Fatores que condicionam negativamente a interação professor – aluno no ensino a distância no Instituto Superior Politécnico Jean Piaget de Benguela

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Resumo

O presente artigo discute os fatores que condicionam negativamente a interação professor-aluno no ensino a distância no Instituto Superior Politécnico Jean Piaget de Benguela. Assim sendo, metodologicamente, adotamos um questionário como instrumento aplicado aos alunos e professores dos cursos de Enfermagem e Obstetrícia e Sociologia. A pesquisa conseguiu demonstrar que, a interação entre professor-aluno ocorre no *Google Classroom*, uma ferramenta disponibilizada pela *Google* para a atividade educativa assíncrona. Portanto, conclui-se que os principais fatores que condicionam negativamente, dificultando a assimilação ou interação professor-aluno são: inexistência de material e equipamento apropriado, a falha constante de energia elétrica pública, fraco domínio das tecnologias, uso de equipamentos não adequados, a falta de formação adequada dos professores para lidar com esta modalidade educativa, que passam a ser os desafios que o ensino a distância coloca tanto aos alunos, como aos professores.

Palavras-chave: Educação a Distância, Ensino remoto, Interação professor-aluno, Instituto Superior Politécnico Jean Piaget de Benguela.

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Factors that negatively affect teacher-student interaction in distance learning at Instituto Superior Politécnico Jean Piaget De Benguela

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ABSTRACT

This article discusses the "factors that negatively affect teacher-student interaction in distance learning at the Instituto Superior Politécnico Jean Piaget in Benguela". Therefore, methodologically, we adopted the questionnaire survey as an instrument applied to students and professors of the Nursing and Obstetrics and Sociology courses. The research was able to demonstrate that the interaction between teacher and student occurs in googleclass, a tool made available by Google for asynchronous educational activity. Therefore, it is concluded that the main factors that condition negatively, hindering the assimilation or teacher-student interaction are: lack of appropriate material and equipment, the constant failure of public electricity, poor command of technologies, use of inappropriate equipment, the lack of adequate teacher training to deal with this educational modality, which become the challenges that distance learning poses to both students and teachers.

Keywords: Distance Education, Remote teaching, Teacher-student interaction, Instituto Superior Politécnico Jean Piaget de Benguela.

Factores que afectan negativamente la interacción docente-alumno en la educación a distancia en el Instituto Superior Politécnico Jean Piaget De Benguela

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Resumen

Este artículo discute los "factores que afectan negativamente la interacción docente-alumno en la educación a distancia en el Instituto Superior Politécnico Jean Piaget de Benguela". Por lo tanto, metodológicamente, adoptamos el cuestionario de encuesta como instrumento aplicado a estudiantes y profesores de las carreras de Enfermería y Obstetricia y Sociología. La investigación pudo demostrar que la interacción entre docente y estudiante ocurre en googleclass, una herramienta puesta a disposición por Google para la actividad educativa asíncrona. Por tanto, se concluye que los principales factores que condicionan negativamente, dificultando la asimilación o interacción docente-alumno son: la falta de material y equipo adecuado, las constantes fallas en la energía eléctrica pública, el escaso dominio de las tecnologías, el uso de equipos inadecuados, la falta de una adecuada formación docente para hacer frente a esta modalidad educativa, que se convierten en los retos que plantea la educación a distancia tanto a estudiantes como a docentes.

Palabras clave: Educación a Distancia, Enseñanza a distancia, Interacción docente-alumno, Instituto Superior Politécnico Jean Piaget de Benguela.

Introduction

This article addresses factors that negatively affect the Professor-Student interaction in Distance Education at the Instituto Superior Politécnico Jean Piaget de Benguela. Considering the context of physical isolation experienced by the population due to the State of Emergency decreed on May 25, 2020, by the President of Angola (João Lourenço) (ANGOLA, 2020), educational institutions, particularly higher education institutions, sought to maintain teaching activities by adopting Distance Education as an alternative to continue their work.

