

Digitalization in Education - Effects on Classroom Management¹

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Abstract

In the last decades, especially in the post-pandemic period, the digitization phenomenon has gained momentum in all sectors of social life, including the educational environment. In our opinion, the phenomenon of digitalization in education generates a multitude of effects at the level of classroom management, in relation to the following significant aspects: pedagogical/educational relations (between various educational actors: students, teachers, parents, educational managers, etc.) the teaching style/educational style, the learning style of the student, the mode and degree of engagement/involvement of students and teachers in the decision-making process at classroom level, the strategies of communication and resolution of conflict situations arising in different educational contexts, the ways of managing time, stress and priorities, etc. Through this article we aim to carry out a multidimensional research, aimed at identifying the perceptions and the attitudes of the teachers and students in the investigated sample, regarding the effects of digitization on the management of the classroom, in relation to the aspects listed above. The micro-survey sample included 103 pre-university teachers, with different specializations, who teach at different levels of education and 72 secondary school students (middle and high

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The authors' contribution to the elaboration of the work is equal.

school). We appreciate that the answers obtained from the investigation carried out will contribute to the identification of valuable methodological landmarks from a socio-psycho-pedagogical point of view, useful in the direction of modernizing the management of the classroom and its realization in conditions of increased efficiency.

Keywords:

digitalization in education, classroom management, educational relations, educational decisions, educational strategies

Introduction

Digitalization is a phenomenon that is increasingly becoming the concern of decision-makers in different areas of social life: political, economic, administrative, educational, etc. It involves the use of digital technologies to increase the efficiency, accessibility and quality of services, products and interactions. Digitalization is a complex process that is reconfiguring the way we interact with information and technology, having a significant impact on society as a whole and on the quality of life of the individual. Digitalization in education has the potential to transform the way in which the instructive-educational process takes place, creating a more flexible, accessible and responsive learning environment, better adapted to the needs of today's learners. In this context, the Action Plan for Digital Agenda for Education (2021-2027) has been set up at European level, which aims to continue and develop previous digitization actions with a view to "adapting the education and training systems of the EU Member States to the digital age in a sustainable and effective way". Correlatively, at national level, the Strategy for the digitization of education in Romania - SmartEdu (2021-2027) was developed, in the context of which the main levels of digitization applicable to the Romanian education system and implicitly to the education process are identified.

The revision of the speciality literature.

In the literature we identify at least two concepts that can be related to digitization, namely digitization and digital transformation.

Digitization is "the technical process of converting analogue signals into digital form" and digitization refers to "the processes of adopting and using these technologies in individual, organizational and broader societal contexts" (Legner et al., 2017, p. 301). Vrana & Singh (2024) talk about the adoption of digital equipment (digitization), digital processes (digitization), the integration of processes at the value-creation level (digital transformation), up to digitization of the entire creation-consumption value cycle, creating a meaningful consumer experience (referred to by the authors as "digital transfiguration"). Other authors (Rad et al., 2020) consider digitization as "the beginning of the digitization era"; digitization refers to the use of digitized information in the educational process, its integration and use in various structures, platforms and applications (Rad, Egerău, 2020), and digital transformation refers to the creation of innovative educational concepts resulting from digitization processes (Rad et al., 2020).

When specifically discussing the phenomenon of digitalization in education, various analysts consider the transition of education to the digital sphere as a turning point in the history of education (Stuart, 2014 apud Bejinaru, 2019). In the author I.O. Pânișoară's view "Digitalization of education brings with it new ways of seeing school, of understanding the place and role of teachers and students in this process" (2020, p. 103).

In other words, digitalization in education refers directly to the integration of digital technologies into teaching, learning and assessment processes. It is a wide-ranging concept, which includes a number of aspects related to the use of digital resources, such as online platforms, educational applications, virtual collaboration tools and multimedia materials, all geared towards a modern educational process, realized in conditions of interactivity, accessibility and efficiency.

