



UNIVERSIDADE CATÓLICA PORTUGUESA

Digital Transformation in Portuguese Shadow Education

The Tutor Perspective

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Católica Porto Business School

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Abstract

Often metaphorically called “shadow education”, the global private tutoring market was estimated to be valued at 146,1 billion dollars in 2022, making it a significant contributor to the economy. Despite this, there is a clear lack of literature on this topic.

The COVID-19 pandemic and resulting lockdowns had a profound impact on society. Tutors were forced to adapt and provide online tutoring which accelerated digital transformation in this sector. However, it is still unclear what is happening post-pandemic, particularly in Portugal, where the government ignores this sector, and the literature is scarce. This study, therefore, aims to investigate the impact of COVID-19 on the digital transformation of shadow education operations in Portugal, as well as its future implications.

To better understand the problem at hand, a literature review was conducted, followed by a qualitative approach with 51 in-depth interviews with tutors providing tutoring services to secondary education students (nomenclature defined by UNESCO that includes “Ensino básico” and “Ensino secundário”).

The findings demonstrate that COVID-19 accelerated the digital transformation in the shadow education sector in Portugal due to the forced adoption of online tutoring which required the use of new programs and software. Most of the tutors interviewed regard the digital transformation induced by COVID-19 as an ongoing process, with its impact limited by the negative performance of the schooling system during the lockdown period.

Keywords: Shadow education, tutoring, COVID-19, digital transformation, online education, Portugal

Total of words: 9975

Resumo

Muitas vezes denominado metaforicamente de “educação sombra”, o mercado global de explicações privadas foi avaliado em 146,1 mil milhões de dólares em 2022, tendo uma contribuição significativa para a economia. Apesar disso, verifica-se uma clara falta de estudos académicos sobre este assunto.

A pandemia de COVID-19 e os consequentes confinamentos tiveram um profundo impacto na sociedade. Os explicadores foram forçados a se adaptarem e a disponibilizar explicações online, o que acelerou a transformação digital neste setor. Contudo, ainda não é claro o que está a acontecer no período pós-pandemia, especialmente em Portugal, onde o governo ignora o setor das explicações e a literatura é escassa. Assim, este estudo foca-se em investigar o impacto que a COVID-19 teve na transformação digital das operações do setor de educação sombra, bem como as futuras implicações.

Para entender melhor o problema em questão, foi realizada uma revisão da literatura, seguida de uma abordagem qualitativa com 51 entrevistas a explicadores que prestam serviços de explicação a estudantes do ensino básico e secundário (nomenclatura definida pela UNESCO como “secondary students”).

Os resultados obtidos demonstram que a COVID-19 acelerou a transformação digital no setor da educação sombra em Portugal devido à adoção forçada de explicações online, o que exigiu o uso de novos programas e software. A maioria dos explicadores entrevistados viu a transformação digital induzida pela COVID-19 como um processo contínuo, cujo impacto foi limitado pelo desempenho negativo do sistema escolar durante o período de confinamento.

Palavras-chave: Educação sombra, explicações, COVID-19, transformação digital, educação online, Portugal

Total de Palavras: 9975

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List of Acronyms

ATLs – Leisure-time activity centers

CAE - Portuguese Classification of Economic Activities

INTx – Interviewee n^o x

OBJx – Objective n^o x

Qx – Research question n^o x

Chapter 1

Introduction

1.1 Contextualisation and Motivation

In the academic literature, the term “shadow education” is frequently used as a metaphor for private tutoring, as it mirrors the mainstream: as the curriculum changes in the mainstream, so the shadow education changes (Bray, 2021a). Shadow education can be defined as paid tutoring lessons in academic subjects for students in secondary levels (Lower secondary and Upper secondary education according to the International Standard Classification of Education by UNESCO).

Additionally, it is considered that private tutoring has a significant impact on the global economy. On the one hand, it has been observed that access to tutoring and the consequent improvement in grades can determine not only academic achievement but also access to subsequent stages of education and prestigious institutions, perpetuating existing societal inequalities. On the other hand, the tutoring sector also provides an additional source of income for some tutors, including teachers, and full-time employment for other tutors (Bray, 2006).

In Portugal, tutoring has become increasingly prevalent with over 60% of the 12th grade secondary students receiving 10 hours or more of tutoring per week in 2009, resulting in a financial burden of 200-250€ per month (Bento, 2009).

The development of technology has led to the expansion of online tutoring, with its own advantages and disadvantages compared to in-person tutoring (Glotova et al., 2022).

As United Nations Secretary-General asserted, the COVID-19 pandemic has disrupted education on an unprecedented scale (United Nations, 2020) forcing the closure of schools and adoption of emergency remote teaching to ensure children continued to receive an education. This disruption has also impacted the use of digital technologies, which played a crucial role in enabling people to stay connected (Sheth, 2020).

In response to the pandemic, the long-established in-person tutors were forced to transition to online (Sharma, 2022), accelerating the digital transformation of the tutoring sector. In fact, tutors had stronger incentives to innovate due to the greater threat to their incomes and less bureaucratic constraints compared to public-sector teachers, resulting in a rapid response to the adoption of online tutoring (Bray, 2022).

While numerous studies have focused on the impact of COVID-19 on the formal education system, there is a paucity of literature on the impact on shadow education. This deficiency is evident in Portugal with limited information available about the impact that COVID-19 had on the digital transformation of the tutoring sector. This situation can be attributed to this sector being viewed as the consequence of the government's failure in the public school system and to the reluctance of tutors to divulge information due to tax evasion. (Zhang & Bray, 2020).

1.2. Research definition

The aim of this study is to address this research gap by investigating the impact of COVID-19 on the digital transformation of shadow education operations in Portugal, as well as its future implications.

The research questions are: “How did COVID-19 accelerate digital transformation in shadow education operations in Portugal?” and “Is the digital transformation induced by COVID-19 a one-time occurrence that has been reversed or is it an ongoing process?”.

Specific objectives were outlined in order to answer the research questions: investigate the reasons for the occurrence of the tutoring phenomenon in Portugal and determine whether there is a need for regulatory measures in this sector; analyse the changes that COVID-19 has caused in the shadow education sector during the lockdown in Portugal; investigate whether the implementation of technology during COVID-19 has continued or ceased in the aftermath of the pandemic in this sector, and identifying the reasons behind this; and identify the potential trajectory of digital transformation will look like in the shadow education sector in the future.

1.3. Methodology

To conduct this research, a qualitative analysis approach was chosen as it best suited the proposed research objectives.

The chosen data collection method was semi-structured interviews as it allows more flexibility and enables the adaptation of the questions throughout the conversation. A total of 51 tutors who had been tutoring previously to the pandemic, and continue to do so after, were interviewed through online video conference software such as Zoom, Skype, and Google Meets, with one interview conducted in-person.

For the analysis of the data collected, the interviews were manually transcribed, and manual coding was found to be the most efficient approach. The methodology for this study is better detailed in chapter 3.

1.4. Dissertation Outline

This dissertation is divided into 5 chapters. The first chapter provides the introduction and an initial contextualization of the research topic, defining the relevance of the study.