However, Distance Education in Angola is a new reality that has been regulated by Law No. 17/16 (Law on the Bases of the Education and Teaching System), which defines it in Article 89 as,

> a modality in which the teaching-learning process occurs virtually, using training technologies and other means of communication with diverse bibliographic materials, complemented by moments of direct face-to-face interaction between students, teachers, and other participants (ANGOLA, 2016, p.12)

Distance Education has been operational in many educational contexts for some time, leading many previously skeptical academics to increasingly accept its results. However, remote teaching resulting from the COVID-19 pandemic represents a new reality for higher education institutions in Angola, which consequently required an adaptation from the actors involved in the teaching process namely, administrators, teachers, and students for its implementation.

Distance Education is defined as:

> A mode of teaching that operates through a systematic and organized educational process, characterized by the physical separation between teachers and students, who interact from different locations using various technological means that allow for bidirectional interaction, or two-way communication (LIMA, 2012, p. 33)

It can be observed that, although distance education does not have a physical classroom that allows for face-to-face communication between the participants, interaction between teacher and student in this educational modality still occurs in what is called a virtual classroom. In other words, the teacher and student are physically distant but maintain interaction through the use of Information and Communication Technologies (ICT). Therefore, in Distance Education, the participants in the teaching-learning process teacher and student are in different physical spaces. To achieve the predefined objectives, it is essential, if not crucial, that no factors hinder the teacher/student interaction, which occurs through the use of ICT (COSTA, 2016).

However, with the publication of Law No. 17/16, which includes the regulations for Distance Education in Angola, the Ministry of Education convened its staff to analyze mechanisms for implementing itinerant distance education, initially targeting teachers at undergraduate or postgraduate levels (ANGOLA, 2019).

In this context of a state of emergency, where teachers at the Instituto Superior Politécnico Jean Piaget de Benguela have adopted Distance Education or remote teaching as an alternative to continue their teaching activities under the guidance of their respective course coordinators, we find it important to identify the factors that negatively impact the teacher-student relationship at that Angolan higher education institution. Therefore, we have defined the following research questions:

1. How is the teacher-student interaction established in Distance Education at ISP Jean Piaget de Benguela?

2. What tools are used by students and teachers in Distance Education at ISP Jean Piaget de Benguela?

3. What challenges does Distance Education present to teachers and students at ISP Jean Piaget de Benguela?

Regarding the methodological procedures, a survey was chosen, which, according to Prodanov and Freitas (2013, p. 57), "occurs when it involves direct questioning of people whose behavior we wish to understand through some type of questionnaire." Thus, a group of teachers and students was asked to answer a series of questions related to the research topic, with the data collection technique being a questionnaire applied to a randomly selected sample of 19 students from the Obstetric Nursing course and 12 teachers. The nature of the research is applied; the approach is quantitative, with methods that include statistical, inductive, historical-logical, and analytical-synthetic. Regarding the objectives, the research is exploratory, bibliographical, field-based, and descriptive.

In terms of structure, the work is divided into topics that contextualize the concept of Education, Distance Education, ICT in Distance Education, teacher-student interaction, and the challenges of Distance Education.

1. Theoretical Framework

1.1. Theoretical Discussion on Distance Education

Education, as a product of and for society, is not static; it evolves in response to societal changes, aiming to adapt to the context and effectively address the challenges it faces.

> Societies are in constant flux. Education must equip learners with the necessary skills to successfully navigate these ongoing changes while also allowing them to retain their cultural, social, and individual identities (COUVANEIRO, 2007, p.30).

Education, in all social contexts, has played and continues to play a pivotal role in the society in which it occurs. As Diambo (2017, p. 29) asserts, it: " […] promotes the development of unity within the self and gradually consolidates the self through social interaction, as education is a continuous process." Thus, it is evident that, as individuals live, they are imparted with certain values, principles, and norms of society through various educational forms that can be either informal or formal. However, the formal education referred to in this article is that which is planned and systematized, with objectives that are predefined. It traditionally involved placing both teacher and student in the same physical space (classroom), a reality that changed drastically during the peak of COVID-19. During this period, higher education instructors began to teach remotely through online environments, meaning remote instruction through virtual classrooms. Education is also defined as:

> Education is the action we undertake regarding the people who make up society, with the aim of empowering them comprehensively, consciously, efficiently, and effectively. It seeks to help them integrate the value of acquired knowledge, making it relevant to their daily lives, and enabling them to act frequently based on the educational process they have assimilated. (CALLEJA, 2018, p.109)

Education enables individuals to live harmoniously in society by respecting one another and applying the values they have absorbed. Given its crucial role in societal development, institutions tirelessly strive to adapt to changes. In the Angolan context, due to COVID-19, formal or school education previously conducted in-person has transitioned to Distance Education or remote learning in many institutions, including the Instituto Superior Politécnico Jean Piaget. This research focuses on this mode of education to analyze the dynamics and challenges of the teacher-student relationship in this context.