According to the author R. Iucu, classroom management represents a "field of research in educational sciences that studies both the theoretical perspectives of approaching the classroom (didactic and psychosocial) and its dimensional-practical structures (ergonomic, psychological, psychosocial, normative, relational, operational and

creative), in order to facilitate the interventions of teachers in concrete microeducational crisis situations (indiscipline, violence, non-involvement, etc. Seen from the perspective of the managerial activities of teachers and the functions they perform, classroom management involves "the effective management, under the sign of civic-democratic values, of the specific activity of the classroom, based on the premise that the school anticipates and prepares graduates to become involved in social life, but also to react appropriately in resolving the conflicts inherent in a democratic society" (Stan, 2003, p. 3). Aldridge and Fraser (2016) assess that "classroom management is the process of organizing human and material resources to facilitate a learning environment in which students feel safe, respected, and motivated to learn".

Referring to the effects that effective classroom management should generate in the classroom R. J. Marzano (2017) emphasized that "classroom management involves not only controlling student behavior, but also creating a learning culture in which students feel engaged, responsible, and eager to actively participate in the educational process".

Research methodology

The aim of the present research is to identify the perceptions and attitudes of the teachers and students in the investigated sample regarding the effects of digitization on classroom management. To this end, the research was designed and carried out on several levels/dimensions, such as: structured relationships between different educational actors, teaching/teaching style and learning style, the mode and degree of engagement/involvement of teachers and students respectively in the decision-making process, communication and conflict resolution strategies, and ways of managing time, stress and priorities in the student collective.

Our hypothesis was that if teachers and students alike are aware of the benefits and risks associated with digitization, then the effects of digitization on classroom management will be predominantly positive. The research method was a questionnaire-based survey, applied to a sample of 103 secondary and secondary school teachers and 72

students, respectively, from the same levels of pre-university education.

The teacher questionnaire had 10 items, one of which was open-ended, 6 were multiple-choice and 3 were scaled (on a 5-step Likert-type scale).

The student questionnaire comprised a total of 8 items, two of which required an open-ended response, 4 required multiple-choice responses and a further two items required a scaled response (on a 5-step Likert-type scale). The questionnaires were administered online, using Google Forms, with anonymity and confidentiality of responses. All the questions asked complied with the principles of professional ethics and were in accordance with the provisions of the European Union directives on cybersecurity and the processing of personal data, contained in Regulation (EU) 2016/679 of the European Parliament and of the Council of the European Union of April 27, 2016 on the protection of individuals with regard to the processing of personal data and on the free movement of such data (General Data Protection Regulation). All respondents agreed to the processing of personal data for research purposes. Data obtained through questionnaires were processed quantitatively, using statistical-mathematical methods and then analyzed qualitatively, in relation to the professional expertise of the authors.

Analysis and interpretation of the research data

In this paper we aim to conduct a predominantly comparative analysis of the answers given by teachers and students as respondents, centered on the most important dimensions of the investigative approach.

In relation to the question *To what extent do you consider that digitalization contributes to more efficient classroom management?*, the data obtained indicate that the perception of the majority of teacher respondents in relation to the digitization process is positive and proactive. Thus, 43% consider that digitization contributes to the efficiency of classroom management to a very great extent, 27% to a great extent and 10% to a moderate extent. However, it is also worth noting the 20% of respondents who consider that digitalization contributes to efficient classroom management only to a small extent (15%) and to a very small extent (5%). In this case, we believe that the

reasons/arguments supporting this perception need to be identified and analysed in greater depth.

