Challenges faced by the tutors of the Polivirtual system

Desafíos que afrontan los tutores del sistema Polivirtual

http://doi.org/10.32870/Ap.v13n1.1938

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ABSTRACT

The objective of this research was to document experiences on tutorials from the perspective of tutors of the Polivirtual system at the National Polytechnic Institute. The work opted for a qualitative methodology and followed the research question: What challenges do tutors face in the Polivirtual system? The study was non-experimental, with a cross-sectional and exploratory design, and used a non-probabilistic and heterogeneous sample. The results obtained showed that the tutorial action is based on constant challenges, skills, strategies, digital media and the experiences of the tutors themselves. In addition, the research provided useful information about the tutor and their challenges in the Polivirtual system, while finding new trends and data within this topic, relevant for future and more introspective investigations. It is concluded that the tutorial activity alternates with other academic, administrative, training and even personal activities, which should be understood as challenges faced by tutors, although not generalizable or definitive.

Keywords
distance education; online learning; tutoring; counseling

RESUMEN

El objetivo de esta investigación fue documentar experiencias sobre las tutorías desde la perspectiva de los tutores del sistema Polivirtual en el Instituto Politécnico Nacional. Para el trabajo se optó por una metodología cualitativa y se siguió la pregunta de investigación ¿qué desafíos enfrentan los tutores en el sistema Polivirtual? El estudio fue no experimental, con diseño transversal y exploratorio, además utilizó una muestra no probabilística y heterogénea. Los resultados obtenidos evidenciaron que la acción tutorial se cimenta en constantes desafíos, competencias, estrategias, medios digitales y experiencias de los tutores. Asimismo, la investigación proporcionó información útil sobre el tutor y sus desafíos en el sistema Polivirtual, a la vez que encontró nuevas tendencias y datos dentro de este ámbito relevantes para futuras investigaciones más introspectivas. Se concluye que la actividad tutorial se alterna con actividades académicas, administrativas, formativas e incluso personales, que deben entenderse como desafíos que afrontan los tutores, aunque no por ello generalizables o definitivos.

Palabras clave
educación a distancia; aprendizaje en línea; tutoría; asesoramiento

Received: August 13, 2020
Accepted: November 30, 2020
Online Published: March 30, 2021

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INTRODUCTION

Education, as a generator of knowledge, is an important part in the evolution of human beings and society, and has two key dimensions: technological and pedagogical. The former refers to the media, applications and technological tools that provide support or infrastructure for the publication, interaction and organization of contents and strategies. On the other hand, the pedagogical dimension is the educational process based on the intercommunication between students and teacher. Along these lines, Polyvirtual, a system within the National Polytechnic Institute (IPN, by its acronym in Spanish), directed by the Polytechnic Unit for Virtual Education (IPN, 2020), aims to offer high school, undergraduate and graduate studies in alternative, innovative and flexible modalities, with the support of information and communication technologies (ICT).

Tutorial action is composed of accompaniment and guidance to students based on their academic situation and psycho-pedagogical strategies (Peinado, Mayagoitia and Cruz, 2019). The teacher-tutor who participates in the non-school-based modality accompanies and orients, both individually and in groups, the students in the pedagogical, scholastic and administrative areas, in order to develop skills that allow them to remain and to graduate in a timely manner in the course of studies in which they are enrolled (IPN, 2020).

Tutorials are defined in the regulatory framework of the IPN -where the foundations, characteristics and other inherent elements for their realization and operation are established (IPN, 2020)-, and their basic purposes are: to reduce failure rates, to reduce dropout rates and to increase terminal efficiency (Peinado and Jaramillo, 2018). To date, there already are results from its implementation -evaluated in the areas of the institute's schools-, among which are the registration of students, tutors and coordinators of the tutorial action plan of each academic unit, the collection of data identifying students, their cultural, economic, social and family capital, as well as their study habits. In addition, an alert module was established to detect problems that go beyond the academic environment.

In 2018, there were 7,288 tutor teachers, and 110,710 tutored students from the upper, middle and higher levels attended (IPN, 2018). In this context, the research aimed to document experiences on tutoring in the Polyvirtual system of the IPN from the perspective of tutors in the face of the challenges they face. One problem that the study met was the lack of data on this fact. In order to solve it, it was essential to search for information, which required documentary and empirical research.

