

LEARNING IN DISTANCE EDUCATION: PERCEPTIONS OF 4TH YEAR
PORTUGUESE STUDENTS

*APRENDIZAGENS EM EDUCAÇÃO A DISTÂNCIA: PERCEPÇÕES DE ALUNOS DO
4º ANO DE ESCOLARIDADE PORTUGUÊS*

*APRENDIZAJE EN EDUCACIÓN A DISTANCIA: PERCEPCIONES DE LOS
ALUMNOS DEL 4º AÑO DE ENSEÑANZA PORTUGUESA*



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ABSTRACT: Due to the Covid-19 pandemic, distance learning began to take place. Hence, a questionnaire was conducted to 4th year of Portuguese school about their perceptions on this form of learning, with regard to technological resources and the types of tasks performed, the help provided to students, the obstacles that have arisen and the positive and negative aspects of distance learning. A qualitative research methodology was followed with the application of a questionnaire with open questions to three classes of that grade in three different schools in the north of Portugal. The results showed that there were several technological tools used for distance learning, both for synchronous classes and for carrying out school tasks. The lack of socialization with classmates, malfunctioning of technological resources, work overload and students' anxiety were the most negative aspects mentioned by them.

KEYWORDS: Covid-19. Distance learning. Perceptions. Students.

RESUMO: Com a pandemia da Covid-19, a aprendizagem passou a realizar-se a distância. Daí questionarmos as percepções de alunos do 4º ano de escolaridade português sobre essa aprendizagem, no que diz respeito aos recursos tecnológicos e aos tipos de tarefas realizados, à ajuda proporcionada aos alunos, aos obstáculos surgidos e aos aspectos positivos e negativos da aprendizagem a distância. Foi utilizada uma metodologia de investigação qualitativa com a administração de um questionário com questões abertas a três turmas daquele ano de escolaridade de três escolas do norte de Portugal. Os resultados obtidos permitiram verificar que foram várias as ferramentas tecnológicas usadas para a aprendizagem a distância, quer para as aulas síncronas quer para a realização das tarefas escolares. Já a falta de socialização com os colegas, os problemas de funcionamento dos recursos tecnológicos, a sobrecarga de trabalho e a ansiedade dos alunos foram os aspectos mais negativos apontados por eles mesmos.

PALAVRAS-CHAVE: Covid-19. Aprendizagem a distância. Percepções. Alunos.

RESUMEN: Con la pandemia de Covid-19, comenzó a tener lugar el aprendizaje a distancia. De ahí que cuestionamos las percepciones de los alumnos de cuarto año de enseñanza portuguesa sobre este aprendizaje, en cuanto a los recursos tecnológicos y el tipo de tareas realizadas, la ayuda brindada a los alumnos, los obstáculos que han surgido y los aspectos positivos y negativos del aprendizaje a distancia. Se utilizó una metodología de investigación cualitativa con la administración de un cuestionario con preguntas abiertas a tres clases de ese año de primaria en tres escuelas del norte de Portugal. Los resultados obtenidos permitieron comprobar que existían varias herramientas tecnológicas utilizadas para el aprendizaje a distancia, tanto para clases sincrónicas como para la realización de tareas escolares. La falta de socialización con los compañeros, los problemas con el funcionamiento de los recursos tecnológicos, la sobrecarga de trabajo y la ansiedad de los estudiantes fueron los aspectos más negativos mencionados por los estudiantes.

PALABRAS CLAVE: Covid-19. Aprendizaje a distancia. Percepciones. Alumnos.

Introduction

The Covid-19 pandemic and the social confinements that resulted from it meant that, from one moment to the next, students had to adapt to a new way of teaching and learning. As these were held at a distance, there were several technological tools that enabled them to participate in synchronous classes, to perform school tasks, and to create moments of asynchronous interaction with teachers and classmates, in a perspective of communication at anytime and anywhere. That is why we questioned the perceptions of 4th grade Portuguese elementary school students about the technological resources used in distance learning, the school tasks carried out in this context, the help obtained in them, the obstacles faced, and the positive and negative aspects of the distance learning experience. To obtain answers, it seemed appropriate to use a qualitative research methodology, with the administration of a questionnaire with open-ended questions to 4th year Portuguese basic education students from three classes in schools in the north of Portugal.