In the second chapter, a literature review is conducted on the topics of COVID-19, its implications on education, and digital transformation. The chapter also includes an analysis of the research on shadow education globally and in Portugal. The relevant aspects of the literature on these topics were explored to gain a comprehensive understanding of the previous research and identify areas where studies were lacking.

The third chapter presents the methodology: firstly, with the research questions and objectives, followed by the research method for data collection and data analysis.

Posteriorly, the fourth chapter presents and analyses the results collected from the interviews.

In the fifth chapter, the results obtained are discussed, and conclusions are drawn, the limitations of this dissertation and suggestions for further research are presented.

Chapter 2

Literature review

In the subsequent section, the implications of COVID-19 on education will be explored, with a specific focus on the Portuguese context. The 2nd and 3rd sections will focus on the Shadow Education sector, outlining its definition, reach in Europe, and regulation. The discussion will delve more deeply into the Shadow Education sector in Portugal and assess the impact that COVID-19 had on this sector. In the final section, the concept of digital transformation will be presented and its interconnection with COVID-19, education and shadow education sector will be established, concluding with an examination of the advantages and disadvantages of online tutoring.

2.1. Implications of COVID-19 on Education

The COVID-19 pandemic was a major global event that posed a threat to public health and resulted in widespread disruption. Many experts have referred to the pandemic as a “black swan” event (Taleb, 2007), due to its exceptional nature and the significant impact it has had on the economy and society (Krishnamurthy, 2020).

The measures imposed by the government to curb the spread of the virus such as lockdowns, social distancing, and stay-at-home requests led to significant changes in the economy. On the one hand, consumers prioritized personal protection through the use of face masks and disinfectants (Funk et al., 2009) and increased the use of Internet, social media, and online shopping. On the other hand, internet-based companies experienced a surge in sales (e.g., online

streaming) while many other businesses struggled to stay afloat (Donthu & Gustafsson, 2020).

Nevertheless, the outbreak of the COVID-19 pandemic prompted governments worldwide to enforce measures such as social distancing and confinement, which resulted in the abrupt shift from in-person to remote teaching in schools and universities (Zimmerman, 2020). This sudden and temporary change was dubbed “emergency remote teaching” by some researchers, separating it from courses carefully planned and structured to only be taught online (Hodges et al., 2020). Furthermore, to effectively deliver quality online teaching instruction, it’s crucial to understand how a home environment can be adjusted to a professional setting, including the best combination of microphone and sound (Dwivedi et al., 2020).

Before the pandemic, only a few educational institutions utilized remote learning, mainly due to concerns over its effectiveness and the perceived barriers of technology (Wingo et al., 2017). However, research showed that blended learning can have positive outcomes compared to traditional classroom teaching (Means et al., 2013).

The COVID-19 pandemic created an opportunity to strengthen global connections (Luthra & Mackenzie, 2020) and to establish global virtual education programs (Whalen, 2020). Nevertheless, it also posed a significant challenge for teachers with little to no technological knowledge and training, as well as students who were suddenly forced to adapt and learn new technologies to be successful (Govindarajan & Srivastava, 2020). Teachers had to convert their teaching materials to a suitable format for online classes (Dwivedi et al., 2020).

According to a study conducted during the first weeks of the lockdown in Germany, Austria, and Switzerland, the majority of students reported a low level of learning at home, with only two hours or less per day. The study also

highlighted that responsible students were more likely to have better grades (Huber & Helm, 2020).

In Portugal, during the academic year of 2020/2021, students surveyed pointed out study conditions at home and motivation as the least favourable factors for their learning, with a total of 33.4% of 9th grade students reporting that they lacked the motivation to do their homework (IAVE, 2021).

In another study, approximately half of the enquired Portuguese professors (52%) perceived that the learning was not compromised as a whole, but 70% of them noticed that students faced more difficulties in learning. The lack of adequate digital devices for students and motivation of the students were the most challenging aspects for the majority of teachers, with 66% of them considering it a hard and very hard challenge. (CNE, 2021). Additionally, Flores et al. (2021) noted that the lack of time and adequate digital training were also significant factors affecting learning during lockdown. Despite dealing well with the situation, 81.4% of the teachers enquired admitted feeling tired.

2.2. Shadow Education

In educational literature, supplementary education or private tutoring is often metaphorically referred to as "shadow education" because it replicates the mainstream curriculum. The expression sheds light on the limitations of the mainstream sector and provides alternative solutions to address some of these issues (Bray, 2021b).

This paper will use the terms "supplementary education," "private tutoring," and "shadow education" interchangeably. Although there are several definitions, these terms will be defined in this paper as the lessons received outside school in

the academic subjects, provided commercially by private tutors or tutoring centers (Bray, 2021b; Ireson & Rushforth, 2011) for students in secondary levels (Lower secondary and Upper secondary education according to the International Standard Classification of Education by UNESCO).

The growth of this sector can be attributed to the increasing demand for higher education degrees for better-paying jobs and the underfunding of the public education system (Bray & Kobakhidze, 2014; Pimlott-Wilson & Holloway, 2021). Additionally, competitiveness in societies with greater mobility of labour and skills and economic pressures are also contributing factors (Bray, 2021).

In Europe, shadow education has become more significant but there is still a paucity of work, insufficient availability of data, and a neglect of economic questions surrounding the supplementary education business, especially when compared to the extensive literature on education (Bray, 2021b; Hallsén & Karlsson, 2019; Pimlott-Wilson & Holloway, 2021). Shadow education differs significantly from country to country and a geographic pattern can be observed in Europe with Southern European countries, including Portugal, having higher rates of shadow education, with tutoring being a “normal practice” in Greece (Tsiplakides, 2018). In contrast, Northern Europe is the least affected by this phenomenon, which can be attributed to schools adequately meeting students’ needs, students receiving extra support within the public-school environment, and the absence of high-staking exams in countries like Finland (Bray, 2021b).

The government’s attempts to regulate the industry vary widely. Some countries, like South Korea, have tried to prohibit it, while others, like Canada opt to ignore it. Still, some countries try to find common ground and regulate, creating policies to legitimize the sector (Yamato & Zhang, 2017; Zhan, 2014; Zhang & Bray, 2016).

Although tutoring is seen as a long-term support, its intensity can vary, with a peak often seen before tests and high-stakes examinations. The number of hours

varies depending on several factors, including the student's age, the parents' aspirations, the need to occupy their children, or on the reasons for which the tutoring is necessary (Bray, 2021b).

Before the pandemic most tutoring worldwide was delivered face-to-face, as it appeared that this type of tuition was better suited for the vast majority of students. An increase in new modes of tutoring powered by technology was being seen, as children in remote locations with good internet access could receive the same service as their peers in suburban areas (Bray, 2021b; Ventura & Jang, 2010). However, it is argued that only autonomous and motivated children can benefit strongly from online tutoring, which is rarely the case with students who have difficulties (Bray, 2021b).