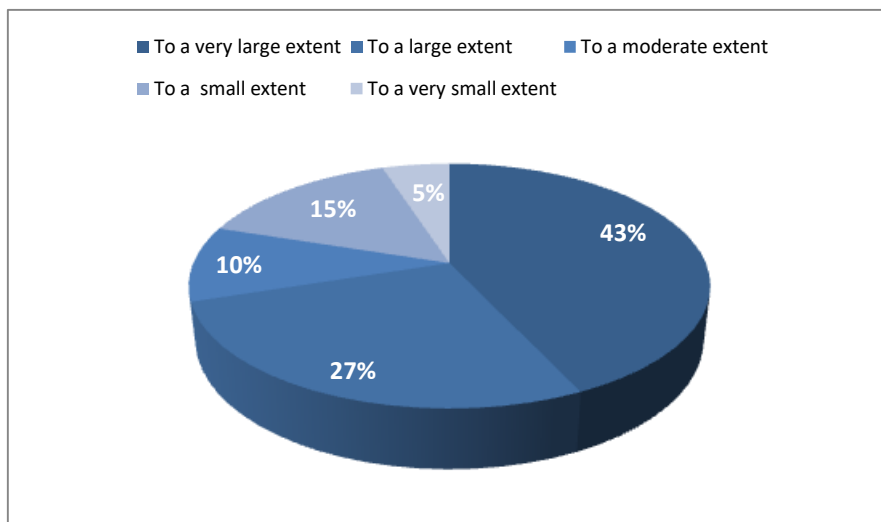


Fig. 1. Teachers' perceptions of the extent to which digitization contributes to effective classroom management

An open-ended item type question asked to both groups of respondents was What does digitization of education mean?

Among the answers given by teachers, the following are significant:

- The use of digital tools and technology;
- Making the teacher's work easier in terms of producing school documents;
- Use of digital applications in school/classroom management, free use of learning platforms, e-catalog, but not moving the whole process online;
- The direct way to make school more attractive and efficient, adapted to students' needs and lifestyle;
- Developing digital competences to make education more efficient and to keep pace with changes in society.

At the level of student respondents we identify relatively similar answers, which demonstrates an adequate understanding of the concept:

- Use of information technology in the educational process.
- Using the Internet for educational purposes.
- The use of electronic materials to simplify our work, textbooks and workbooks being made on tablets and making our backpacks lighter;
- Access to various informative materials posted on educational platforms, communication on social platforms and online lessons;
- Introduction of current pedagogical practices adapted to the realities we are going through.

Another item addressed to both groups of respondents was administered in order to identify the advantages of digitization. In the opinion of the teachers, the top three in the order of importance given by the respondents are: time saved, making the most of digital applications and streamlining communication. For students, the top three in order of importance given by respondents are: time saved, use of interactive digital applications and streamlining communication. All of these demonstrate similar perceptions of the benefits of digitization among students and teachers.

In relation to the disadvantages of digitization, teachers' respondents consider the most significant to be: insufficient/lack of IT skills, inherent technical difficulties and time allocated/lack of time. According to students the main disadvantages of digitization in education are: time spent online, visual impairment and inherent technical difficulties. As can be seen from the data collected, the time variable is categorized as both an advantage and a disadvantage by both categories of respondents. This leads us to believe that a responsible attitude on the part of teachers and students, respectively, with regard to time management can tip the balance in the direction of an appropriate, balanced use of this resource.

The question *To what extent do you consider that digitization, in the context of classroom management, produces changes in the teacher-pupil relationship?* was asked to both categories of respondents and the responses are illustrated in the figure below. We find relatively similar perceptions in the two categories of respondents, with a slightly higher frequency of teachers' answers at the top of the rating scale (very much and to a great extent), which can be explained by a better awareness of the phenomenon of digitization in education and its implications for traditional, direct, face-to-face pedagogical relationships.