Intending with this text to present the study and the results obtained, we begin with a theoretical point about learning mediated by digital technologies in the context of Covid-19 and, next, we describe some effects of the use of digital technologies in distance learning from some studies carried out. In the next section, we describe the research problem and objectives, as well as the methodological options for the study and, finally, we present and reflect on the results obtained.

Digital technology-mediated learning in the Covid-19 context

The school, as a formal educational institution, is an educational context that promotes cognitive, relational, emotional, physical-motor and procedural learning that contribute to the full development of students. These learnings result from each student's individual construction of the knowledge of the common cultural heritage of a given social and historical context, a construction mediated by the pedagogical-didactic actions of teachers, but also from the work among students (COSME, 2019; COSME *et al.*, 2021). It is the importance of the acquisition of this different knowledge by students that justifies the act of teaching, learning and evaluating (COSME *et al.*, 2021).

With the emergence of the Covid-19 pandemic and the social confinements that it brought, "governments had to assume educational policies of replacing face-to-face teaching

by distance learning (involving remote and non-face-to-face activities) and to intervene at the level of assessment" (PACHECO *et al.*, 2021, p. 188, our translation).

They did so to guarantee continuity in the access, by the students, to the different knowledge and procedures of the common cultural heritage required to the school and that are part of the school curriculum. Thus, a "disruption in school education" (PACHECO *et al.*, 2021, p. 188) arose, caused by the need for rapid reconfiguration of the teaching and learning process through the use of various digital technological platforms and tools (NATIONAL COUNCIL OF EDUCATION, 2021). This has required a rapid effort of adaptation by teachers and students (FERREIRA; BASTOS, 2020; FONSECA *et al.*, 2021; PACHECO *et al.*, 2021; SANTOS; ZABOROSKI, 2020), which has contributed to the acceleration of the implementation of the European Commission's "Digital Education Action Plan" for 2021-2027 (EUROPEAN COMMISSION, 2020). However, as Ferreira and Bastos (2020, p. 112, our translation) point out, teaching through digital technological resources, arising from the closing of schools and the need for distance learning, has required from teachers and students "an effort to adapt the means of teaching, reconfiguring the preparation of classes, using alternative teaching and learning methods and other didactic resources, and changing roles of teachers and students in this process.”.

This teaching and learning process began to be accomplished by synchronous classes and asynchronous moments of teacher-students interaction (FERREIRA; BASTOS, 2020; PACHECO *et al.*, 2021). For this technological educational process, the computer and/or tablet with Internet access were the privileged means for accessing information, for the interaction of students and of these with their teachers, and for performing school tasks. With digital technologies, teacher-student communication was also encouraged anywhere and at any time, what Leyendecker and Silva (2017) call ubiquitous communication.

As the use of technological tools constitutes a means for the renewal of teaching practices (MONTEIRO; LEITE; LIMA, 2012), with them teachers were able to teach syllabus content with more diversified teaching methods, providing pedagogical conditions for teaching to focus on students and their different needs and to build quality learning (CONSELHO NACIONAL DE EDUCAÇÃO, 2021). Thus, with digital technological tools, learning can take place in a more active and participatory way by students, including: viewing and discussing videos available on the Internet; debates on program topics or on issues of interest to students and/or the reality in which they live; quizzes, Wikis and e-portfolios; online educational games; use of Kahoot; development of research projects in small groups; individual research or in small

groups on topics or problems of interest to students and/or the current reality, among others (FERREIRA; BASTOS, 2020).

These activities for the construction of learning result from distance interactive processes of students with their peers and of these with their teachers, facilitating the achievement of significant learning by students. On the other hand, this "new normal" of teaching and learning processes (PACHECO *et al.*, 2021), where the use of digital technologies is the compass of learning (OECD, 2019), has allowed teachers to supervise and guide students in the performance of the various school tasks and, thus, in the achievement of their learning. It also enabled the assessment of students' learning processes, allowing continuous feedback on what they needed to improve or correct and the regulation of said processes (AMANTE; OLIVEIRA, 2019).

