



## Assessment of compliance with the dimensions of distance education in a university institution

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### Summary

**Objective:** to identify the assessment of university professors on the dimensions that distance education fulfills. **Method:** study mixed descriptive concurrent with samples to convenience, 43 teachers in phase quantitative and 5 teachers in qualitative phase, using a questionnaire and semi-structured interview, respectively. **Results:** quantitative assessments, are high in location (96.7%), space (93.3%) and technology (86.7%) but divided, in high and average in temporality, interaction and control of the student; in it qualitative, the dimensions of location, space, technology, interaction and control of the student have a number of mentions in favor of 5, 5, 8, 10 and 9, respectively. The dimensions of space, temporality and interaction have a number of unfavorable mentions of 3, 13 and 4, respectively. **Conclusion:** the compliance ratings for the dimensions of temporality, location, technology and interaction of the phase quantitative are backed by the of the phase qualitative, to exception of the space and control of the student.

**Words clue:** dimensions, education to distance, education university, assessment

### Evaluación del cumplimiento de las dimensiones de la educación a distancia en las instituciones universitarias

#### Resumen

**Objetivo:** identificar la valoración del docente universitario sobre las dimensiones que cumple la educación a distancia. **Método:** estudio descriptivo concurrente mixto con muestras por conveniencia, 43 docentes en la fase cuantitativa y 5 docentes en la fase cualitativa, mediante cuestionario y entrevista semiestructurada, respectivamente. **Resultados:** las valoraciones cuantitativas son altas en ubicación (96,7%), espacio (93,3%) y tecnología (86,7%) pero se dividen en alta y media en temporalidad, interacción y control del estudiante; cualitativamente, las dimensiones de ubicación, espacio, tecnología, interacción y control del estudiante tienen un número de menciones favorables de 5, 5, 8, 10 y 9, respectivamente. Las dimensiones de espacio, temporalidad e interacción tienen un número de menciones desfavorables de 3, 13 y 4, respectivamente. **Conclusión:** Las valoraciones de cumplimiento de las dimensiones temporalidad, ubicación, tecnología e interacción de la fase cuantitativa se sustentan en las de la fase cualitativa, con excepción de espacio y control del estudiante.

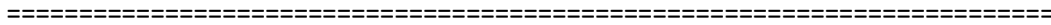
**Palabras clave:** dimensiones, educación a distancia, educación universitaria, evaluación

### Avaliação do Compliance dimensões dá educação a distância em uma instituição universitária

#### Resumo

**Objetivo:** identificar a avaliação do professor universitário sobre as dimensões que a educação a distância cumpre. **Método:** estudo misto descritivo concorrente com amostras de conveniência, 43 professores na fase quantitativa e 5 professores na fase qualitativa, utilizando questionário e entrevista semiestructurada, respectivamente. **Resultados:** as avaliações quantitativas são altas em localização (96,7%), espaço (93,3%) e tecnologia (86,7%), mas divididas em altas e médias em temporalidade, interação e controle do aluno; qualitativamente, as dimensões de localização, espaço, tecnologia, interação e controle do aluno têm um número de menções favoráveis de 5, 5, 8, 10 e 9, respectivamente. As dimensões de espaço, temporalidade e interação têm um número desfavorável de menções de 3, 13 e 4, respectivamente. **Conclusão:** As classificações de conformidade para as dimensões de temporalidade, localização, tecnologia e interação da fase quantitativa são apoiadas pelas da fase qualitativa, com exceção do espaço e do controle do aluno.

**Palavras-chave:** dimensões, educação a distância, educação universitária, avaliação



## Introduction

The global crisis caused by the Covid -19 pandemic, which began globally in the first quarter of 2020, generated many changes in the various activities of the world's population, one of the hardest hit being those related to education.

As the World Bank (2020) states, on that date most countries closed their schools, generating a strong impact on the educational processes of children and young people, which were aggravated by social distancing policies. The aforementioned impact, related to the closure of schools, was presented with the interruption of learning, the increase in inequality in learning and the reduction of attachment to school (World Bank, 2020).

This is how UNESCO mentions “the pandemic has forced us to massively leave aside teaching and learning in traditional environments with physical interactions” (United Nations Educational, Scientific and Cultural Organization). Culture [UNESCO], 2020, p. 7); so many institutions, including higher education organizations, found it necessary to migrate from face-to-face educational processes to those supported by ICTs , such as educational platforms or also called Virtual Learning Environments (EVA, in Spanish).

For his part, Cáceres-Correa (2020) indicates that, although the distance modality has been criticized and is not the best of options, under conditions of inequality, as happens in Latin America, it became a viable option in pandemic conditions.

So, for the inconvenience of continue developing, of shape in person, the educational process, educational organizations showed their interest in the distance modality, which had already been presented with the support of technology, and specifically the internet (Quintana Avello, 2020).

Thus, this forced change, caused by the health emergency, pushed traditional education towards what Hodges et al. (2020) called “emergency remote education” and Ruiz Mendoza et al. (2021) moved to an unscheduled phase, under conditions of insufficient technological infrastructure.

In Latin America, technology-assisted distance education in higher education institutions has been gaining ground, so much so that it has become a training alternative for those who, due to distance, time and employment issues, cannot access the traditional education system, to overcome these impediments and obtain education ( Areth Estévez et al., 2015). This migration was further accelerated by the health emergency caused by Covid 19. In this way, distance education assisted by ICTs, such as EVAs , become a modality that promotes flexibility in the teaching-learning process, bidirectional communication and teamwork (Nagua Suing , 2018).