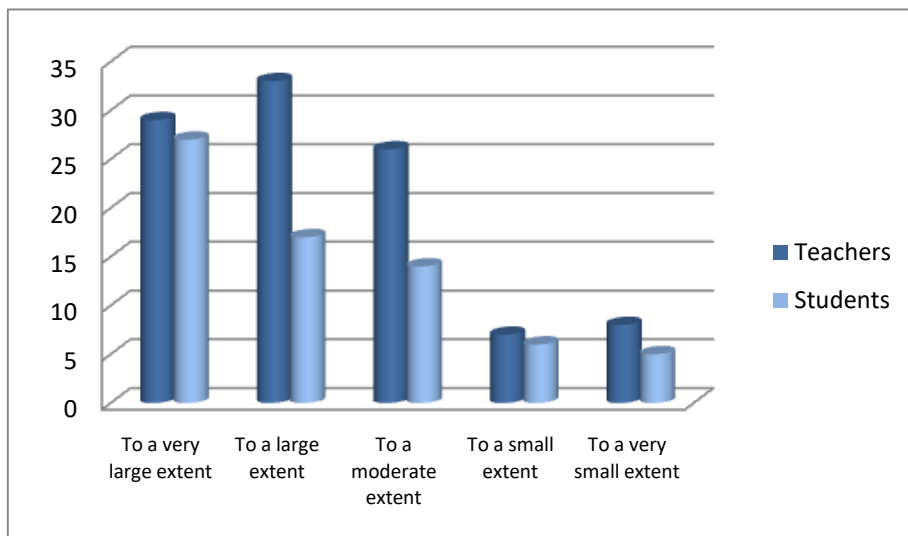


Fig. 2. Perceptions of teachers and students regarding the extent to which digitalization produces changes in the teacher-student relationship

Another item addressed to both teachers and students was: *To what extent do you consider that digitization, in the context of classroom management, produces changes in teaching/teaching style?*

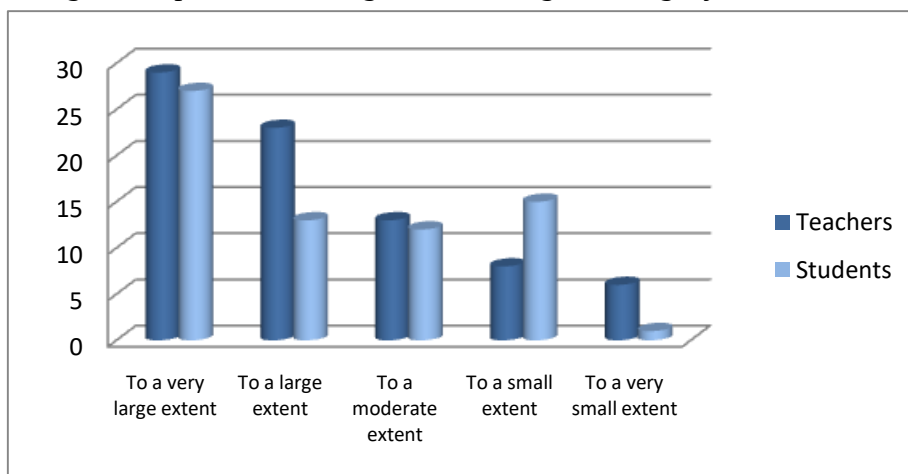


Fig. 3. Teachers' and students' perceptions of the extent to which digitization brings about changes in teaching/teaching style

The responses recorded are similar to those recorded for the previous item, again demonstrating a greater awareness on the part of teachers of the significant implications of digitization, which can be both positive and negative in nature, on their teaching style.

We appreciate that, capitalizing on the teaching experience gained especially during the pandemic, teachers are adjusting their teaching style to integrate digital resources and online learning platforms. They are making more use of interactive methods, visual presentations and educational games, which can capture students' attention and interest and facilitate understanding of concepts. This change can make the teaching style more dynamic and adapted to the needs of the digital generation.

At the same time, integrating modern technology into teaching can help students to be more involved and responsible for their own learning. By adopting a less directive teaching style, teachers provide students with more space for independent exploration and access to online resources, developing their autonomy in learning and critical and independent thinking skills.

Relatedly, we were interested in teachers' and students' views on the *effects of digitization on their learning style*. As can be seen from the figure below, a significant and roughly equal number of students and teachers are aware that digitization leads to significant changes (to a very large extent) in learning style.

