difference between preschool, primary, gymnasium, high school levels ($x2 = 10.7$, $DF = 6$, $p = 0.09$) but the results are close to significance threshold. We notice that the efficiency is considered lower in the initial cycles and increases as we move towards high school.

There is a significant difference in the way the efficiency of online education is evaluated concerning the type of education, regular or special ($x2 = 6.5$, $DF = 2$, $p = 0.03$). Special education teachers believe that the effectiveness of special education is below that of traditional education.

There is no significant difference in the way the efficiency of digital education is evaluated concerning the age of teachers ($x2 = 0.92$, $DF = 2$, $p = 0.62$).

Return to on-site activities

Regarding the return to on-site activities after the end of the COVID-19 pandemic, the opinion of teachers is presented in table 4.

Table 4. Teachers' opinion regarding the return to on-site activities

Return to on-site activities	Frequency	Percent
100% return to on-site	70	49.0
Majority of educational activities	53	37.1
Only the necessary educational activities	16	11.2
100% continue online	4	2.8
Total	143	100.0

Analyzing the differences in the way teachers relate to returning to on-site activities, depending on the categories of the variables such as school environment (urban or rural), age of teachers (18 – 35, 36 – 50, 51 – 65), level of teaching (preschool, primary, gymnasium, high school), the type of education (regular, special), by processing and comparing specific frequencies using Chi-Square (and the exact Fisher test) there is a significant difference when we evaluate according to the type of education, regular or special.

Regarding the differences depending on the school environment, there is no significant difference between rural and urban areas ($x2 = 2.1$, $DF = 2$, $p = 0.34$). Even in terms of differences depending on the level of teaching, there is no

significant difference between preschool, primary, gymnasium, high school levels ($x2 = 8.12$, $DF = 6$, $p = 0.22$). It is interesting to note, however, that teachers in the initial cycles prefer in a higher percentage to return to on-site courses. It is interesting to note the fact that over 50% of teachers consider the blended-learning option to be preferable in the future.

There is a significant difference on the desire to return on-site activities in relation to the type of education, regular or special ($x2 = 6.1$, $DF = 2$, $p = 0.04$). We note that teachers in special education do not consider it appropriate to move educational activities to the online environment.

There is no significant difference on the desire to return on-site in relation to the age of teachers ($x2 = 4.3$, $DF = 2$, $p = 0.11$).

In the second phase, we focused on the analysis of how teachers perceive their preparedness for online education, the preparedness of students and the institutions in which they work.

Preparedness of teachers for online education

In table 5 we observe the perception of teachers on their preparedness for online education.

Table 5. Teachers' perception of their preparedness for online education

Preparedness of teachers for online education	Frequency	Percent
Inadequate	7	4.9
Satisfactory	76	53.1
Good and very good	60	42.0
Total	143	100.0

We see in Table 5 that over half of teachers consider that they have a satisfactory level of preparedness (53.1%), good and very good level (42%) and only 4.9% consider that they have inadequate preparedness for online education.

Preparedness of institutions for online education

In table 6 we can analyze the teachers' perception of the preparedness of the schools where they work for online education.

Table 6. Teachers' perception of the preparation of the schools where they work for online education

Preparedness of the schools for online education	Frequency	Percent
Inadequate	24	16.8
Satisfactory	78	54.5
Good or very good	41	28.7
Total	143	100.0

When it comes to analyzing how the institutions in which they operate have been prepared for online education, 16.8% of teachers say that it was inadequate, 54.5% say it is satisfactory and 28.7% consider that their schools have been well or very well prepared for this transition.

Preparedness of students for online education

In table 7 we observe the teachers 'perception of the students' preparedness for online education.

Table 7. Teachers 'perception of students' preparation for online education

Preparedness of students for online education	Frequency	Percent
Inadequate	37	25.9
Satisfactory	88	61.5
Good or very good	18	12.6
Total	143	100.0

It is interesting to note in table No. 7 that teachers consider that only 12.6% of students are well or very well prepared for online education, and 25.9% have inadequate training. Teachers consider that 61.5% have satisfactory training.

Adaptation of students to online education

In table 8 we observe the teachers 'perception of the students' adaptation for online education.

Table 8. Teachers 'perception of students' adaptation to online education

Adaptation of students to online education	Frequency	Percent
Inadequate	31	21.7
Satisfactory	81	56.6
Good or very good	31	21.7
Total	143	100.0

Regarding how teachers consider that students have adapted to online education, 21.7% consider that they are poorly adapted and 56.6% consider that they are satisfactorily adapted. Therefore, 78.3% of teachers consider that students have adapted only to a minimum for online education. 21.7% of teachers consider that students have adapted to a good or very good level.

Here we considered that we need to highlight the statistical differences between the perception of teachers on the adequacy of their training and the preparation of institutions and students for online education.

There is a significant difference in the perception of teachers on their own preparation, institution or students for online education ($x2 = 43.2$, $DF = 4$,

p = 0.01). Teachers consider that they are better prepared than their students or the institutions in which they work, for online education.

Teacher training for online education

In table 9 we observe the attitude of teachers towards the training for online education.

Table 9. Teachers' attitude towards training for online education

Teacher training for online education	Frequency	Percent
Underwent training	57	39.9
Underwent training and willing for more	70	49.0
Did not underwent training	2	1.4
Did not underwent training but willing to do	14	9.8
Total	143	100.0

Regarding programs completed for online education, 39.9% of teachers say they have completed such training, 49% say they have completed and still want to participate in such training, 1.4% say they have not completed such training and 9.8% say they have not participated in any training but would like to participate. Therefore, 41.3% of teachers consider that they no longer need training for online education and 48.7% consider that they need further training.