Higher-income families are more likely to spend money on tutoring turning shadow education as a means to maintain a competitive advantage for students who already are privileged and successful. Even if the school is private, families still feel that additional support is needed to secure superior social positions (Bray, 2021b). Evidence shows that private tutoring may exacerbate the social educational inequalities between higher and lower-income families, as the latter can't afford the same level of support as the former (Burch et al., 2007; Wiseman, 2021). Despite this, shadow education also offers several benefits, such as helping students improve their grades and keeping slow learners up to pace with their peers, boosting their motivation and self-esteem (Bray, 2013; Manasrah et al., 2022). It can even be seen as a means to develop talent (Bray, 2021b).

It is estimated that the global market for private tutoring in 2022 to be valued at 146,1 billion dollars with a compound annual growth rate of 9% (Global Industry Analysts, 2023). However, this lucrative sector has also been exposed to the economic shock caused by the COVID-19 pandemic (Pimlott-Wilson & Holloway, 2021). Advances in technology have changed the way supplementary education is delivered. A majority of students in Jordan (63%), for example,

believe that the shift to online learning has increased the need for private tutoring classes (Manasrah et al., 2022).

According to Pimlott-Wilson & Holloway (2021), the impact of COVID-19 on the supplementary education sector was felt in the UK. The reduction in demand for private tutoring led to an over-crowded supply market, forcing tutors to adopt several strategies to maintain their existing customers and attract new ones. These strategies included the use of marketing to increase visibility and the reduction of prices. As a matter of fact, qualified teachers and those with no prior experience saw the opportunity to increase their earnings during lockdown, even if it meant pricing their service at a lower cost. The transition to online tutoring proved to be successful and its feedback from parents helped tutors reinforce the value and quality of their service. The move to online tutoring also allowed tutors to reach a wider market across the country and many of them hoped to continue providing online tutoring for some students even after the pandemic.

2.3. Shadow Education in Portugal

In Portugal, secondary education is divided into two levels, classified by UNESCO as low secondary education “Ensino Básico” which encompasses 5th to 9th year and high secondary education “Ensino Secundário” which covers 10th to 12th year.

Costa et al. (2003) conducted a study aimed to understand the expanding shadow education phenomenon in Portugal and its dimension in four public schools. It was found that the majority of students received tutoring in at least one subject, with Mathematics being the most popular. The study also concluded that tutoring directly correlated to an improvement in grades.

In 2009, over 60% of secondary students in the 12th grade were receiving 10 hours or more of tutoring per week, representing a monthly financial investment of between 200-250 euros (Bento, 2009).

To avoid the perverse incentives of diverting the effort from classrooms to private tutoring, the Portuguese government implemented measures to regulate the activity, particularly for education professionals. In 1999, the accumulation of public and private employment in the education sector, especially in secondary education was regulated (“Portaria 612/1999, de 14 de Agosto”). However, the ambiguity of this regulation led to a new legal framework in 2005 which clarified that teachers cannot operate private businesses, including tutoring, if their students or others attending the same school are involved (“Portaria 814/2005, de 13 de Setembro”)(Neto-Mendes et al., 2008). Despite these measures, it was found that many teachers do not comply with the legal requirements (Silveirinha & Costa, 2007). Since 2005, there have not been additional legal instruments approved by the government to address this issue which corroborate the shadow education nomenclature.

In Portugal, there are three main types of supplementary education centers: ATLS (Leisure-time Activities Centers), Study Centers (“Centros de estudo”), and Tutoring Centers (“Centros de explicações”). ATLS are considered to be social support establishments that provide specific activities to help develop children’s personality (Portal ePortugal, 2023). Study Centers focus on providing an additional support for multiple school subjects with the aim of improving students’ school success. (Matias, 2013), while Tutoring Centers typically offer individual or group tutoring sessions for specific subjects.

Tutors that are independent workers have a different tax regime compared to supplementary education centers, for example, in terms of the Portuguese VAT, known as IVA. Students who receive tutoring sessions from independent tutors are exempt from paying IVA, whereas supplementary education centers must

charge their clients a 23% IVA (unless the centers are recognized as having social utility by the competent authorities or are a Private Institution of Social Solidarity).

The number of companies in each category of supplementary education centers is unknown. Although there is a Portuguese Classification of Economic Activities (CAE) for ATLs which is 88910, other companies such as nurseries share the same CAE, making it difficult to determine the magnitude by simply looking at the number of enterprises per CAE. Similarly, study centers and tutoring centers with the CAE of 85593 share the same one as centers that teach in prison establishments. Searching for the number of companies with the names “ATL”, “Study center”, or “Tutoring Center” can also be misleading. Since entrepreneurs who want to open an ATL face strict legislation and licensing requirements, some opt to open a Study Center instead, which does not have this barrier.

Because there are no studies examining this reality, and the numbers are not accurate, it is difficult to assess the percentage of tutoring provided inside these institutions compared to tutoring sessions from independent tutors.

In a recent study on Mathematic tutoring in Madeira Island, Ferreira (2022) revealed that the socioeconomic status of families is not the deciding factor in choosing supplementary education. Instead, students who aspire to continue their education through university in the future are more likely to attend tutoring. The subjects with the highest demand for tutoring were those in which students struggle the most, and a higher result on the final exam would grant them access to the most prestigious universities and, consequently, better-paying jobs. Although a positive correlation was found between tutoring and school results, there were also concerns about the financial burden on families and the potential lack of motivation for independent study due to the excessive reliance on the tutor (Ferreira, 2022).

Furthermore, Manuela Mendonça, the president of the national council of the national federation of teachers (FENPROF), in an interview to *Diário de Notícias*, has drawn attention to shadow education. She contends that the tutoring sector thrives at the expense of the public school, deepening existing inequalities between students. Mendonça argues that taxes should be utilized to ensure a high-quality public school for all, but continuous disinvestments by governments have led to school failures and forced families to bear the financial burden of private tutoring. The *Education at Glance 2022: OCDE Indicators* reports that Portugal's total expenditure on public education is below the EU22 average, which Manuela Mendonça views as a predictor of the negative consequences for the future of the country (Peralta, 2021).

2.4. Digital Transformation in Education

Digital Transformation can be defined as a process of organizational change that is brought about by the integration of digital technologies into the business model, products, and structures of a company. This transformation is aimed at creating and capturing greater value for the firm and is driven by the increasing number of digital technology innovations (Hess et al., 2016; Nadkarni et al., 2021; Schallmo et al., 2017; Verhoef et al., 2021a).

The proliferation of new digital technologies has facilitated the growth of e-commerce and compelled businesses to undergo digital transformation. This, in turn, has intensified competition and expanded it on a global scale. Consumer behaviour has also shifted, and it is anticipated that the adoption of digital technologies will become the standard. Failure to adapt to these changes will result in firms being supplanted by competitors who have leveraged these

technologies effectively and made themselves more appealing to customers (Verhoef et al., 2021b).

The COVID-19 pandemic has also had a significant impact on the way people use digital technologies, with social media, online services, and video platforms like Zoom playing a crucial role in enabling people to stay connected (Sheth, 2020).