Effects of using digital technologies in distance education on student learning

Distance teaching and learning enable the use of more active methodologies for students, greater autonomy in learning, and greater flexibility in students' time management (FLORES *et al.*, 2012). But it also brought constraints verified in the learning conditions of the various students and in their emotional well-being, as a result of the social distancing and the absence of face-to-face interaction of students, with consequences on the quality of learning (FLORES *et al.*, 2021; FONSECA *et al.*, 2021; PACHECO *et al.*, 2021; SANTOS; ZABOROSKI, 2020).

This new way of teaching and learning implies that all students have access to a computer and the internet so that they can participate in synchronous classes and carry out asynchronous interaction for communication among classmates and with teachers. Since the current school is attended by students from different economic and social groups, the lack of access to these tools by those who are economically deprived, creates situations of inequality for the achievement of learning with quality, and may culminate in their school failure (FONSECA *et al.*, 2021; SANTOS; ZABOROSKI, 2020). For the inequality and school exclusion of these students to be avoided or decreased, schools or country governments had to guarantee the equipment that these students needed, in order to ensure equal learning opportunities (CONSELHO NACIONAL DE EDUCAÇÃO, 2021). On the other hand, students had to make an effort to adapt to online platforms and digital tools, since the implementation of these tools requires preparation, training, and adequate resources (LIM, 2020).

The isolation of students at home, prevented from socializing and interacting face-to-face with classmates and teachers, led to "great difficulty in reconciling leisure and non-face-to-face study, culminating in a learning failure that is closely linked to diseases such as depression and anxiety" (SANTOS; ZABOROSKI, 2020, p. 46, our translation). The occupation of the same space at the same time by parents and siblings, with the shared use of the same equipment, hinders learning and can contribute to anxiety and depression in students (FONSECA *et al.*, 2021; SANTOS; ZABOROSKI, 2020). Still the need to acquire digital skills for the use of technological tools and to adapt to distance learning propitiates anxiety. It is in this sense that Flores *et al.* (2021, p. 14, our translation) state that

[...] increased anxiety, feeling of helplessness, difficulty concentrating or managing time in response to work overload, inability to interact and socialize with classmates and teachers, the need to spend many hours in front of the computer, difficulty exercising, with negative impact on students' health and well-being.

In fact, for there to be conditions for meaningful learning, students must be motivated to learn, feel emotional well-being, and have environmental and material conditions that allow them to perform the learning necessary for the continuation of their studies and their personal and social formation.

Research problem and objectives

Portugal, similarly to the rest of the world, is facing the Covid-19 pandemic and, in these almost three years of its evolution, the Portuguese government has already decreed two periods of social confinement, with the respective closure of schools. In these periods of social confinement, the teaching and learning process was continued in the distance modality, through online platforms such as Zoom or Teams and digital technological tools (CONSELHO NACIONAL DE EDUCAÇÃO, 2021). Being aware of the implications that this rapid change in the way of learning has had on 4th grade students, aged 9 or 10 years old, we delimited the following research problem: what are the perceptions of 4th grade students about distance learning?

The objectives we set ourselves for the study were the following: to verify the technological resources that 4th grade students mentioned for distance learning; to identify the school tasks they mentioned for distance learning; to identify the help these students had for

completing school tasks at home; to verify their perceptions about the positive and negative aspects of distance learning and teaching.

Methodological options for conducting the research

Considering the defined research problem and the objectives set out, it seemed appropriate to choose a qualitative research methodology (AMADO, 2017) through the administration of a questionnaire with five open-ended questions to 4th grade students. The choice of these students is justified because there are few studies on the perceptions of students of this grade about distance learning in the context of Covid-19 and because they are students who already have the necessary language and writing skills to answer open-ended questions.

The first version of the questionnaire contained one question on the technological resources used in distance learning, another on the school tasks performed, another on the help obtained in performing school tasks, another on what students liked best in distance learning and, finally, another on what they liked least in distance learning. The questionnaire was validated by administering it to 4 students from a 4th grade class who were not going to participate in the research, to check the clarity of the questions, their comprehensiveness, and the need to change the wording of some questions. It was possible to see that the students understood the questions and that they provided the intended information. Two 4th grade teachers were also asked to analyze the questionnaire, and they found it clear and with pertinent questions regarding the research objectives.