From this perspective, the research shows what tutors think of tutoring, the problems they face, the communication strategies and digital media they use, among other aspects. In the interaction with tutor-teachers, a safe and confidential environment was created which allowed finding out what concerns, fears, conflicts and other situations were which they would

not normally state openly. Thanks to this, sufficient and first-hand information was obtained to project data that can facilitate the decision-making process and allow improving the tutorial activity.

THEORETICAL FRAMEWORK

In schools, tutorials include prevention programs with a positive influence on the development of students (Lyons, McQuillin & Henderson, 2019), their introduction facilitates learning of the tutored, as they are guided (Argente-Linares, Pérez-Lopez & Ordonez-Solana, 2016). For Lapeña-Perez, Sauleda, & Martinez (2011), tutoring aims to "create collaborative spaces permeated by communication and quality interaction, where tutors work on competencies of the tutored to optimize their learning process"; thus, tutoring, well put into practice, is a positive experience (Skaniakos, Penttinen, & Lairio, 2014) that provides many benefits to tutors and the tutored (Abbot, Graf, & Chatfield, 2018).

Although online teaching is becoming more widespread, it can become a lonely endeavor for some individuals involved (Walker & Forbes, 2018). For this reason, the quality of the tutorial relationship should be strongly associated with the effectiveness of tutor interventions (Dutton, Bullen & Deane, 2018). In this sense, tutoring develops when it is implemented in a digital semiotic social space (Chan, 2020) and practiced with both online and offline learning activities (Paukova, Khachaturova & Safronov, 2019).

Training tutors to develop effective communication strategies and to differentiate the role they should play in this activity is important (Fayram *et al.*, 2018). Training is a valuable component of ongoing professional development for teachers (Gjedia & Gardinier, 2018), and the combination of both training and professional development directly has an impact on the tutor, the tutored, and the tutoring program. In this regard, Matheson, Rempe, Saltis, and Nowag (2020) note that "teachers have unhelpful notions of tutoring prior to their tutor training, training combined with tutorial practice creates a positive impact on tutoring knowledge." Related to this, Hrastinski, Stenbom, Benjaminsson, and Jansson (2019) say that "it is possible to train tutors to focus on asking questions, rather than just delivering content, frequent use of many of the types of questions contributes to the intensity of the tutorial relationship."

On the other hand, Chamely-Wiik, Cooney and DeDonno (2020) investigated the profile of mentors by means of six variables: ethnicity, gender, age, tenure status, teaching assessments and research productivity. They say that these data are relevant for defining educational policies and practices. Other authors, such as Cruz, Goff and Marsh (2020), highlight the usefulness of humanistic mentoring as "a form of mentoring that emphasizes the importance of reciprocity, mutuality and empathy in the mentor-tutored relationship". Thus, extrinsic motivation plays a dominant role in the development of mentoring skills (Kaše, Saksida & Mihelič, 2019), which allows high-quality relationships to be formed during the mentoring program. Dutton, Bullen, and Deane (2018)

agree that "these relationships are primarily observed in tutors who demonstrate insight, critical self-reflection, self-efficacy, and a holistic view of their tutored."

The role of tutors is increasingly important in advancing student learning outcomes (Gjedia & Gardinier, 2018). Positive affect and self-efficacy can serve as personal resources and follow-up competence for tutors (Kaše, Saksida & Mihelič, 2019), as may autonomous learning, which promotes critical and reflective thinking, enables self-direction and self-regulation, employs metacognitive skills, and enhances meaningful learning (Peinado, 2020).

Institutions need to continuously monitor and act on changing tutoring needs (Li, Marsh, Rienties & Whitelock, 2017), and departmental and institutional support are key factors for this purpose (Davis *et al*., 2020). In this regard, Haresnape, Aiken, and Wynn (2020) explain that "mentoring programs should provide opportunities for mentors to share good practices in a supportive environment that is friendly, and that helps fostering community cohesion." In this paradigm, the importance of institutional policy, as a mechanism to facilitate faculty engagement, has a high impact on mentoring (Davis *et al.,* 2020), as well as the selection of tutors, their professional training (De FourBabb, Pegg & Beck, 2015), communication among different stakeholders, overall planning, and coordination of mentoring services (Gjedia & Gardinier, 2018).