Distance Education, referred to here as remote learning, is defined by Moore and Kearsley (2013, p. 2) as: "planned learning that typically occurs in a place different from the teaching, which requires communication through technologies and a special institutional organization." Today, this definition encompasses various expressions that can lead to contradictions.

For the purpose of this research, the most appropriate definition considers Distance Education as a pedagogically mediated teacher-student or teaching-learning relationship, mediated by various instructional materials and tutorial guidance. This is applicable both to traditional pedagogical environments and those utilizing Digital Information and Communication Technologies (TDIC) (RIANO, 1997, cited in FERREIRA et al., 2013).

In this context, while academics and others use the term Distance Education to describe interactions between students and teachers at a distance, it is important to note that this term is frequently used even when referring to teaching and learning processes. When discussing education and learning, the term "education" should be used to accurately describe the two-sided relationship between the teacher and the student. In this regard, Moore and Kearsley postulate that (2013):

> There are also two frequently used expressions e-learning and online education that do not always refer to teaching and learning. In e-learning, the prefix "e" stands for "electronic" and generally means education via the internet. Similarly, asynchronous learning typically refers to forms of distance education where communication occurs through asynchronous means (not happening simultaneously) using the internet. Another term sometimes considered synonymous with distance education is distributed learning, which highlights its availability everywhere and at any time. (MOORE; KEARSLEY, 2013, p. 3)

According to Maia and Mater (2007, p. 6), distance education is "a mode of education where teachers and students are separated, planned by institutions, and utilizes various communication technologies." Thus, the definitions of distance education presented by these authors converge in that they identify the primary characteristic of this educational modality as the geographic separation between teachers and students.

However, studies in this area argue that the term "distance" should not be understood merely as geographic separation. The term has multiple meanings beyond just spatial separation, suggesting that geographic and physical distance are not the most relevant factors in this educational modality. The concept of distance should encompass psychological, relational, and communicational aspects. Moore (2007) encapsulates these aspects with the term "transactional," as he was the first to propose a less naive and more comprehensive reflection on the concept of distance by developing his theory of transactional distance in the 1970s (Diniz, Linden, & Fernandes, 2011). Thus,

> The transactional function is determined by the extent to which teachers and students can interact simultaneously. However, it is influenced by how much the study path is predetermined (structure) through prepared teaching programs. Transactional distance reaches its peak when teachers and students have no communication and when the teaching program is pre-programmed in all details and prescribed mandatorily, resulting in individual needs being unaddressed (PETERS, 2001, p. 63)

In summary, distance education is a modality where the teacher does not have full control over the activities, and the student is responsible for conducting their own studies with the aim of leading their own learning. In other words, in the distance education process, despite being planned and systematized, it grants students autonomy to manage their own learning.

Distance education occurs in various modalities, which are often not easy to differentiate due to their simultaneous coexistence. However, it is divided into five main modalities, namely:

> Correspondence education: books and commented assignments; Classic distance education: through printed material, radio, television, home assistance, and/or study centers; Group distance education: radio/TV and regular face-to-face meetings; Autonomous distance education: students plan, organize, and schedule their studies on their own; Web-based distance education: aims to develop collaborative work (COSTA, 2016, p. 28)

However, for our research, remote teaching, in the context of COVID-19, is also emergent. Looking at the distance education modalities highlighted by Inês da Costa, in the Angolan context with the emergence of the COVID-19 pandemic, government entities related to education, including General Education (primary and secondary education), in collaboration with the Ministry of Social Communication, began broadcasting lessons of various subjects on television and radio. To a certain extent, considering the characteristics of this model, this can be considered a classic form of distance education, as outlined.

It is important to emphasize that the distance education modalities resulting from the classification by Inês da Costa correspond to the historical evolution of distance education, which is also classified by Lima (2012) into four generations of systems. These will be explained and related for better understanding.