In education, digital transformation can only be achieved through the qualification of education professionals in the use of different technologies and the implementation of active teaching methodologies (Melo et al., 2020; Nadkarni & Prügl, 2021). As a result of the confinement measures imposed during the pandemic, many training courses for teachers emerged, aimed at helping educators to develop technological competencies in various platforms, to motivate students while teaching remotely and to enhance their teaching effectiveness (Martín et al., 2021).

According to a survey conducted by Inside Higher Education, university and college executives view the emergency remote teaching as a catalyst for technological transformation in higher education due to its discontinuous disruption (Lederman, 2020).

The utilization of technologies to enhance the possibilities of online learning has led to the increasing demand for online tutoring. The convenience and flexibility of online tutoring have made it a preferred option for some tutors and students. The absence of the need to commute, no transportation costs, the ability to manage time more efficiently, the option to be located anywhere in the world, as long as a good internet connection is available, and access to a wider selection of tutors and students are all attractive features of online tutoring. On the contrary, it is important to acknowledge the weaknesses of online tutoring such as the more susceptibility to distractions since the tutors have less control over the situation making it difficult to capture the students' attention. Also,

interaction between the tutor and the student can be harder to cultivate and technical problems, such as poor internet connectivity can hinder the effectiveness of online tutoring (Glotova et al., 2022; Silva, 2020; Stubber, 2022).

As outlined in the previous sections, the pandemic has accelerated the process of digital transformation in society, but it is still unclear the impact COVID-19 had in the digital transformation of the tutoring sector in Portugal. Recognizing the paucity of research on this topic, it is proposed the following research questions to study:

Q1: How did COVID-19 accelerate digital transformation in shadow education operations in Portugal?

Q2: Is the digital transformation induced by COVID-19 a one-time occurrence that has been reversed or is it an ongoing process?

Chapter 3

Methodology

This section outlines the methodology chosen for this study and explains the reasons for this selection. Firstly, the research questions and objectives are presented, and the appropriateness of the chosen research method is justified. Then, the data collection method and sample selection are discussed, followed by a description of the data analysis process.

3.1. Research questions and objectives

This study aims to answer the research questions: “How did COVID-19 accelerate digital transformation in shadow education operations in Portugal?” and “Is the digital transformation induced by COVID-19 a one-time occurrence that has been reversed or is it an ongoing process?”.

The main objective is to investigate the impact of COVID-19 on the digital transformation of shadow education’ operations in Portugal, as well as its future implications. To achieve this objective, the following specific objectives were defined:

- Investigate the reasons for the occurrence of the tutoring phenomenon in Portugal and determining whether there is a need for regulatory measures in this sector;
- Analyse the changes that COVID-19 has caused in the shadow education sector during the lockdown in Portugal;
- Investigate whether the implementation of technology during COVID-19 has continued or ceased in the aftermath of the pandemic in this sector, and identify the reasons behind this;

- Identify the potential trajectory of digital transformation will look like in the shadow education sector in the future.

3.2. Research Methodology

In order to conduct any investigation, it is essential to carefully select a research methodology that is suitable for answering the research questions and achieving the research objectives (Bryman, 2011). Given the subjective nature of the research questions and research objectives, a qualitative analysis approach was deemed appropriate, as it allows for a better understanding of the experiences and beliefs of the tutors and their individual perspectives.

Furthermore, a multiple case study with an exploratory nature was adopted to gain a more comprehensive and insightful understanding of the reality and topic being studied (Saunders et al., 2019) since the literature on the topic is scarce. This methodology emphasizes the use of words over quantification in both data collection and analysis (Bryman & Bell, 2011), which is particularly relevant when studying a contemporary phenomenon such as COVID-19 and shadow education in Portugal.

3.3. Data Collection Method

The data collection method conducted was semi-structured interviews using pre-determined topics and open-ended questions based on the prior literature review and the research questions and objectives. According to Patton (2015), interviews require asking open-ended questions and follow-up probes to obtain in-depth understanding of participant's perceptions, feelings, and knowledge.

A semi-structured interview has pre-planned questions but has the flexibility to allow the interviewee to elaborate and explain particular matters through open-ended questions (Bryman & Bell, 2011). This approach was adopted to capture all the details and richness of responses making the conversation run smoothly while asking in-depth questions related to specific topics brought by the interviewee.

3.3.1. Design Methodology

First, considering the research questions and the literature review introduced above, the target sample was defined as independent workers who provided, previously to the pandemic, tutoring sessions for low secondary education (“Ensino Básico”) and high secondary education (“Ensino Secundário”) across Portugal and continued to do so after the lockdowns. Since the aim was to obtain diverse perspectives of the phenomenon, the sample was not further restricted.

After selecting the target sample and the data collection method, and keeping in mind the research questions and objectives, the interview questions were carefully drafted to ensure that they were neutral, open-ended, clear, and that all the relevant topics were addressed. The first three served as pilot interviews, ensuring the interview guide would enable the participants to give their perspective on the topics as intended. Because the aim was to obtain the best perception possible of the phenomenon at hand it was decided that the interviews would be in Portuguese since the tutors were not comfortable speaking in another language than their native one and the collection of data could be compromised. After carefully examining these interviews, minor adjustments were made to the interview guide, resulting in the final version used for all subsequent interviews. Each interview started with a concise description of the research objectives, and permission was sought to record the interviews. The interview guide is provided in [Appendix A](#).

3.3.2. Interview Procedure

The tutors were found in Facebook tutoring groups and online tutor directory website “www.explicas.me”. They were contacted through various communication platforms such as e-mail, WhatsApp, and Messenger. The interviews were conducted on a one-to-one basis, mainly through videoconference programs such as Zoom, Skype, and Google Meets, although one was conducted in person.

A total of 51 tutors were interviewed, with an average duration of half an hour. Due to the nature of this activity, where many tutors do not pay taxes, the interviewees will remain unnamed and identified by number throughout this study. Almost all interviewees agreed to have the conversation recorded for academic purposes only, on the condition of anonymity. Since no new information was added in the final interviews, the sample size was deemed sufficient for data collection.

3.4. Data Analysis Methodology

After the interviews were conducted, they were manually transcribed from notes and audio recordings to ensure the complete confidentiality of the participants. Afterwards, a few coding software were tested such as MAXQDA 2022 and Delve Qualitative Analysis but, due to the number of interviews and the way the transcripts were produced, manual coding was found to be the most efficient approach. Firstly, every interview was translated from Portuguese to English and then Excel was used to divide the word transcript by questions in a table format. Afterwards, keywords and phrases were underlined by different colours which corresponded to different categories/topics to facilitate analysis.

Chapter 4

Results and Data Analysis

This study aims to gain a better understanding of the impact of COVID-19 on the tutoring sector and to explore tutors' perceptions of the role of technology in the future. To ensure a diverse range of perspectives and approaches, tutors were randomly selected and contacted for semi-structured interviews, which were mostly recorded and transcribed afterwards. This heterogeneous selection was done to allow a better sense of reality. In total, 51 interviews were conducted, with 50 taking place via video call platforms such as Zoom, Google Meets, and Skype, and 1 being conducted in-person.