To Chan (2020) "information and communication technologies can be leveraged to reduce the tensions associated with tutoring", the implementation of these in a tutoring program improves the overall satisfaction of students and, therefore, its effectiveness (ArgenteLinares, Pérez-Lopez & Ordonez-Solana, 2016). It should not be forgotten that students use online learning communities to meet their different needs during their studies (Fayram *et al*., 2018), and that the development of digital skills of the tutored is mainly due to intrinsic motivation (Kaše, Saksida & Mihelič, 2019) on the part of the tutoring program and the tutor's abilities to incentivize them.

Finally, tutor experience poses a short-term level of challenge in the achievement of expectations with respect to the tutored (Bonner et al., 2019). Mismatches exist between tutor perceptions and student expectations, each with their own approaches (Campbell, Gallen, Jones & Walshe, 2019) and, at times, tutor and tutored perceptions are discrepant. Tutors consistently note that they provide more support than the tutored perceive (Holt & Lopez, 2014), such that active tutoring practices are of a significant influence on how tutors perceived themselves (Davis & Jones, 2017).

To some tutored the quality of the tutorial relationship is associated with small to medium effects on outcomes (Lyons, McQuillin & Henderson, 2019). Overall, students perceive tutors to engender trust and motivation (Fayram *et al*., 2018). For these reasons, it is important to recognize that there are natural complications in tutoring, and that identifying their

characteristics is key to successful tutoring relationships (Davis & Jones, 2017), as well as considering that personal and psychosocial aspects of the tutor's life are involved (Skaniakos, Penttinen & Lairio, 2014).

METHOD

The purpose of this research is to document experiences about tutoring from the perspective of tutors in the IPN Polyvirtual system. The question which gave rise to this research was: what challenges are faced by tutors in the IPN's Polyvirtual system? For this essay, a qualitative methodology was chosen, and the study was non-experimental, with a cross-sectional and exploratory design, in addition, a non-probabilistic and heterogeneous sample was used. The exploratory approach was based on ideas of interest to deepen the field of education in the virtual mode, this was relevant because expectations, orientations, interests and challenges were gathered freely and spontaneously in the words of the research participants (Alvarez-Gayou, 2003). This made it possible to understand the world from the perspective of the interviewees and to atomize the meanings of their experiences (Taylor and Bogdan, 2000).

Participants

The sample used was of a non-probabilistic and heterogeneous type, which allowed for a careful and controlled choice of subjects. At this point, the academic tutoring personnel that to be interviewed were selected and contacted to request the interview. The selection was made up of ten experts and ten key informants who accepted. To determine the quality of an expert, it was considered that the tutoring teachers of the IPN Polyvirtual system should have extensive practical knowledge of the tutorial activity in schools at the middle or higher level, that they should participate in the management of virtual environments and that they should have extensive experience and knowledge about distance education in other educational institutions at the higher or middle level.

As for key informants, we considered their affiliation to the IPN's middle and high schools that worked under the distance learning mode, had training in the area of education and had a postgraduate degree, in addition to having at least one year's experience as a tutor, having practical knowledge on the subject and knowing the problems of distance learning at the IPN.

Subsequently, a list of candidates to be interviewed was drawn up and a characterization of the sample made, as shown in Table 1, which shows that 65% of interviewees are women and 35% men; 40% belong to the upper secondary level and 60% to the higher level. The length of service varies between seven and 32 years, and the overall average is 17.4 years of service. In terms of education, 30% have a bachelor's degree and 70% have postgraduate studies.

Table 1. Characterization of the sample

Num.	Gender	Interviewee	Level at which he works	Antiquity	scholarship
1	Woman	Expert	Medium superior level	9 years	postgraduate studies
2	Woman	Expert	Medium superior level	20 years	postgraduate studies
3	Woman	Expert	Medio superior	12 years	postgraduate studies
4	Man	Expert	Medium superior level	30 years	Bachelor
5	Woman	Expert	Medium superior level	20 years	postgraduate studies
6	Woman	Expert	Higher level	11 years	Bachelor
7	Woman	Expert	Higher level	16 years	Bachelor
8	Man	Expert	Higher level	14 years	postgraduate studies
9	Woman	Expert	Higher level	15 years	postgraduate studies
10	Man	Expert	Higher level	7 years	postgraduate studies
11	Woman	Key informant	Medium superior level	9 years	Bachelor
12	Woman	Key informant	Medium superior level	25 years	postgraduate studies
13	Man	Key informant	Medium superior level	32 years	Bachelor
14	Man	Key informant	Higher level	20 years	postgraduate studies
15	Man	Key informant	Higher level	24 years	postgraduate studies
16	Woman	Key informant	Higher level	16 years	postgraduate studies
17	Man	Key informant	Higher level	12 years	Bachelor
18	Woman	Key informant	Higher level	24 years	postgraduate studies
19	Woman	Key informant	Higher level	22 years	postgraduate studies
20	Woman	Key informant	Higher level	11 years	postgraduate studies