The first corresponds to *1st Generation Systems* – based on printed or handwritten texts. This includes correspondence education, which has been used since the 1920s and is asynchronous.

The second corresponds to *2nd Generation Systems* – based on television and audio. These systems used television and radio to capture live readings in the classroom and transmit them to other groups of students who sometimes used the telephone to communicate and clarify doubts with

teachers. In addition to radio and television, which began to be used in the 1950s, other communication technologies were incorporated into the teaching and learning process, such as cassette tapes, CDs, and audio conferences, which can be asynchronous or synchronous.

Regarding *3rd Generation Systems* – these integrated the first and second generation systems into a multimedia approach, based on texts, audio, and television. This system also includes video technologies, teleconferences, and videoconferences, all of which are widely used today.

Finally, we have *4th Generation Systems* – developed around computer-mediated communications, such as computer conferencing and email, associated with access to databases, information banks, and virtual libraries, using computer-assisted instruction, internet conferences, and computer-based videoconferences. Beyond the mentioned modalities, there are:

> Recent developments in the field of distance education have led us, broadly speaking, to two main modalities: one with a notably self-instructional profile, developed within the context of the industrial society and perfectly adapted to its demands, and another with a more collaborative or socio-interactionist profile, developed in the context of the emergence of the so-called post-industrial or information society, in response to the new demands of this new society (AZEVEDO, 2006, p. 25)

In the first modality, people typically use printed material, audio recordings, and videos. The main characteristic of this modality is self-instruction. However, the student learns through the instructional material organized and provided by the teacher as they interact with it.

In addition to the self-instructional modality, there is also the collaborative modality, which is more suitable for distance education as it supports a collaborative learning process.

> Instead of the one-way transmission of information, there is a growing emphasis on interaction and the exchange of information between teacher and student. Instead of passive reproduction of existing information, there is an increasing desire to stimulate students' creativity. (SILVA, 2003, p. 25)

For the learning activity to be collaborative, it is essential that distance education makes appropriate use of ICT, taking into account the methods that identify the collaborative model. In this sense, it is important to address the application of ICT in education.

1.2. Technologies in Distance Education

Distance education or remote learning typically involves the use of Information and Communication Technologies (ICTs) which include data transmission tools such as the internet. It is often complemented by asynchronous activities that offer flexibility in learning.

The internet plays a crucial role in distance education by providing various communication resources that are utilized in both synchronous and asynchronous formats. The most commonly used resources include: chat rooms, forums, blogs, discussion lists, web conferencing, and virtual communities (Palloff and Pratt, cited in Mendonça, 2014). Other technological options available for distance educators include:

> Voice – audio-educational tools include interactive technologies such as telephone and teleconferencing. Passive audio tools include CD-ROMs and radio; Video – video tools include still images and real-time moving images, combined with teleconferencing; Printed – printed materials are a fundamental component of distance education programs, from which all other distribution systems have evolved. Various printed formats include textbooks, study guides, instructional manuals, course syllabi, and case studies (SCHERR, 1999 *apud* MENDONÇA, 2014)

Since the basic idea of distance education involves students and teachers being in different locations for all or most of the time they are learning and teaching, they rely on various information and communication technologies (ICTs) to interact. Thus, for successful use of these technologies, Moore and Kearsley (2003, p. 1) argue that: "teachers must understand the different projects and messaging techniques specific to these technologies. [...] Students need to learn how to study through technology, how to communicate – which is not always the same as in face-to-face teaching." Therefore, teachers' knowledge of different technologies and teaching techniques for distance education is crucial, as it enables them to cater to the diverse needs of students.

In fact, the use of ICTs, and more specifically the use of the internet, allows education to expand, moving beyond being a self-contained entity to becoming an organizer of various knowledge spaces. This necessitates a rethinking of the teaching and learning process, as the internet introduces a new space for information organization and communication, different from traditional teaching tools and modes of interaction (DOWBOR, 2001 *apud* MERCADO, 2009). Thus,

> The major challenge in incorporating technology into the educational sphere has been to develop actions that contribute to individual and collective growth, as well as actions that promote initiative, flexibility, and autonomy in the learner. [...] The teacher responsible for a given content does not need to be a technology specialist to implement innovative proposals. They need to be a proficient user of technology to be able to propose ways to interact with their content through various media. Therefore, a teacher who is limited to the understanding that teaching only occurs in a traditional classroom will not be able to transfer their subject's content to a distance learning methodology. (PEREIRA, MORAES e TERUYA. (2017, p. 218)

This highlights the importance of technology proficiency for teachers who aim to work with distance education, as well as those who conduct their work in-person; technology also facilitates content research.