Acquisition of know-how for online education

In table 10 we see the teachers' response regarding the investment in the know-how necessary for online education.

Table 10. The teachers' response regarding the investment in the know-how necessary for online education

Investment in the know-how necessary for online education	Frequency	Percent
Yes	135	94.4
No	8	5.6
Total	143	100.0

94.4% of teachers say they have invested in books and training programs for online education and only 5.6% do not.

The source of solutions for online education

In table 11 we see how teachers represent the responsibility for solutions regarding online education.

Table 11. Representation of responsibility for solutions for online education

The source of solutions for online education	Frequency	Percent
Personal	40	28.0
Institutional (schools)	16	11.2
Ministry of Education	85	59.4
NGO	2	1.4
Total	143	100.0

When it comes to the source of solutions, 59.4% of teachers believe that this is the responsibility of the Ministry of Education, 28% believe that the responsibility is personal, 11.2% believe that schools should find solutions and 1.4% believe that NGOs could provide solutions in this regard.

In a third phase, we focused our attention on teachers' perspective regarding the basic organization of online activities.

Carrying out online educational activities

Table 12 shows how teachers have supported their online educational activities.

Table 12. How to support online educational activities

Carrying out online educational activities	Frequency	Percent
Synchronous (live video lessons)	98	68.5
Asynchronous (materials sent online)	44	30.8
No online educational activities	1	.7
Total	143	100.0

68.5% of teachers supported online activities synchronously, through live video conferencing and 30.8% supported asynchronous activities, periodically transmitting video or non-video content to students. 0.7% claim that they failed to hold online activities.

Duration of online lessons

Table 13 shows the duration that teachers consider optimal for online activities.

Table 13. Duration of online lessons

Duration of online lessons	Frequency	Percent
10 min	8	5.6
10-30 min	70	49.0
45 min	62	43.4
60 minute	3	2.1
Total	143	100.0

49% of teachers consider that the optimal duration of online activities is between 10-30 minutes, 43.4% consider that the optimal activities are 45 minutes, 2.1% consider that 1 hour would be the optimal interval, and 5, 6% think that an online lesson should last up to 10 minutes.

Duration of online breaks between lessons

Table 14 shows the duration that teachers consider optimal for breaks between online activities.

Table 14. Breaks between online activities

Duration of online breaks between lessons	Frequency	Percent
No break needed	3	2.1
5-10 minutes	75	52.4
Over 10 minutes	65	45.5
Total	143	100.0

52.4% of teachers consider that breaks should be between 5-10 minutes, 45.5% think that breaks should last more than 10 minutes and 2.1% believe that there is no need for a break between online lessons.

Compensatory activities proposed after returning to on-site education

In table 15 we see the indications of teachers regarding the compensatory actions that should be taken with the return to on-site education.

Table 15. Compensatory actions that should be taken with the return to on-site education

Compensatory activities proposed after returning to on-site education	Frequency	Percent
Remedial lessons	59	41.3
Socialization	62	43.4
Medical recovery	7	4.9
Psychological counseling	15	10.5
Total	143	100.0

Most teachers, 43.4% believe that social activities should take precedence for students after returning to on-site education, 41.3% believe that remedial activities are needed in various disciplines, 10.5% believe that children they need psychological counselling and 4.9% believe that they would even need medical recovery for children after this period.

Conclusions

The results provide us with valuable information in the context of online education implemented suddenly after the outbreak of the COVID-19

pandemic. After the presentation of the general data and the in-depth analysis of some of them, we noticed some results that can be useful in researching the phenomenon or in developing educational policies adapted to the context of digitalization of education. We note that over half of teachers consider that the impact of the transition to online education on them has been moderate, almost half consider that it has been low and very few consider that the impact has been major. It is observed that special education teachers are more affected, and this is natural in the context in which educational and recovery activities for children with disabilities require a more concentrated approach and involve student-teacher proximity. These teachers also believe that the effectiveness of online education is low. Regarding the transition to online education, most teachers consider it a natural or positive process, but almost 20% consider it a negative process. Surprisingly, young teachers are the most sceptical. One explanation may be that their preparation for online activities was relatively poor during their initial studies and at the beginning of their career, it is difficult to manage the educational activities in the absence of proximity of students. We also note that many of the young teachers who responded to the questionnaire work in preschool and primary education, precisely the levels where online education is most difficult to implement – according to the data presented which show that as we move towards gymnasium or high school, teachers believe that the adequacy of online education is increasing. Regarding the efficiency of online education, almost 80% of teachers say that it is at best satisfactory and only about 20% consider that it is at least similar or even better than on-site education. It is very interesting to question, in this context full of scepticism about the effectiveness of online education, the possible interpretations of the causes of the phenomenon. Teachers consider that they are better prepared than the students or their schools as host institutions. Interestingly, the opinion of teachers is that almost 80% of students have adapted only to a minimum level for online education. It is also interesting to mention here that about 40% of teachers consider that they are well enough prepared for online education and do not need additional training. Almost all teachers say that they have made personal investments in the acquisition of know-how for online education but consider that the main responsibility in this direction is on the Ministry of Education. Regarding the return to online activities, more than half of the teachers believe that to a greater or lesser extent, some activities could remain in the online environment and therefore they support blended learning. Most teachers consider that students have been most affected from the point of view of socialization and consider that actions are needed to compensate for these losses as there are necessary also remedial activities for most of the disciplines.

Our article reflects a perspective of teachers but we believe that the perspective of students on online education (Wargadinata, Maimunah, Eva, Rofiq 2020) must

be also understood to have a complete picture of the phenomenon and to develop the best strategies for improving it and capitalize on opportunities.

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