Instrument used to obtain information

The instrument for obtaining information was constructed with a pilot test, where individual in-depth interviews were conducted with five tutors of the IPN Polyvirtual system who were not among the selected sample, but belonged to the population with characteristics similar to those of the study sample. This test helped to estimate the reliability of the

questionnaire. To guarantee the content validity of the instrument, expert judgment was used to reduce the probability of error in its configuration.

The method of individual aggregates was also used, which consisted of asking each expert for a direct estimate of the questions (Corral, 2009), thus achieving relevance, congruence and clarity in their wording. Likewise, the concerns about the study and the positions on the subject were known, which made it possible to orient and refine the features of the research, in order to achieve greater relevance and build the interview guide.

Gathering information

Once the interview guide was constructed, supported by the results of the pilot test and the approach with experts, the next step was to conduct individual semi-structured interviews with the twenty participants in the sample. The questions in the guide were:

- What does being a tutor mean to you?
- What other academic work do you do in addition to your tutoring activity?
- What communication strategies do you use the most?
- What digital media do you use to keep in touch with your students?
- What challenges do you face as a tutor in the IPN Polyvirtual system?

In order to complete this stage, the criterion of sufficiency or theoretical saturation of the qualitative data was followed (Alvarez-Gayou, 2003), which refers to the fact that there was a point at which the informants no longer provided new data and their comments began to be repetitive, at which point it was decided to conclude the application of interviews.

Systematization of the information

With the purpose of having the information systematized, Atlas.ti was used, a computer tool whose objective is to facilitate the qualitative analysis of large volumes of textual data. The theoretical foundation of the Atlas.ti program is based on the grounded theory of Glaser and Strauss (1967), an approach that gives preference to the data and the field of study over the theoretical assumptions that are formulated by relating the empirical data found in it. The purpose is not to reduce complexity by breaking it down into variables, but to increase it by including the context.

It is not the intention of Atlas.ti to take control away from the researcher; on the contrary, it allows solving a great variety of methodological challenges and, at the same time, working data sets to support deeper

levels of analysis (Paulus & Lester, 2016). In this regard, San Martín (2014) says:

> the main purpose of the program is to embrace theory-building procedures; it also facilitates the organization of the analysis by means of functions that allow segmenting quotations, conceptualizing, recording reflections, categorizing, relating processes and showing the theory which is built through diagrams. All these first- and second-order procedures give the analysis greater explanatory power for educational research (p. 114).

In this same sense, Atlas.ti allows documenting analytical decisions in a transparent, reflective, rigorous and systematic way (Paulus & Lester, 2016). The potential of the program is leveraged to show substantial findings (Woods, Paulus, Atkins & Macklin, 2016), by developing skills of abstraction, analysis and synthesis of information (San Martín, 2014).

Analysis of the information (Hermeneutic Unit)

The result of working with the Atlas.ti program was a file, where the data related to the analysis were stored, which was called the Hermeneutic Unit. This unit is the container that groups the primary documents, quotations, codes, families and networks. According to Peinado, Cerecedo and Jaramillo (2015) its development is as follows:

> The primary documents are the basis of the analysis, in other words, they represent the field data in this research, they are the transcripts of the interviews that were conducted and stored on the computer hard disk. Quotations are fragments of the primary documents with some meaning, i.e., they are meaningful segments of the primary documents, they can be understood as a first selection of the source material in a first reduction of the field data. Codes are usually the basic unit of analysis, i.e. the analysis was based on them, they can be understood as conceptualizations, summaries or groupings of quotations, which implied a second level of data reduction. Even so, it should be considered that they do not necessarily have to be related to quotations, so codes can also be used as useful concepts for analysis that do not necessarily have a direct relationship with text fragments. Families, like codes, can be viewed as groupings of quotations, and the program allows the remaining main components (documents, codes and annotations) to be grouped into families. These groupings were the first step in the conceptual analysis. Networks are characteristic components of Atlas.ti and are the main elements of the conceptual work, considering that they allow representing complex information in an intuitive way through graphical representations of the different components and the relationships established between them. In this way, the categories of analysis were determined based on the data derived from the grouping of the codes; in the process of structuring the codes, Megafamilies, Superfamilies and Families were formed (p. 144).