Therefore, technological advancements have enabled the emergence of virtual communities. The role of the members of these communities is crucial in this process: everyone learns by building knowledge through cooperative learning within the network of teachers/tutors/moderators and learners. Participants rely on each other to construct their learning.

Thus understood, we will follow the processes of teacher-student interaction in distance education.

1.2.1. Professor-Student Interaction in Distance Education

Human beings are inherently social creatures, and by their nature, they are destined to interact with others for various reasons. In the educational context, interaction between the agents is considered essential because it provides the teacher with the opportunity to engage in planning, observation, reflection, and analysis of the student's work. This interaction allows the teacher to provide information or challenge the student, facilitating a cycle of actions where the student can gradually overcome stages in solving a problem or executing a project. (VALENTE *et al*, 2011, p. 32)

For professor-student interaction to yield the desired results in distance education, it is necessary for them to maintain ongoing dialogues mediated by DICTs (Digital Information and Communication Technologies).

> The dialogic relationship, which forms the foundation of the learning community, whether in person or mediated by technology, should be a continuously practiced exercise by all participants. This process of development aims to guide the various learners toward a unified action, making them engaged in both the real and virtual networks. (PEREIRA; MORAES e TERUYA, 2009, p.218)

The concept of dialogic teaching, while often adhering to standardized methods, takes into account cultural differences, academic perspectives, and available resources. From a broader perspective, it includes various forms of organization that facilitate a dialogic approach, such as academic counseling, study centers, workgroups, seminars, practical periods, and residential schools (TEPERINO *et al.*, 2006).

The goal of teaching at any level is always to address pedagogical phenomena, behavioral changes, and adapt social conditions to human needs through interaction. This involves the use of language, connection to time, sequence, and duration, as well as requiring a cultural perspective, communicative competencies, and recognition of differences within equality).

1.2.2. The Challenges of Distance Education

The challenges of implementing distance education should be understood as incentives to seek new paths, overcome established models and routines in face-to-face teaching, and require creativity, political maturity, seriousness, patience, persistence, and the ability to work collaboratively in an interdisciplinary team. Overcoming these challenges means addressing the dimension of a whole system, which is a complex network of interconnected components. (TEPERINO *et al*., 2006)

To facilitate understanding of the challenges of distance education, they are categorized and will be detailed further. When planning distance education, it is essential to address and implement these challenges effectively.

> Some of these challenges are more subjective and behavioral: psycho-social-cultural challenges, which generally influence and often determine whether they facilitate or hinder the implementation process of distance education (EaD). Other challenges are more operational, such as methodological, technological, legal, technical team training, and logistical challenges. (TEPERINO *et al*., 2006, p.17)

Therefore, each of the categories follows:

I.   **Psycho-Socio-Cultural Challenges**

In this category, the emergence of a new teaching modality often leads to rejection, mistrust, and discomfort. It disrupts established routines, questions established truths, and dismantles concepts, threatening conservative administrative structures and imposing changes that are frequently met with resistance and apprehension.

Planning in advance and making swift decisions and actions are crucial when working with a large number of people studying from locations far from the school's main site. This culture of advanced planning is inherent to the pedagogical act, requiring organization, logistics, efficiency, strict adherence to schedules, and well-coordinated teamwork.

Technological challenges also reflect cultural aspects, as many educators still resist incorporating networked computers into their daily routines, struggle with technological

communication, feel inhibited by videoconferencing cameras, or cannot efficiently manage email communications. Additionally, appropriate investment in equipment is necessary to avoid perpetuating existing exclusions or creating new categories of those excluded. Education must increasingly be considered from the perspective of social inclusion and democratic access, while remaining mindful of the real conditions of educational institutions.

II. Operational Challenges

Operational challenges in Distance Education management encompass various aspects, including the use of ICT, connectivity, media integration, methodologies, academic and copyright legislation, logistics, infrastructure, and the formation of interdisciplinary teams. These challenges require reflection from both public policymakers and private sector managers who aim to implement distance education effectively.