This chapter presents the results and analysis of the data collected.

4.1. General description of the interviewees

The interviewees were located in 12 out of 18 districts in Portugal, with one from the Azores and one from Madeira. Lisboa and Porto were the districts with the highest number of tutors interviewed, with 15 and 14, respectively. The age range of the tutors was diverse, with an average age of 35, with the youngest being 19 and the oldest being 59.

Looking at the academic qualifications, most tutors held a master's degree (65%), while some held a bachelor's degree (23%). Only 6% did not have a higher education diploma (all were bachelor's students), and 6% held doctorate's degree.

Regarding their profession, most of the interviewees consider themselves to be tutors (49%). While 8% had previously been teachers, 18% of the interviewees told that teaching was their main profession and 13% were students. The

remaining 20% had other professions that were related to their field of study such as product designer, civil engineer, software engineer, banker, and analyst. Additionally, some tutors have stated that they combine independent tutoring with working in supplementary education centers.

Additionally, most of the interviewees rely on their tutor sessions as their primary source of income with 45% reporting that more than 76% of their annual income comes from tutoring.

The data gathered has been organized in the form of a table, which is available for review in [Appendix B - Social Demographic Characteristics](#).

4.2. Tutoring

4.2.1. Reasons for the existence of tutoring in Portugal

Regarding the reasons for the existence of tutoring in Portugal, most tutors responded that students needed the highest grade possible to enter university (school and exam grade): “More and more people have tutoring because they are worried about the weight the grades have in their future: they need to score the best grade possible to enter their chosen university” (INT24).

Tutors also concluded that the education system is at fault due to the enormous number of students in each classroom and the recent inclusion law that degraded the teaching environment in classrooms: “The cause is the education system: 25-30 students in each classroom which is already hard for a teacher in 45 minutes to be able to reach all students. And because it wasn’t bad enough the new law of inclusion the government put in place actually damage the learning for all the students. As long as we have this educational system, we will have school failure” (INT29).

Other reasons given were the fact that parents no longer have the availability or patience to support their children: “Parents can even have the knowledge to help but they don’t have the time to do it” (INT24), unknowingly developing a habit of having someone to help: “they always had help and they got used to it, they become dependent on the tutor to help them understand the subject and do exercises” (INT14).

4.2.2. Regulation on the tutor sector

Regarding the regulation of the tutor sector, most tutors believed that the attention should be on the education system: “the resource to tutoring sessions comes from a deficient response from the school. The school needs to change in the first place so there won’t be a need to seek outside support. A big part of the population doesn’t have the means to have tutoring and that causes inequalities.” (INT4), “School should be enough, the salaries of the teachers should be increased and there should be a limit of students per class to 15/20” (INT15), “Tutoring sector would almost disappear if the government resolved the problem in schools” (INT34).

However, some tutors agreed that additional regulation would be important, mostly in two ways: mandatory minimum education in the field of tutoring “A minimum degree should be mandatory, it is important that tutors have at least a bachelor’s degree in the field that they give tutoring sessions” (INT7) and a clear distinction between the three different forms of tutoring centers in Portugal: “The tutoring centers should be more controlled. Should be distinguish clearly what is an ATL, a Study Center and a Tutoring Center with more supervision from the authorities since nowadays everyone chooses the type of company to open based only on tax benefits” (INT31).

Others viewed that further regulation in this sector should not happen “The laws already exist, people need to use them” (INT14), “It should happen with an education reform and not with an attack on the tutoring sector” (INT22).

4.2.3. Tutoring before COVID-19

Prior to the pandemic, in-person tutoring was the dominant method, with some tutors reasoning that it was their only viable option: “I never thought of doing online” (INT7 and INT18); “I had the online service available but no demand for it” (INT15). Only 4 out of the 51 tutors were already offering online tutoring sessions “independently of the location” (INT24).

4.2.4. Tutoring during the pandemic

When the COVID-19 lockdowns were imposed, almost every tutor interviewed transitioned to online, except for one who admitted continuing to offer in-person sessions illegally.

Some tutors reported a loss of income: “Some parents took advantage of the situation and decided to negotiate the prices and unfortunately they were successful, I had a massive reduction in income” (INT7) while others experienced an increase in demand for their services “Online tutoring was really good for tutors – I gained a lot more students that were located in various cities” (INT27). In fact, two tutors even disclosed that the income they earned from online tutoring enabled them to buy a house in a different location, without greatly affecting their earnings: “The online boom allowed me to buy a house with the amount that I earned and changed locations while continuing to be a tutor” (INT1).

When asked about the changes in methodology that online tutoring forced, 45% of the tutors said they did not change anything, while the remaining 55% enumerated various reasons. The most common reason was adaptation: “I had to adapt a little” (INT14) which included preparation “I did a lot of before-hand preparation” (INT22) and a more interactive tutoring approach: “I have to be more interactive otherwise the student would be bored (...) I began classes with random music, gave them challenges” (INT7), “I found other strategies, I tried to capture their attention being more interactive – I put things and colours moving on the screen” (INT18), “I had to capture the attention of the student with more images and games” (INT32). Some tutors also reported increased productivity: “I worked twice as much during the confinement because in online I could do in 1 hour what I was doing in 1h30”. (INT1).

4.2.4.1. Programs Adopted

All of the tutors adopted new programs during the pandemic which can be categorized into: video conferencing software (such as Zoom, Google Meets, Skype, Microsoft Teams); Writing software (which includes One Note, Pen Tablet, Notion, Whiteboard, Miro); Messaging Applications (such as WhatsApp, Messenger, Telegram, Discord); Payment modes (such as Mbway and Net banking); Social Media (which includes Facebook, Instagram); and others.

Video conferencing software was used by all the tutors, with a diverse choice of programs: “I always use the simplest programs so I opted for Skype because it doesn’t have to be installed” (INT1), “Zoom because it’s simpler to use” (INT3) “I started to do my selection of the platforms, exploring and see what the other tutors were using; in the end, I chose Microsoft Teams because it had more tools, potentiality” (INT7). During online tutoring sessions, tutors often used writing software as an additional tool for writing: “I bought a Pen tablet, which is more

affordable than a normal tablet, and used it as my computer pen and then complemented it with OneNote that worked as my computer notebook “(INT7).

Messaging applications were used by 84% of the tutors, with some reporting benefits “I only started using WhatsApp after COVID-19. It came to improve the proximity between me and the students and created a different relation where now I tell them that if they have any doubts during the week, they can message me” (INT7) and others refusing to use, for example, WhatsApp: “I avoid because students can’t distinguish personal from professional hours” (INT15).

Payment modes were used by all tutors with almost 71% adopting or increasing the use of Mbway application because of the pandemic: “it came to help greatly since payment is available right away (in opposition to net banking)” (INT4), “ COVID-19 encouraged online shopping and parents understood that Mbway worked” (INT15), “Parents prefer Mbway because the students don’t need to carry physical money” (INT19).