The Megafamilies, Superfamilies and Families structuring are shown in Table 2.

Table 2. Structuring of Megafamilies, Superfamilies and Families

Megafamilies	Superfamilies	Families
1) The tutor in the Polivirtual system	1) What does it mean to be a tutor?	1) Based on experience
	2) Tutorial activity	2) Professional considerations
		1) Main features
		2) Purposes, uses and realities
		3) Little known intrinsic aspects
2) Additional academic tasks of the tutor	1) Academic	1) Teach classes in front of a group
		2) Teach distance classes
		3) Prepare materials for the class
		4) Advise students
	2) Administrative	1) Participate in various meetings
		2) Attend procedural formats
		3) 3) Support school issues
		4) Promotion, incentives, scholarships and others
	3) Formative	1) Participate in courses and diplomas
		2) Attend forums, congresses, etc.
	4) Personal	1) Household occupations
		2) Attention to children
		3) Related to the couple
		4) Attention to parents
		5) Proper to health and rest
3) Digital media	1) Environment and reality of the student	1) Employ skills already learned
		2) Promote self-direction in the tutee
		3) Develop critical and reflective thinking
		4) Self-regulation
	2) Digital resources	1) Learn more information and communication technologies
4) Challenges of the tutor in the Polivirtual system	1) Tutors' experiences	1) Management elements
		2) Technical factors
		3) Related to students
		4) Tutor's work environment

RESULTS

With regards to the first question, on the meaning of being a tutor, the interviewees said this is a character who accompanies the student in his academic path, who is there to support him in his performance -in this case in the distance learning modality-, to orient him/her and provide him/her with guidance and support, always based on school guidelines and teaching experience. For those interviewed, being a tutor is a job that involves time, commitment and responsibility.

The quality of the tutorial action is closely related to the competencies that tutor teachers must possess, such as the ability to communicate efficiently and empathetically with their students, psycho-pedagogical skills and the

use of new technologies. They agree that the tutor's work is important and enjoyable, since it not only makes them a facilitator who contributes to the training of their students, but also because it gives them the opportunity to share their knowledge and acquire excellent experiences.

With respect to the question on what other academic work they perform in addition to their tutoring activity, the interviewees reported that they are involved in different and varied activities: they teach classes in person or at a distance, prepare teaching materials, offer degree counseling, work on classroom projects, attend social service programs, participate in forums, colloquiums, congresses, training courses and diploma courses, in addition to being involved in different work related to their school.

Regarding the main communication strategies which they use, the interviewees mentioned that in the tutorial action process, communication is a dynamic one, especially because it is a virtual environment. In these environments, the form and means of communication change continuously, so specific skills are required so that trust is created among these actors, who are not in the same space and time. In addition, they say that experience in cooperative and collaborative work is essential, with the intention of understanding and experiencing the communicative processes necessary to generate learning in the virtual environment. Communication within tutorials tries to foster and consolidate a simple dialogue of interaction that is, at the same time, motivating, persuasive, structured, adaptive and generalizable. In this context, channels and media play a fundamental role in tutoring.

Regarding the digital media used by tutors to be in contact with their tutored, the most traditional ones were mentioned: the first one is the Polyvirtual system platform, with its internal messaging, its meeting forums (cafeteria and polyfriends), its informative forums (latest news and news update), and its consultation forums (questions to the advisor and questions to the tutor); secondly, email (institutional and personal); and, finally, social networks such as WhatsApp, Facebook and Twitter.

As for the challenges they face as tutors of the IPN's Polyvirtual system, the interviewees point out internal aspects of the institution where they work, such as overcoming administrative and managerial complications within their schools, getting to know the tutorial work of the system extensively and going deeper into all the regulations that govern the Polyvirtual system; they also mention aspects related to their work as tutors, such as having the necessary technological tools to carry out tutoring, who are able to update -despite the lack of time- their pedagogical and technological skills, as well as to develop their skills to guide their students in the socio-affective area.