Before administering the questionnaire to the students, the school directors and the respective class teachers were informed of the questionnaire's objectives and asked to authorize the administration of the questionnaire, ensuring anonymity and confidentiality of the data collected (LIMA, 2006). Thus, the administration was carried out in October 2021 to three 4th grade classes of three 1st cycle elementary schools in northern Portugal, and a total of 74 students responded. Of these, 43 were male and 31 were female, and 72 students were 9 years old and 2 were 10 years old. All resided in the location area of the school they attended. The questionnaire was personally administered by the researchers (AMADO, 2017) in their respective classrooms, and they personally collected it after the completion of the responses.

The data collected with the questionnaire were submitted to content analysis procedures (BARDIN, 1994; ESTEVES, 2006), from which the following categories and subcategories emerged: 1 - tools used in learning, with the following subcategories: technological resources

used; school materials used; 2 - school tasks performed with the following subcategories: tasks with digital technological resources; tasks with other resources; 3 - home work procedures, with the following subcategories: procedures with computer and cellphone; procedures with television; procedures with computer; 4 - obstacles to the use of technological resources, with the following subcategories: computer malfunction; use of other resources due to unavailability of computer; 5 - help in doing school work, with the following subcategories: help from household; help from other people; no help; 6 - positive aspects of distance learning, with the following subcategories: tasks done; use of technologies; being with teacher and colleagues; 7 - negative aspects of distance learning, with the following subcategories: not being with colleagues; noises during online classes; harm to health; types of school tasks. Since several students indicated the same ideas in several answers, the frequencies were counted (ESTEVEZ, 2006).

The words of 4th grade students about distance learning

Distance teaching and learning required an effort to adapt the students of the 1st cycle of basic education to this new way of learning, considering that it is at this stage that they begin the learning of the common cultural heritage that they need for further studies and for active and responsible citizenship in a democratic society (COSME, 2019).

Having verified the perceptions of 4th grade students about distance learning, the results obtained are then presented by categories that emerged from the analysis of the data collected.

Tools used in learning

When the 74 students were questioned about the tools used in distance learning, most of them (46) answered computer and tablet: "*I used a tablet and a computer*" (student 3), and 12 students also mentioned the cellphone and television: "*I used the computer, cellphone, tablet and television*" (student 28). Still 5 students mentioned having used the computer and the cellphone for classes and for school work: "*the resources I used for classes and for school work were the computer and the cellphone*" (student 2). In fact, distance teaching and learning, motivated by the closure of schools in the context of the Covid-19 pandemic, required the use of technological tools, namely online platforms such as Teams and Zoom, the computer, tablet and cellphone to continue their learning through synchronous classes and asynchronous

moments of interaction (CONSELHO NACIONAL DE EDUCAÇÃO, 2021; FERREIRA; BASTOS, 2020; FLORES *et al.*, 2021; SANTOS; ZABOROSKI, 2020). It is for these reasons that Fonseca *et al.* (2021, p. 2, our translation) refer that "Digital Information and Communication Technologies (DICT) have played an important role in the continuity of classes remotely". Also, the television content program "#Estudo em Casa" (#HomeStudy), under the responsibility of the Portuguese Ministry of Education, which consisted of classes taught by teachers of all subjects for all school years from pre-school to primary and secondary education to support distance teaching and learning, were a learning support mentioned by students (NATIONAL COUNCIL OF EDUCATION, 2021). In addition to these technological tools, 11 students reported using traditional textbooks, workbooks, notebooks, pencils, ballpoint pens, and erasers for classes and for completing school assignments.

School tasks performed

With regard to school tasks for distance learning, we distinguish those that involved technological resources and others in which other resources were used, for 39 students said they had done "*book sheets, read texts, an online game which is Kahoot, watched videos on YouTube, researched on the Internet*" (STUDENT 37). On the other hand, 14 students mentioned that "*the tasks were doing book sheets, online games (quizzes), reading texts, internet research, making videos, PowerPoints related to themes*" (STUDENT 9). In fact, distance learning incites the use of active teaching and learning methods for students (FERREIRA; BASTOS, 2020; MONTEIRO; LEITE; LIMA, 2012), taking into account the individuality of each one (COSME *et al.*, 2021; SANTOS; ZABOROSKI, 2020). Digital technologies enable teachers to have another educational intentionality in their work (COSME *et al.*, 2021), leading to the realization of diversified learning tasks that are intended to be appropriate to the needs of different students. In a logic of pedagogical renewal, the teaching and learning process involves students, individually or in small groups, in the construction of their learning, which increases their autonomy and co-responsibility for it (COSME *et al.*, 2021; FERREIRA; BASTOS, 2020; MONTEIRO; LEITE; LIMA, 2012). But still 22 students mentioned other tasks, such as book sheets, group work, the lessons of the television program "#HomeStudy", writing texts and solving math exercises.