In relation to social media, only 22% of the tutors used it, mainly to attract customers. Some focused on reaching parents via Facebook: “It’s my metaphorical fishing net, a very important tool nowadays because we can reach everywhere” (INT29), while others shifted their attentions to students via Instagram “We focused more on digital marketing and advertising in Instagram because it’s where our target students are” (INT7).

While there were other software and programs listed, the low percentage of tutors using them makes them less relevant as a main category. These programs include: “Escola virtual” and Quizizz, respectively, for resources and quizzes; Email, Classroom and Drive to make materials and exercises easily available, GeoEnZo and GeoGebra for geometry in mathematics, Calendly and iCloud calendar, Wix.com and WordPress for websites, OBS Studio and iMovie for recording and editing videos.

4.2.4.2. Perception on school during lockdown

According to the tutors interviewed, COVID-19 accelerated the technological transformation in the tutoring sector, as Interviewee 9 said: “COVID-19 was a good opportunity for the people to open a little bit of their mentality and to understand that they didn’t have to be restricted only to their geographic area” and Interviewee 13: “COVID-19 came to allow online classes to be vastly implemented”.

Overall, tutors had a positive experience with online tutoring during the lockdown period “In the beginning, me and the parents were apprehensive, but it really surprised me that it went really well” (INT4), “Tutoring online turned out to be very good to tutors, I ended up having more students” (INT27).

However, the same cannot be said for online classes at school. Tutors had a negative perception of online classes and attributed the increase in demand for tutoring to the negative school performance: “Those who didn’t have the privilege to have a tutor during COVID-19 stayed behind, the Minister of Education didn’t enable the online classes at school to work” (INT1), “Online didn’t work at schools” (INT4), “I saw a large spike on student’s requests because the teachers had great difficulty adapting to online” (INT23).

One reason given for this disparity between online school and tutoring is that the teachers’ salary is not affected by the performance of the students whereas a significant portion of the tutors interviewed (45%) rely solely on tutoring as their professional activity, and their success depends on the students’ achievements and satisfaction, giving them more incentives: “I thought: what am I going to do? I have fixed costs to pay, I need a salary and after thinking for a little bit I got to work and started to do what I could” (INT7), “I had to find a solution and fast to not lose my livelihood, a very different situation comparing to the professors that have a salary every month and don’t need to worry about it” (INT8).

4.2.5. Tutoring nowadays

Currently, 22% of the tutors interviewed only tutor in-person, 53% provide both online and in-person, and the remaining 25% continue to provide only online tutoring. As interviewee 1 said: “At this moment both tutors and students put in the balance what they prefer and choose, and the demand shows to be the same”.

Tutors reported that resistance to online tutoring after COVID-19 is related to the negative school performance of online classes: “There was a lot of things that weren’t good at school and naturally it left parents with reservations of the online” (INT13), “Parents want in-person because the children did not follow the subject at school when it was online so they don’t even consider tutoring online”(INT30). Cultural was also a factor that also played a role: “Portuguese people are still very resistant to change, comparing to other countries we are always the last to implement things, accepting that things change and evolve is very hard” (INT18), “I think it is more cultural the preference for in-person tutoring with less usage of technologies” (INT41).

Some tutors who teach in-person continue to use some technology they adopted during the lockdown period: “Although I only do in-person tutoring because of the parents, in this moment, I still bring my computer to the tutoring to find exercises and use WhatsApp to send homework and respond to doubts that the students have outside the tutoring time, things I didn’t do before” (INT4), “Although I mainly tutor in person I still use WhatsApp and Mbway” (INT9), “A lot of things now are done online such as the exercises sent by WhatsApp” (INT47). Additionally, online tutoring also become an important resource in cases where in-person tutoring is not possible: “Online is used in case the student is sick or can’t travel to the session” (INT16).

Furthermore, most tutors agree that online tutoring would be beneficial to all the students if they are motivated and interested in learning: “When a student

has focus and wants to learn they absorb and learn independently to online or physical.” (INT7) which happens mostly in older students “in older students it works better because the interest and responsibility are different since they understand that the school has an impact in their lives” (INT15). Interviewees like number 1 and 18 brought to the attention that “online doesn’t work for students that have limitations at a cognitive level, such as: dyslexia, and attention deficit hyperactivity disorder (ADHD)”; “not because of the tutoring itself but they need other support, they need me there physically”.

4.2.6. In-person vs Online tutoring

Although not specifically asked, the majority of tutors gave insights into the differences between online and in-person tutoring while answering the interview questions. The advantages and disadvantages of online tutoring compared to in-person tutoring are summarized in the Table 1 below.

Some tutors expressed ways that they improved the human side of online tutoring: “I tried to maintain the interpersonal relationship with the student by making jokes, asking about their lives and tried to stay in contact via WhatsApp” (INT5) and “I talk a lot to them to have a relation, I only capture them by talking about things they are interested in like their favourite series and I explain to the parents that this will happen otherwise I will lose them, they won’t listen to me” (INT18).

| | |
|---------------|--|
| Advantages | <ul style="list-style-type: none"> - Convenience: “Parents don’t have to have a stranger in their houses” (INT18), “two minutes before the session I can be leaving the shower or finishing eating” (INT22), “The easiness of having a tutor session: they don’t miss as many sessions, don’t rearrange the schedule as often” (INT26), “less time spent on commuting and less tiredness because of it” (INT41), “the student can record the lesson” (INT12); - Unbounded on territory range: “The students can choose a tutor outside their resident area” (INT18), “because I live in a region with low population, online allows me to tutor far more students outside my residence area” (INT25); - Efficiency: “Better management of time, saving on fuel and overall expenses” (INT1); “It is more productive, 1h of tutoring is 1h of work” (INT18), “As an added value if taken advantage” (INT41); |
| Disadvantages | <ul style="list-style-type: none"> - Lack of the human side: “Coldness of relations” (INT1), “It’s harder to connect with the student, and that matter has great significance because if they like you then they accept more easily you nagging them with knowledge” (INT14), “The distance of the camera is a big barrier, physical presence is important to learn” (INT15); - Non-controllable factors diminishing the quality: “Internet can go down and it breaks the rhythm of the session” (INT5), “Low internet quality because of bad weather” (INT33); - Screen-time: “Ocular health issues” (INT10), “the kids are in front of a screen longer” (INT30); - Distractions: “They can easily get distracted” (INT21). |

TABLE 1. List of advantages and disadvantages of online tutoring sessions.
SOURCE: Of my authorship

4.2.7. Foreseeable future of technology in tutoring sector

When asked about the future of technology in tutoring, tutors gave an abundance of answers, which could be divided into three main categories: still a long way to go, continuation of technology transformation in this sector, and futuristic vision.