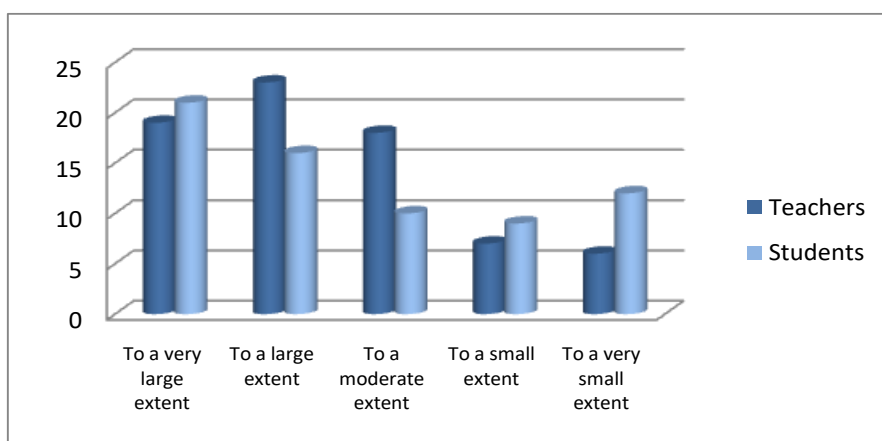


Fig. 4. Teachers' and students' perceptions of the extent to which digitization produces changes in learning style

The fact that about 30% of the student respondents believe that digitization affects their learning style to a small or very small extent, we believe can be justified by their rather low metacognitive and reflective capacities. Thus, the need to be guided, mentored, helped to learn how to learn arises, as the digital environment is full of stimuli and distractions, which can make it difficult for students to focus on academic tasks and manage priorities. But digitization in education is enabling new ways of monitoring progress and managing classroom activities, such as tracking each student's progress through learning platforms or using automated assessment tools. This changes the role of the teacher from instructor to learning coordinator and facilitator. Teachers can use the data provided by these tools to adapt the teaching style to the needs of each student.

Our analysis also looked at respondents' perceptions of the extent to which digitization *affects communication strategies at classroom level*. As can be seen from the graph below, both teachers and students are aware that digitization is bringing about significant changes in the communication strategies used in the context of classroom management activities.

Communication facilitated by digital environments is different from face-to-face situations, it can be more formal or, on the contrary, it can be more open and collaborative, it can reduce certain communication barriers, it can be more prompt, but it can also bring certain challenges, as it lacks the nonverbal and paraverbal components.

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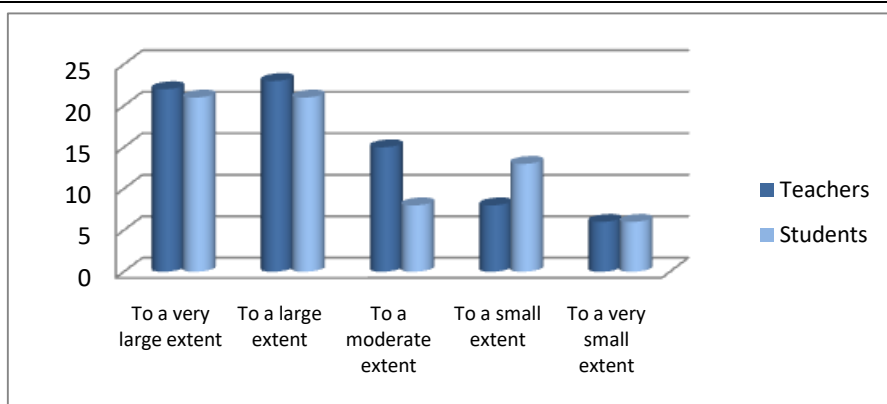


Fig. 5. Teachers' and students' perceptions of the extent to which digitization changes communication strategies

In order to provide additional validity to the answers obtained to the previous item, teachers were asked to identify, in order of importance, the main aspects that they consider need to be changed/improved in the context of the digitization of education, at the level of relationships and didactic/educational communication. Thus, the respondents rank the digital competences of teachers and students, respectively in first place, followed by learning and teaching styles, parents' digital competences and instructional strategies.