Additionally, they reported that a difficult challenge to achieve in the tutored student is responsibility, independence and autonomous learning. This is due to the fact that, on occasions, students want almost everything solved, they do not read the instructions or the documents sent to them as support to carry out the activities, most of them do not review the

comments left on the platform, and let alone the feedback they receive. The guidelines that were established at the beginning of the semester for the adequate accompaniment and follow-up of their academic trajectory are continuously reiterated to them, guidelines that are intended to avoid obstacles, but most of the time at no avail. However, the biggest challenge arises when the students do not have technological skills.

When the main responses of the interviewees are considered, some relevant common points can be noticed. Among these, the meaning of being a tutor, communication strategies, digital media and other tasks that must be attended to. To conclude this section, Figure 1 shows the graphic representation of the aforementioned results.

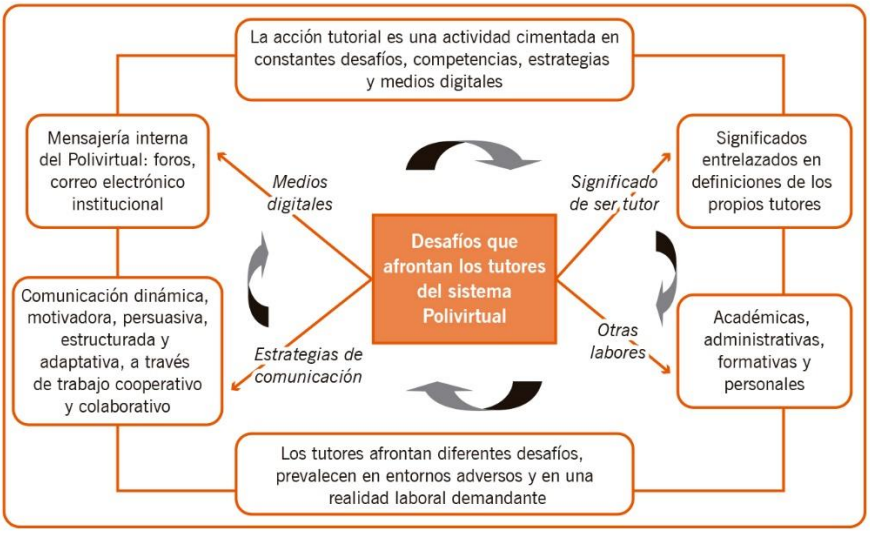

Figure 1. Graphic representation of results.

DISCUSSION OF RESULTS

International educational trends propose the need for flexible educational systems that include new ways of organizing and promoting knowledge, as well as novel mechanisms that facilitate learning achievement. This same need is evident in the results of the research, which is met by the IPN, through the Polyvirtual system, by offering options to train independent people, managers of their learning process, with digital and communicative skills relevant to the social and technological needs demanded by the current reality (IPN, 2020).

In this regard, we agree with Lapeña-Pérez, Sauleda and Martinez (2011), who define tutoring as an activity based on principles of network collaboration, commitment and reflection on practice. In this area, Bonner *et al.* (2019) assert that "the articulation of strengths and weaknesses of

the tutor impacts tutorial activity". While Skaniakos, Penttinen and Lairio (2014) maintain that in tutoring "personal and psychosocial aspects of the tutor's life are involved". The findings of the study agree with the authors' statements, due to the fact that the elements mentioned play an important role when guiding and accompanying the tutored. In such a way that these connotations have a positive impact on the academic development of the students.

When considering the results of the interviews, it should be taken into account that, in addition to the tutorial activity, tutor professors perform various tasks, such as academic, research, training and administrative activities. In this sense, what is established by De Four-Babb, Pegg and Beck (2015) is confirmed, who recognize that academia is changing and academics experience transitions or follow alternate career paths. These results are consistent with what Abbot, Graf and Chatfield, (2018) state about "the roles and responsibilities of tutors can be complex and varied, even within a single tutoring program".

In this context, it is not advisable to add more activities to tutors, because there is a risk of having them saturated and causing deficiencies in their performance and in the quality of tutorial actions. With this premise, Paukova, Khachaturova and Safronov (2019) and Chan (2020) say that it is important to prevent tutoring from becoming a challenge, while the different roles played by tutors should be recognized.

In addressing the results of the study, the need is established to have mentorships that monitor and support mentors in developing a close relationship with the tutored, while providing opportunities to achieve the mentoring objectives themselves. It is agreed with Lyons, McQuillin and Henderson (2019) that tutoring should provide opportunities to foster a sense of community and a supportive environment; likewise, it is agreed with Haresnape, Aiken and Wynn (2020) about supportive scenarios transiting towards knowledge and learning orientation, characteristic of the virtual system.