Working Procedures

Technological resources were used for different procedures. The computer was used for distance classes and for students to talk to their classmates. The cellphone and the tablet, also used by the students to attend classes, were the means of sending work to the teachers. The television also allowed students to watch the program "#Home Study": *"I used the computer to talk to my classmates and the teacher and I used the cellphone to send homework"* (STUDENT 24); *"To have classes I used the computer and then, when I had homework, I took a picture with my cellphone and sent it by computer"* (STUDENT 19); *"I used the computer and cellphone in class with the teacher. But in "Home Study" I watched it on TV"* (STUDENT 43); *"I used the computer to watch class and I used the printer to send the teacher my assignments."* (STUDENT 74).

Obstacles to the use of technological resources

Although the computer and internet access are essential for distance teaching and learning to occur, 4 students mentioned the computer malfunction as an obstacle to learning, leading them to have to use the tablet or cellphone: *"I used a computer of my grandparents to use in Teams and one day I went to school because I went to take a tablet because the computer was not working well"* (STUDENT 4); *"I used the computer, but one day I used the cellphone because I could not use the computer"* (STUDENT 43).

In fact, the technical flaws in the computer and the internet create obstacles to students' achievement of learning, which was also verified in the study by Fonseca *et al.* (2021) and in that of the *Conselho Nacional de Educação* - National Education Council (2021). When doing school work, most students mentioned having had help from their father or mother, as well as siblings, although 4 also mentioned other relatives: *"When doing school work in the period when I had classes at home, I had help from my mother and father"* (STUDENT 1); *"I had help from my father, my sister and my mother, who were the people who were confined to me"* (STUDENT 11); *"My mother, uncle, father and cousin"* (STUDENT 13).

Still four students reported having been helped by the teacher: *"yes, I had the teacher's help"* (STUDENT 51) and three reported not having anyone's help: *"no, because we couldn't call the parents to help us"* (STUDENT 25).

In a specific context of adaptation to a new way of learning, help for students is important, because it allows them to overcome difficulties and reduce their anxiety in the face of the new challenges posed by distance learning.

Positive aspects of distance learning

For 10 students, what they liked most in distance learning were *"the games inside the class, like 'Who wants to be a millionaire' and also being able to be on the computer"* (STUDENT 17), 12 students reported having liked the distance and television classes, the work at home, watching movies, making videos and the tasks that the teachers asked them to do: *"I liked everything: I liked the classes on television and I liked watching movies and making videos"* (STUDENT 22); *"I liked working at home, I liked the assignments the teacher asked them to do and I liked the classes"* (STUDENT 2).

Another 10 students reported that they liked *"messaging with the computer"* (STUDENT 15), 8 reported *"I really liked playing quizzes and having virtual classes"* (STUDENT 37) and 6 students liked the projects done in small groups, the songs they made, the riddles, origamis, drawings, texts and games: *"I liked making music, discovering new things and making riddles"* (STUDENT 19); *"origamis, drawings, texts, games, music and project 'alcohol, tobacco and drugs'"* (STUDENT 25); *"I liked learning new things at a distance and doing group work"* (STUDENT 28).

Still 6 students mentioned *"talking to the Chat, being at home playing games and being around the family"* (STUDENT 31) and 5 mentioned *"I liked being with my classmates and teachers by Teams, doing the assignments and handing them in"* (STUDENT 9).

It can be seen, therefore, that distance learning involves students in diversified tasks using digital information and communication technologies, making them more appealing and participatory for students, which can contribute to better and more diversified learning (COSME *et al.*, 2021; FERREIRA; BASTOS, 2020).