4.2.7.1. Still a long way to go

Several tutors expressed the belief that technology will not play a larger role in tutoring in the future, and some even think it will decrease. The most interesting insights are transcribed in the Table 2 below:

| | |
|-------|--|
| INT1 | “Although it makes sense to me, I don’t think online will have a major impact in the future since the school isn’t online and, as a rule, tutors follow what is done at school, it would be needed a major paradigm change, another 3/4 lockdowns” |
| INT15 | “I believe on the human side of teaching as a key ingredient for success and therefore the future of online tutoring is still far ahead” |
| INT47 | “It doesn’t seem feasible that the future of tutoring is technology. We are back to in-person tutoring and online only in exceptional circumstances” |

TABLE 2. Insights tutors gave about the foreseeable future of technology – still a long way to go
SOURCE: Of my authorship

4.2.7.2. Continuation of technology transformation in this sector

Despite having diverse perspectives, all tutors in this category share the vision that technology will continue to play an increasing role in tutoring. The most significant perspectives are described in the Table 3 below:

| | |
|-------|---|
| INT8 | "I recognize that online is a trend and an excellent opportunity. We are going to see an increase in online without a doubt, in fact I am seeing it in social media, a predisposition to it." |
| INT10 | "The official education is changing in order to include technology and therefore as long as this is seen the tutoring sector will have to follow" |
| INT23 | "There is a strong movement for remote working and that is going to overflow to the education, we will still have in-person tutoring but the transition to online is inevitable, the tendency is clear as water" |
| INT24 | "Like everything else we are going to adapt and the technological updates, the development of technologies will allow a new direction to tutoring: I will start using them while giving in-person tutoring" |
| INT34 | "We only use more technology in higher education and progressively we will see it being implemented on lower education levels: right now, there are students only using computer and tablets in school. We have to adapt to students, I don't think technology is prejudicial, it can be really good if used correctly. I see the use of technology as indispensable, necessary and its usage is going to be exponential" |
| INT44 | "I think the more traditional tutoring will disappear, the resource to technology is already happening in education – the ninth-grade exams are going to be done in computer in the next year. Technology is everywhere nowadays, the parents and the tutors need to realize that technology is necessary and should be used adequately." |
| INT48 | "In Portugal everything takes a lot of time, now we had the boom of online because of the confinement, we were forced to it and now people are more receptive. I believe that a good online teaching well implemented would work but it has to have a good support structure, so people don't miss the human presence, something that didn't happen during lockdown. I'm big supporter of online, but it's going to take a lot of time – there isn't a perfect educational method – I encourage symbiose of methodologies, we are all different and learn from different methods" |

TABLE 3. Insights tutors gave about the foreseeable future of technology - continuation of technology transformation.

SOURCE: Of my authorship

4.2.7.3. Futuristic vision on technology

Three tutors had a more futuristic vision of the role of technology in tutoring. Their ideas are summarized in the Table 4 below:

| | |
|-------|---|
| INT6 | “The tutors will focus more on courses, technology is facilitating greatly our work and will continue to do so, the people who focus on digital products are the ones that will have the highest success in the future” |
| INT22 | “More websites like “Escola Virtual” - that have all the content of specific subjects and appealing videos with exercises - will start to appear for students who have difficulties but are autonomous. It will reduce the work of the tutors and the ones that can work better these technologies will be the successful ones” |
| INT24 | “In a farther future, technology as brain computer interfaces as Neuralink are going to rapidly advance. Additionally, virtual reality technology (VR) allied to education sector is going to make in-person tutoring redundant” |

TABLE 4. Insights tutors gave about the foreseeable future of technology - Futuristic vision
SOURCE: Of my authorship

4.3. Chapter Summary

Firstly, the reasons for the existence of tutoring were explored, and tutors concluded that the fault lies with the educational system. Further regulation was discussed and most thought that it should start in the educational sector although some considered regulation in the tutoring sector as important.

Before the onset of the pandemic, in-person tutoring was the predominant form of tutoring but with the lockdown measures, almost all tutors transitioned to online due to the restrictions. The majority of tutors altered their methodology and incorporated new or increased usage of technology programs/software.

These can be categorized as video conferencing software, writing software, messaging applications, payment modes, social media, and others.

Overall, tutors had a positive experience with online tutoring; however, the same cannot be said about online learning in schools, as the majority of tutors expressing concerns regarding the students' performance and their effective learning at schools.

Nowadays, the majority of tutors offer both online and in-person tutoring, with some attributing the continued demand for in-person tutoring to the negative experience that students had with online learning at school. Even tutors who only offer in-person tutoring, have incorporated technology in their sessions such as using the computer/tablet to search for exercises, and online tutoring is presented as a resource in case of illness or necessity.

The advantages and disadvantages of online tutoring were also exposed, and following with tutors' insights into what they thought would be the future of the role of technology in the tutoring sector.

Chapter 5

Discussion of results and conclusions

In this chapter, the main findings of the study are presented, which answer the two research questions: “How did COVID-19 accelerate digital transformation in shadow education operations in Portugal?” and “Is the digital transformation induced by COVID-19 a one-time occurrence that has been reversed or is it an ongoing process?”. Firstly, the research objectives are discussed, comparing the results obtained from the interviews to the previous literature review. Subsequently, the main conclusions of the present investigation are drawn, and the limitations of the research are identified, along with possible research topics for further investigation.

5.1. Discussion of Research Objectives

It is not surprising that the main reason for tutoring in Portugal was pointed out to be the students’ need for high grades, both at school and in exams, to enter the best universities. Tutors believe that the education system is at fault because it does not provide the necessary support, which is consistent with previous studies conducted by Bray & Kobakhidze (2014) and Pimlott-Wilson & Holloway (2021). Interestingly, when asked about further regulation, tutors believed that attention should be given to improving the education system although some agreed that further regulation could benefit this sector mostly in two ways: by introducing minimum mandatory education requirements for tutors, and by clearly defining in the legislation the differences between the various types of supplementary education centers (ATL, Study Center, and Tutoring Center).

This study found that prior to the pandemic, in-person tutoring was the predominant method used by the interviewees, as noted in previous research (Bray, 2021b). However, due to lockdown measures, nearly all tutors transitioned to online tutoring, except for one. The sudden impact of COVID-19 resulted in a loss of income among some tutors, as some parents took advantage of the situation to negotiate lower prices, while other tutors experienced an increase in demand, which translated into a higher income. Pimlott-Wilson & Holloway (2021) reported a different reality in the UK, where tutors experienced a loss of income due to a saturated supply in this market.

The change in methodology was also noted, as 55% of the tutors who had to adapt to a more interactive teaching approach and prepare beforehand, which resulted in increased productivity during tutoring sessions. The most significant change, however, was the adoption of technology, with all tutors utilising new software and programs. A total of 30 programs were mentioned, including videoconferencing software, writing software, messaging applications, payment mode, social media, and others. Tutors believe that COVID-19 accelerated the digital transformation in the tutoring sector, as it did in the education sector (Lederman, 2020).

Currently, only 22% of the tutors interviewed are providing in-person tutoring exclusively, while 53% offer both online and in-person tutoring, and the remaining 25% continue to provide online tutoring only. Overall, tutors had a positive experience with online tutoring during the pandemic, similar to what was observed in the UK (Pimlott-Wilson & Holloway, 2021). Some tutors who only provide in-person tutoring continue to use technology that they adopted during lockdown, such as WhatsApp and Mbway, and online tutoring has also become an option in case of illness.