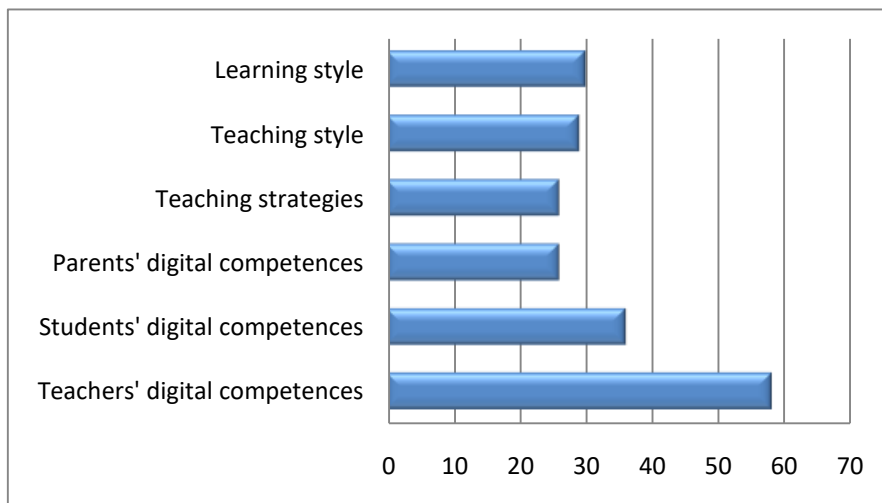


Fig. 6 Teachers' perceptions on aspects that they think need to be changed/improved in the context of digitization of education, at the level of didactic/educational relationships and communication

Another dimension examined both from the perspective of students and teachers was the extent to which *digitization brings about changes in the process of managing educational conflicts*.

Based on the collected answers, we find similarities between the perceptions of teachers and students, with the majority of respondents considering that digitization changes the conflict management process only to a moderate extent. From this we can deduce that digitization does not implicitly lead to a better resolution of conflict situations that may arise in the classroom, but neither does it prejudice their resolution.

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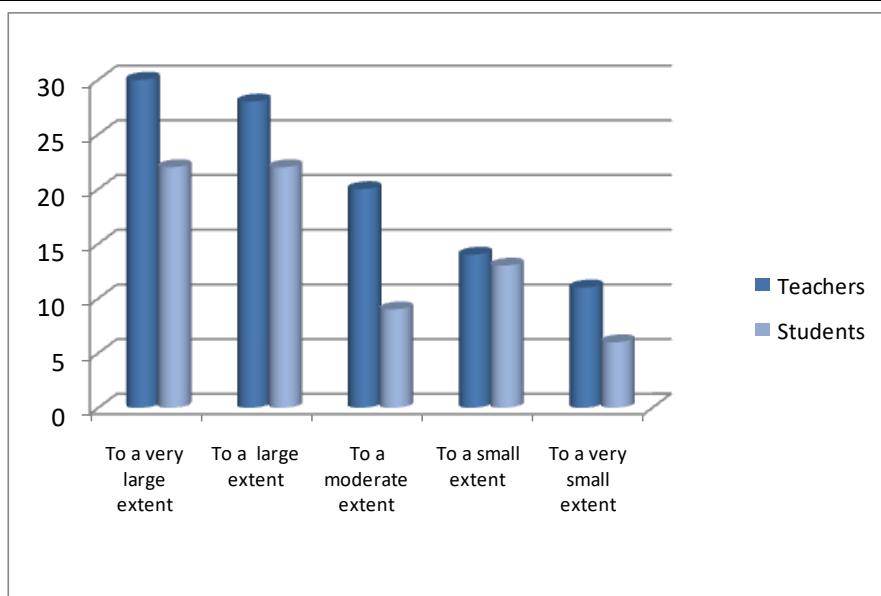


Fig. 7. Teachers' and students' perceptions on the extent to which digitization brings about changes in the conflict management process

Digital platforms can facilitate faster and more transparent communication between teachers, students and parents, which can help prevent conflicts by clarifying expectations and providing real-time feedback. However, virtual communication makes it difficult to interpret intentions and tone, which can lead to misunderstandings and escalation of conflict. This means paying close attention to how messages are phrased online and checking how they are understood. With regard to the extent to which *digitization produces changes in the process of managing time, stress and priorities*, the respondents' perceptions are illustrated in the figure below and again demonstrate a good correlation between the responses of the two respondent samples.