2. Methodological Framework and Presentation of Results

Regarding the methodological procedures adopted in this research, the following aspects are highlighted: the study is applied and quantitative, utilizing statistical, inductive, historical-logical, and analytical-synthetic methods. Additionally, it is exploratory, bibliographic, field-based, and descriptive. The sample used in this research is a simple random sample, consisting of a total of 19 students from the 3rd year of Nursing and 5th year of Sociology, along with 12 professors working at the same institution.

It is important to note that the research was conducted at the Instituto Superior Politécnico Jean Piaget de Benguela. The institution offers 16 courses across 3 departments. However, this study focused only on two courses: Nursing and Sociology.

According to the questionnaire, the following results were obtained:

2.1. Student Results

Considering the data collected from the 19 students, it is noteworthy that a significant number of participants are female. Most of these students are enrolled in their third year of higher education, specifically in the Nursing and Obstetrics course.

Regarding the students participating in the research, the distribution is as follows: 58% are enrolled in the Sociology course, while 42% are in the Nursing and Obstetrics course. The majority of participants are from Sociology, likely because more students from this course accepted the challenge to participate in the study, unlike those from the Nursing and Obstetrics course, who showed greater reluctance.

When asked about the tools used for distance education, 84% of students use smartphones; 11% use computers; and only 5% use iPads. The data indicates that students use smartphones not only to maintain distance interaction but also for attending distance classes conducted by teachers during the COVID-19 period.

Regarding internet connection, 63% of students access the internet at home; 26% at the *Instituto Superior Politécnico Jean Piaget*; and 11% connect from work environments. This shows a preference for home internet connections due to better conditions for accommodation and the ability to multitask.

When asked if they have ever participated in distance education training, 79% said they have not; 16% said they never did; and only 5% reported participation, specifically mentioning Zoom. This suggests that students at *Instituto Superior Politécnico Jean Piaget de Benguela* often complement their academic activities with in-person sessions and face difficulties with asynchronous learning due to a lack of practical preparation for this mode of education.

Regarding participation in distance classes conducted by teachers at Instituto Superior Politécnico Jean Piaget de Benguela, 63% said they have not participated; 21% said they have; and 16% said they never did. A significant number of students did not attend the distance classes offered by their teachers.

On the topic of professor-student interaction in distance education, 37% of students described it as reasonable; 26% rated it as good; another 26% did not respond; and 11% rated it as poor.

Concerning their evaluation of the professor-student relationship at *Instituto Superior Politécnico Jean Piaget*, 47% considered it negative; 21% did not answer; 16% found it positive; and the remaining 16% described it as reasonable. Thus, while most students rated the relationship as reasonable, they found the professor-student interaction in distance education to be negative overall.

On one hand, 47% of the surveyed students considered their relationship with teachers in distance education as negative. On the other hand, 42% of students reported no difficulties in student-teacher interaction because teachers have been understanding and interactive when students have

questions about the course. However, 32% said they do face difficulties because not all teachers make course materials available, which hampers their learning, and they have no way to ask the teacher when they have doubts. Additionally, 26% abstained from answering this question. Despite the generally negative evaluation of the student-teacher relationship, students did not find it difficult to interact with teachers.

Regarding the challenges faced in distance education, students pointed out issues such as internet access, lack of technological resources, constant internet and power failures, lack of explanations for the materials posted on Google Classroom by teachers, and lack of training to handle this mode of education. For these reasons, when asked if they had anything to say about the topic, students argued that this educational modality was not good because, on one hand, most teachers only upload materials but do not explain them via Zoom or other means. On the other hand, the lack of conditions on the part of students for this type of education can be a problem that may "mutilate" their learning process.

According to students, the main challenges faced in distance education have been the high cost of internet access in the Angolan context, lack of technological resources, frequent internet and power outages, limited availability of teachers to clarify doubts about the materials taught at a distance (Google Classroom), and the lack of prior preparation or training for students to effectively use the virtual platforms created by the institution for distance education. Thus, students converged in their opinions, stating that distance education is indeed important but only works when students have all the necessary material conditions for accessing classes; otherwise, it ends up "mutilating" the students' learning process

2.2. Results from the Teachers

As for the gender of the 12 teachers interviewed, 58% are female and 42% are male. Therefore, correlating with the previously mentioned data, it can be inferred that a significant number of students and teachers participating in this research are female.