Nevertheless, the increase in demand for tutoring during COVID-19 and the resistance seen from parents towards online tutoring afterwards were attributed

to a negative perception of online classes in schools. This finding raises doubts about the study presented by Conselho Nacional de Educação (2021), which found that 52% of teachers surveyed believed that learning was not compromised, although 70% of them noticed students facing more difficulties in learning.

This study also sought to identify what the digital transformation in shadow education will look like in the future. All tutors believed that the digital transformation seen thus far will continue to exist, with their perspectives falling into three categories: cessation of digital transformation; continuation of technology transformation in this sector; and a significant growth in the future where the ones who can best manoeuvre technology will succeed (futuristic vision). The continuation of technology transformation was the perspective in which its arguments best reflected the Portuguese reality in the near future, while the futuristic vision could become a reality in a long term.

5.2. Research Conclusions

Numerous studies in the literature have focused on the impact of COVID-19 on the formal education system. However, there is a scarcity of literature on the impact of the pandemic on the digital transformation of the shadow education sector, particularly evident in Portugal. Thus, the present study aimed to understand how COVID-19 accelerated digital transformation in shadow education operations in Portugal and whether the digital transformation induced by COVID-19 was a one-time occurrence that was reversed or an ongoing process.

To achieve this, a literature review was conducted, and the situation in other countries was analysed. Afterwards, 51 interviews with Portuguese independent

workers that provide tutoring sessions were conducted and its results analysed. It was concluded that COVID-19 accelerated digital transformation in the shadow education sector mainly due to the lockdowns that forced the adoption of online tutoring. This adaptation required the use of new programs and software, with a total of 30 mentioned, such as video conference software and payment platforms.

It was also revealed that, for the majority of Portuguese tutors interviewed, the digital transformation induced by COVID-19 is an on-going process. Currently, 88% of tutors continue to provide online tutoring sessions, and even the 22% that only perform in-person tutoring continue to use some of the programs adopted because of the pandemic such as messaging applications and payment applications. It was also perceived by the tutors that the digital transformation has not had a greater impact because of the negative performance of school during the lockdown period.

It is important to note that shadow education survives because of the need of students to enter the university of their choice, and if regulations were to be created, the attention should first be focused on improving the school system. Nevertheless, it is understood that the future of the shadow education sector will undoubtedly pass through technology, and the intensity of the transformation is yet to be seen.

This study provides an important insight into the field of shadow education and a new perspective on how COVID-19 accelerated digital transformation, which has not been explored before. As such, these findings are of great importance to those involved. For tutors, it allows for a better understanding of this sector, particularly on-going trends, and what they can do to remain relevant. For students and their parents, the study sheds light on the tutoring sector after COVID-19 and it is useful to compare better practices. Furthermore,

they can be instrumental in informing governments about the particular relevance of this sector in education.

5.3. Limitations of Research and Recommendations for future research

The present research has some limitations. The chosen method was a qualitative approach using interviews, but not all tutors from all the districts in Portugal were interviewed, therefore, results and conclusions from this study can't be generalized. Moreover, professionals that provide tutoring sessions in ATL, Study Centers or Tutoring Centers were not considered which can affect the current results since a significant part of these centers have physical facilities and still only do in-person tutoring. The conclusions may also be biased since the tutors interviewed were found online via Facebook tutoring groups and online tutor directory website, which could indicate a predisposition for technologies. Subjectivity due to tutor perspectives may also be present in the collected data during the interviews.

Thus, for future research, it is recommended to have a sample size that is representative of the tutors in Portugal. Additionally, those who do not have an online presence and are less likely to adhere to online tutoring could present a useful and distinct insight. It may also be interesting to study if culture plays an essential role in the adaptation of technology. Furthermore, a quantitative approach to factors that facilitate the adaptation of technology in the shadow education sector could provide a complementary study.

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Appendix

Appendix A – Interview Guide

Date and Time:

Location:

1. How many years have you been tutoring?
2. What subjects do you tutor and at what levels?
3. Did you give tutoring before COVID-19? If yes, what format did you use?
In-person, online, or both?
4. In 2020 and 2021, during the pandemic and with the restrictions imposed by lockdowns, did you continue to provide tutoring? If Yes, in what formats?
 - 4.1. What changes did you make to your teaching methodology during this period?
 - 4.2. What programs and technologies did you start using or increase your usage during this time? (e.g. video calls, communication through programs like WhatsApp or electronic payment applications)
5. Currently, when there is no lockdown, in what format do you provide tutoring?
 - 5.1. What is the reason for your choice of format?
 - 5.2. Do you consider the online format suitable for students? What is your perspective?
6. How do you see the future of tutoring? Do you believe that technologies could play a fundamental role in transforming this sector?
7. In general, what do you think is the reason for students to seek tutoring sessions?

8. Considering that tutoring phenomenon is largely ignored by the government despite its increasing prevalence in Portugal, do you think there should be greater regulation of this sector?
9. Is there anything you would like to add that I haven't asked?

Characterization of the interviewees:

10. What is your age and district of residence?
11. What is your academic background and profession?
12. What percentage of your workweek is dedicated to tutoring?
13. What is the weight of tutoring in your gross annual income?
 - Up to 25% of the total annual income
 - 26-50% of the total annual income
 - 51-75% of the total annual income
 - More than 76% of the total annual income

Appendix B – Social demographic characteristics

| Social demographic characteristics, N=51 | | |
|---|----------|----------|
| Area of residence | N | % |
| Aveiro | 6 | 12% |
| Beja | 0 | 0% |
| Braga | 2 | 4% |
| Bragança | 1 | 2% |
| Castelo Branco | 0 | 0% |
| Coimbra | 1 | 2% |
| Évora | 0 | 0% |
| Faro | 2 | 4% |
| Guarda | 0 | 0% |
| Leiria | 2 | 4% |
| Lisboa | 15 | 29% |
| Portalegre | 2 | 4% |
| Porto | 14 | 27% |
| Santarém | 2 | 4% |
| Setúbal | 1 | 2% |
| Viana do Castelo | 0 | 0% |
| Vila Real | 0 | 0% |
| Viseu | 1 | 2% |
| Madeira | 1 | 2% |
| Açores | 1 | 2% |
| Age | N | % |
| 18-24 | 11 | 21% |
| 25-34 | 17 | 33% |
| 45-54 | 10 | 20% |
| 55-65 | 10 | 20% |
| + 65 | 3 | 6% |
| Academic Qualifications | N | % |
| Secondary Education | 3 | 6% |
| Bachelor's Degree | 12 | 23% |
| Master's Degree | 33 | 65% |
| Doctorate's Degree | 3 | 6% |

| Profession | N | % |
|---|----------|----------|
| Tutor | 25 | 49% |
| Professor | 9 | 18% |
| Student | 7 | 13% |
| Other | 10 | 20% |
| % Annual gross income received from tutoring | N | % |
| Less than 25% | 14 | 27% |
| 26 – 50% | 9 | 18% |
| 51 – 75% | 5 | 10% |
| More than 76% | 23 | 45% |

TABLE 5. Social Demographic Characteristics of the Interviewees
 SOURCE: Of my authorship