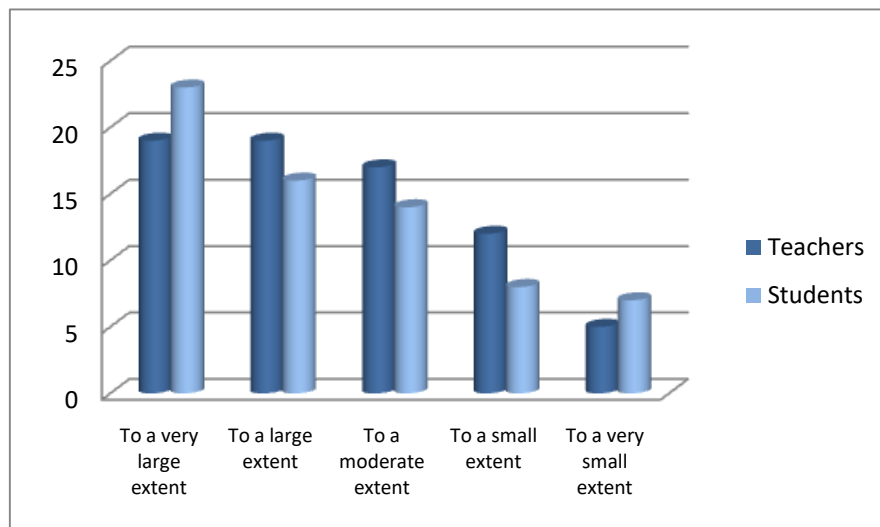


Fig. 8. Teachers' and students' perceptions of the extent to which digitization brings about changes in time, stress and priority management processes

Digitization provides quick access to information, educational materials and learning platforms, which can help both teachers and students to save time. However, prolonged exposure to screens and the multiple demands imposed by digital platforms can cause stress, fatigue and overload. At the same time, managing priorities is more difficult as the temptation to check social media platforms or multitask arises. This constant exposure can reduce productivity and efficiency in educational activities; thus, it is necessary to develop organizational and self-management skills, establish balance and limits in the use of technology to minimize the negative effects on mental and physical health.

Another aspect investigated was *the involvement of students and parents in the decision-making process*. From the analysis of the recorded responses, it can be seen that both students and teachers consider that digitization is bringing about changes in the involvement of students and parents in the decision-making process.

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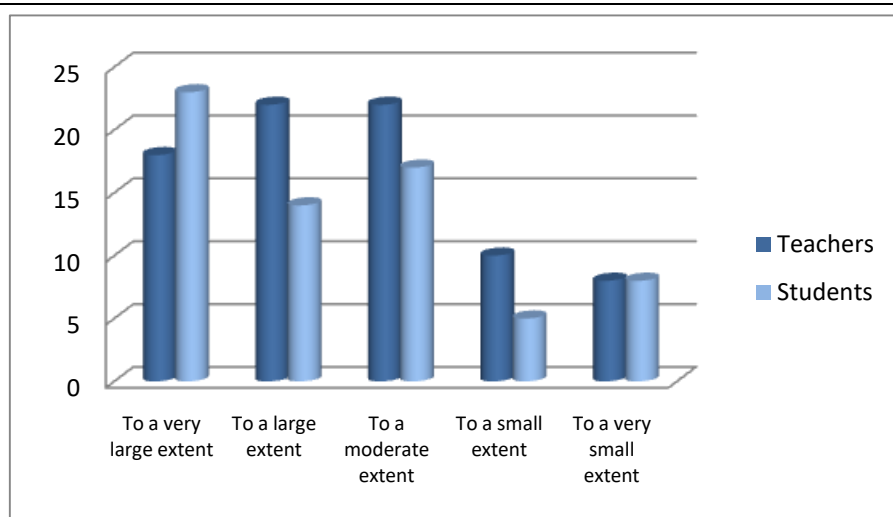


Fig. 9. Teachers' and students' perceptions of the extent to which digitalization produces changes in the process of involving students and parents in the decision-making process

Digitalization facilitates rapid access to information, which contributes to a better involvement of parents and students in the decision-making process in the school environment. They can be consulted more easily in establishing organizational aspects, in preparing activities, in choosing optional courses or in making immediate decisions. Also, time and space barriers are removed, and teacher-parent and teacher-student communication can be improved.