With regard academic qualifications and specializations, a significant portion of the teachers, 58%, hold Master's degrees; 34% are Bachelor's degree holders; and only 8% hold a PhD, with their specializations including Nursing, Economics, Biology, Statistics, Human Movement, Clinical Psychology, Chemistry, and Sociology.

When asked if they had heard of distance education, all teachers unanimously said yes and considered it good. However, a significant number of teachers had never participated in any distance education training. Those who had participated in such training covered topics such as Google Classroom, Google Forms, assessment system construction, the future teacher, and strategies and methods.

When questioned about their experience with distance education, i.e., if they had ever taught remotely, 67% said no, while only 33% said yes. Therefore, despite all the selected teachers having participated in some form of distance education training, a significant number had no prior experience in teaching remotely, which may affect the effectiveness of this teaching modality.

Regarding the teaching materials used by teachers in distance education, 58% used computers for teaching their students remotely; 25% used smartphones; and 17% used iPads. Thus, it can be deduced that the primary teaching medium used by teachers in distance education was the computer, noting that all of them stated they had internet access.

Furthermore, all teachers reported accessing the internet, and when asked where they usually connected, the results show that 50% connected from home; 33% accessed the internet at the *Instituto Superior Politécnico Jean Piaget de Benguela*; and 17% used public spaces with government-installed internet points. The data reveal that most teachers connected to the internet from home, suggesting that they had better access to the web in this setting due to better accommodation conditions.

As regards the frequency of internet use, 42% said they accessed it weekly; 33% said they used it daily; and 25% said occasionally. Therefore, it can be concluded that most teachers use the internet weekly due to the necessity of teaching remotely, which has become imperative for university faculty in light of the global pandemic, which Angola is not exempt from.

When asked about their relationships with students in distance education, 59% of teachers rated it as good, 33% as reasonable, and 8% as poor. This highlights a contrast between students, who find their relationship with teachers reasonable, and teachers, who view it more positively.

Regarding difficulties in interacting with students, 58% of teachers reported challenges, while 25% did not, and 17% did not answer. Even though most teachers rated their relationship with students as good, they still face challenges in remote interactions, aligning with students' more cautious view of the relationship.

The main difficulties teachers face in distance education are material conditions (58%) and didactic issues (42%). Despite this, 87% of teachers believe that *Instituto Superior Politécnico Jean*

Piaget de Benguela has adequate human and pedagogical conditions for distance education, while 13% disagree. Both students and teachers agree that the institution is equipped for distance education, despite the existing challenges. The key challenges highlighted by teachers include mastering ICT, the ability to learn and convey knowledge, dynamism, innovation, proper training, and internet costs.

Final considerations

This research aimed to identify the factors negatively affecting the interaction between teachers and students in Distance Education at *Instituto Superior Politécnico Jean Piaget de Benguela*. The main challenges in distance education differ significantly between students and teachers. For students, the primary challenges are access to the internet due to high costs, lack of technological resources, frequent power outages, inadequate explanations of content provided by teachers on the virtual platform (Google Classroom), and lack of training or preparation to handle this educational modality. Despite acknowledging the importance of distance education, students believe it is not functioning well. This is partly because a significant number of teachers limit themselves to uploading content to the virtual campus without providing explanations, and partly due to the students' lack of resources, which can hinder their learning process.

For teachers, the challenges include mastering ICT, the ability to learn and impart knowledge to students, dynamism, the willingness to innovate, adequate training for distance teaching, and internet costs, which were also highlighted by students. Therefore, it is recommended to diversify virtual platforms and expand internet access points in Angolan society, particularly in educational organizations, schools, universities, and other public and private entities, making its use a public policy that benefits everyone, both in-person and online.

From this study, it was possible to identify factors affecting the interaction between teachers and students at *Instituto Superior Politécnico Jean Piaget de Benguela*, including frequent power outages and inadequate teacher training for this educational modality

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Factors that negatively affect teacher-student interaction in distance learning at Instituto Superior Politécnico Jean Piaget De Benguela

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