The results of the research establish that the communication strategy should be directed to the current channels and media, it should be built on strong foundations, such as motivation, trust, constancy and interaction. In this same sense, it is agreed with Abbot, Graf and Chatfield (2018) that tutor and tutored relationships, and the clarity and expectations of these roles are important issues. For this reason, identifying the quality of the tutorial relationship is crucial (Dutton, Bullen & Deane, 2018), as is relying on humanistic praxis, highly productive for both developing relationships and transmitting knowledge (Cruz, Goff & Marsh, 2020), or moving to a question-based tutorial relationship, where tutors and the tutored can use different types and reflect on these (Hrastinski, Stenbom, Benjaminsson & Jansson, 2019). Whatever the communication strategy, the results of the research sustain that it should be tutor-centered, although the approaches aimed at accompanying and following up with students vary from tutor to

tutor. What is really valuable is to recognize that these are cardinal issues in understanding tutorial activity.

The results showed that tutors use different digital tools in their tutoring work. The most common is the IPN's Polyvirtual platform, where they interact extensively in forums and internal messaging. The second most used tool is the institutional e-mail, as a means of official communication between the tutor and the student. On the margin of the former two, there are social networks, which according to Smutny and Schreiberova (2020), and Tang and Hew (2017), are popular among students. These are all innovative proposals that are adapted to the requirements of the IPN virtual teaching platform. In this sense, one agrees with Makarova and Makarova (2018) and Maina, Santos-Hermosa, Mancini, and Guardia (2020), that information and communication technologies facilitate learning environments, tutoring programs, and the work of tutors.

Another important aspect of the research results is the expressive and interpretative dimension of communication as challenging factors, since the level of technological skills and communication abilities of the tutors, as well as aspects linked to the context -for example, not having the necessary technological tools at times- have an impact on tutoring. Another no less important fact in the research is that digital media should provide a supportive environment to share strategies among tutors, and thus foster a sense of belonging and institutional and group identity.

Finally, the research findings provide positive evidence about the tutorial action, showing it as an activity based on constant challenges, competencies, strategies, digital media and tutors' definitions. This work explored the experiences regarding the challenges faced by the tutoring of the Polyvirtual system, at the IPN, and its results contribute to the generation of knowledge about the application of tutorial action in online learning and distance education.

CONCLUSIONS

The work of guided and supervised accompaniment is a fundamental piece of distance education, for this reason tutoring has a positive influence on the development of students. Along the way, tutors encounter different challenges, so they develop learning and reinforcement mechanisms to prevail in adverse environments. However, in order to be incorporated into this type of context, they need to adjust their approaches to a more demanding work reality.

In this sense, tutors are more likely to complement each other in the process of articulating their strengths and weaknesses to the practice of another tutor, taking knowledge and skills from those with more experience, which will allow them to absorb better practices and obtain more favorable results in their occupation. The exchange of information between tutors from different institutions offers professional support solutions, but this can also be provided through training, short courses or

diploma courses designed to reaffirm knowledge and disseminate experiences - these even make it possible to build relationships with other tutor teachers.

The non-school-based mode at the IPN, through the Polyvirtual system, has a wide opportunity niche for tutoring teachers. Undoubtedly, the tutorial activity includes both online and offline learning activities, and sometimes even intermingles with other academic, administrative, formative and personal activities. Within distance education, this situation is one of the assumptions to be considered when understanding them as challenges faced by tutors.

This research provided useful information on the work of the tutor and the challenges he/she continuously faces in the Polyvirtual system of the IPN. The proposed line of work opens options to inquire into new trends within this area. Although this study and its results are not generalizable, and even less conclusive, it is considered that data were obtained that may contribute to more introspective research. For future work, it is recommended that the size of the sample be extended to include the experiences of tutored students, as well as to investigate the acceptance of technologies by other participants in the educational system, in addition to the new technologies that are used -or could be used-, and to investigate the responsibility of school authorities, the importance of current regulations and the financial impact on the educational environment.

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HOW TO CITE:

Peinado Camacho, José de Jesús. (2021). Desafíos que afrontan los tutores del sistema Polivirtual. *Apertura*, *13*(1), pp. 8-21. http://dx.doi.org/10.32870/Ap.v13n1.1938