To the question *What are the main aspects that you consider to need to be changed/improved in the context of the digitalization of education, in relation to conflict management strategies, time, stress and priorities, respectively regarding the involvement of educational actors in the decision-making process at the student class level?* the teachers' responses referred mainly to the digital skills of teachers, students and parents, teachers' skills in identifying and addressing conflicts and, respectively, students' skills in managing conflicts.

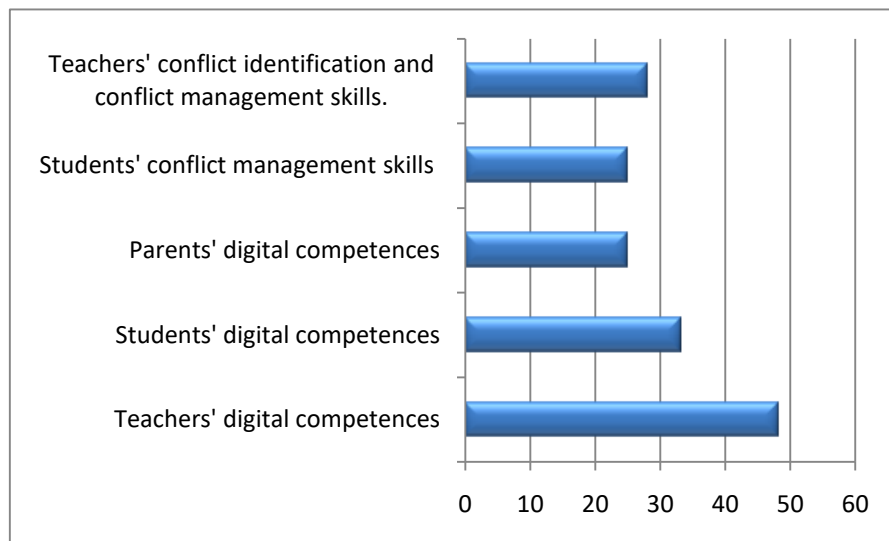


Fig.10. Teachers' perceptions of aspects that need to be changed/improved in the context of the digitalization of education

To the question regarding the main aspects necessary to *modernize the management of the student class and to achieve it in conditions of increased efficiency, from the perspective of digitalization*, the teachers' responses mainly aimed at ensuring an appropriate didactic and material base at the school and student families level (infrastructure, logistics, etc.), initial and continuous training of teachers and increasing the level of digital literacy for all involved factors. As for the students' responses, they were somewhat similar, indicating the need for actions such as: purchasing a modern and efficient device (smart board, laptop, video projector), ensuring internet access in classrooms, using interactive digital applications and increasing the level of digital skills, both for students and teachers.

Conclusions

The process of digitalization in education represents a strong trend in terms of reforming and modernizing the global educational environment. Today, more than ever, the effective use of digital

technologies and learning resources in education and training is considered a key factor in the educational process. The role of digital technologies and resources is to improve and add value to the teaching and learning processes. The results of the present research show that both teachers and students surveyed have a positive perception of the impact of digitalization on classroom management. This suggests a recognition of the potential of technology to transform education. Digitalization not only brings important changes in the teaching, learning and assessment process, but also redefines the role of teachers, transforming the educational process into a more dynamic one and truly focused on the needs of students.

Thus, considering the benefits, and without neglecting the inherent risks associated, we appreciate that the digitalization of education can be the opportunity through which the school opens up and becomes a learning space adapted to our times. We conclude, in full agreement with the author I.-O. Pânișoară that “the main challenge that the school must face in contemporary times is the digital world which, like any “new world”, must be discovered, must be conquered and must be shaped in order to be a “good home” for its inhabitants” (2020, p. 105)

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