Negative aspects of distance learning

There were several aspects that students liked least about distance learning. The most mentioned by students was not being able to be with their classmates (27 STUDENTS): "*not being able to play with my classmates*" (STUDENT 14). Distance teaching and learning generated social isolation of students that led in some cases to emotional problems such as anxiety and depression, as mentioned in the studies of Flores *et al.* (2021), Santos and Zaboroski (2020) and Fonseca *et al.* (2021). Also 11 students mentioned having to be confined at home as a negative aspect: "*I didn't like being closed up at home*" (STUDENT 57). Still 10 students indicated the technical failures of the computer and their micro, the internet failures and the interferences during the classes: "*I didn't like it because the internet was always going down*" (STUDENT 6); "*What I liked least was the interferences during classes*" (STUDENT 12); "*I didn't like it because we were without a mic and sometimes we couldn't hear*" (STUDENT 13); "*I didn't like that the computer went down and when I was talking my computer would turn off*" (STUDENT 15); "*What I liked least was when we were talking, playing or something like that, or when some of our classmates would text during class or when they misbehaved and the teacher would yell and I couldn't concentrate on what I was doing and sometimes the noise from home would also deconcentrate me*" (ALUNO 5).

The fact that students are at home and share the same space with the rest of the family members and the interference during classes were factors pointed out by Fonseca *et al.* (2021) and Santos and Zaboroski (2020) as causing the students' lack of concentration in learning, which may culminate in emotional problems and school failure. Still 6 students indicated as a negative aspect of distance learning the completion of math and book work, the completion of worksheets, the "#HomeStudy" classes, and also the overload of school work: "*Sometimes we worked more than the schedule called for*" (STUDENT 24); "*Math work, work in books and being at home*" (STUDENT 25); "*In Home Study I didn't like the classes because they were a bit dry*" (STUDENT 36); "*What I liked least was that I didn't learn well*" (STUDENT 52).

The overload of school work that distance learning implied was also verified in the studies conducted by Flores *et al.* (2021) and by Santos and Zaboroski (2020). The latter authors even mention that "the big issue is that many students have great difficulty in reconciling leisure and non-presence study, culminating in a learning failure that is closely linked to diseases such as depression and anxiety" (SANTOS; ZABOROSKI, 2020, p. 46, our translation).

Hence 1 student mentioned anxiety attacks and sedentary lifestyle caused by not leaving home, which would have led him to gain weight: "*I did not like having anxiety attacks, being at home made me put on weight*" (ALUNO 19).

Distance learning results from the involvement of students in different school tasks, more attractive to students and more participated in by them, if they have the technical conditions to do so, which can enable more significant learning because it was built by the students. However, the social isolation of the students and the difficulty in managing study and leisure time may become obstacles to this kind of learning.

All these negative aspects mentioned by the students, which are also mentioned in other studies, have to be reflected upon by the governments of the countries and by the teachers in distance learning, in order to create the possible conditions to avoid or minimize them.

Final remarks

The change in the modes of learning achievement resulting from the shift to distance learning in the context of the Covid-19 pandemic led us to question the perceptions of Portuguese 4th grade students about their learning. The results obtained allowed us to perceive that those students had the computer, tablet, cellphone, and also the television program "#HomeStudy" as means for the continuation of their learning.

These technological resources allowed students to perform diversified school tasks, such as games, Quizzes, such as Kahoot, watching and making videos, projects and research on topics, in addition to more traditional tasks such as solving textbook sheets, exercises and reading texts. The students indicated these types of tasks as positive aspects of distance learning, for which they had the help of their parents, siblings and even other family members, as well as the use of digital technological tools. As negative aspects, the students mentioned social isolation, with the lack of interaction with classmates and teachers, technical problems related to malfunctioning computers and internet failures during classes, noise during classes, caused by other family members at home and classmates talking at the same time or sending messages, which sometimes distracted them. The anxiety caused by the need to adapt to the new educational reality and the fact that distance learning requires more work from students were also considered negative aspects.

The results of the study presented here, along with the results of other research, will have to be taken into consideration by schools, teachers and national authorities so that the most

negative aspects can be reduced in other moments of distance teaching and learning, so that students can do more and better learning.

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