Now, distance education can be defined, as cited by Pregowska (2021), as that in which teachers and students are physically separated and instructions are given using various types of technology, which can be synchronous or asynchronous. For his part, Moore (1977) define as a set of methodologies instructional in the that the teaching HE develops



apart from learning, so that communication between teacher and student is facilitated in print, electronic, mechanical or other form.

Similarly, Saykih (2018) cites that distance education is a form of education that involves a physical separation between the teacher and the student, presented around planned and structured learning experiences, for which communication channels are used. various ways that promote student-facilitator interaction, as well as interaction between students and the educational resource.

In view of the above and according to Ruiz Ortiz and Pichs Herrera (2020), distance education revolves around two basic factors: physical distancing and communication. In addition to a strong institutional base, self-learning, correct instructional design, support technologies and the active participation of teachers and students ( Simonson , 2002).

Therefore, even within a virtual environment, distance education retains certain characteristics and/or dimensions that must be reflected, namely, time, location, space, technology, interaction, learning model and student control ( Piccoli et al., 2001). These dimensions of distance education are characteristics of this modality that must be observable and perceived by the participants in the teaching-learning process, such as teachers and students.

It is then that, under the previously seen context, the importance of carrying out a study that identifies the assessment that one of the participants in the educational process has of the dimensions of distance education is seen. Given the relevance of this topic, this article seeks to identify the assessment that the undergraduate professor has in relation to the dimensions that distance education must meet in a higher education institution.

## **Materials and methods**

This research was carried out with a mixed approach. Its scope is descriptive with a concurrent design (QUAN-CUALI). The study population is 43 teachers from which a convenience sample of 30 teachers (70%) was obtained for the quantitative phase, while A convenient nested sample (5) is taken for the qualitative phase. All participants develop their courses through the virtual environment Moodle. The technique for obtaining data in the quantitative phase is the survey, using the questionnaire as an instrument, while in the qualitative phase the interview technique is used with the use of the semi-structured interview guide. For the analysis of the results, the SPSS 26 and MAXQDA programs are used for the analysis of quantitative and qualitative data, respectively.

## **Results and discussion**

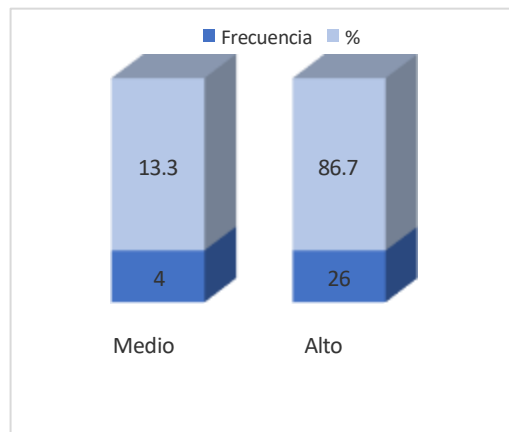
The results obtained from the sociodemographic information section of the questionnaire (quantitative phase), which was administered to the 30 teachers, are summarized as follows: 76.7% of participants are men, 80.0% of participants are between 20 and 50 years old, 66.7% reside in the capital city of Guatemala and finally, 30.0% have obtained a bachelor's degree, while 66.7% have a master's degree.



The data obtained of the questionnaire and analyzed to through of SPSS 26, previous scoring, report the following levels of compliance:

**Figure 1**

*Level of compliance of the Education to Distance (EA)*



*Note.* Figure 1 shows the level of compliance for all dimensions assessed. In general, it is high for 86.7% and medium for 13.3% of the study participants.

**Table 1**

*Level of compliance of the dimensions of the Education at the distance*

	Frequency	%
<b>Half</b>	4	13.3
<b>High</b>	26	86.7
<b>Total</b>	30	100.0

*Note:* The level of compliance with the dimensions of distance education was rated high by 86.7% of teachers.

It should be noted that, based on the assessment carried out with the variable under study, 86.7% of the teachers value at a high level the fulfillment of the dimensions that distance education is enough.

Individually, each dimension presented the following quantitative results :



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**Table 2**

*Level compliance by dimension*

<b>Dimension</b>	<b>Level of assessment</b>	<b>Frequency (%)</b>
		<b>100.0</b>
<b>Temporality</b>		
	Half	26.7
	High	73.3
		<b>100.0</b>
<b>Location</b>		
	Low	3.3
	High	96.7



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<b>Space</b>	<b>100.0</b>
Half	6.7
High	93.3
<b>Technology</b>	<b>100.0</b>
Low	3.3
Half	10.0
High	86.7
<b>Interaction</b>	<b>100.0</b>
Low	13.3
Half	30.0



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High	56.7
<b>100.0</b>	
<b>Control of the student</b>	
Low	10.0
Half	30.0
High	60.0

*Note.* On 4th the 6 dimensions, the level of compliance, from the perspective of teacher, is valued as high (above of the 70% of the respondents). In so much that only in 2 dimensions, The high rating is expressed by between 56% and 60% of the teachers in the study.

The dimensions with the highest compliance are location (96.7%), space (93.3%) and technology (86.7%), which reflects that the teacher's perception is that the level of teaching-learning management in the synchronous modality is adequate, as well as the availability of education at any time; likewise, the level of ubiquity that is managed is high. Similarly, it is reflected that the teaching resources that the modality uses are well managed and the level of communication between teachers and students is adequate.

Other outstanding dimension, although not with similar weighting, is the temporality considered high level by 73.3% of teachers. However, the results of the other 2 dimensions, from the quantitative approach, such as interaction (56.7%) and student control (60.0%), show that the teacher does not value with so much relevance, from your practice teacher. Furthermore, the qualitative results complement the information as follows:

The analysis of “temporality”, and specifically of asynchronous activity, shows difference of opinions. Thus, 7 mentions refer to the fact that teachers do not have control over the educational process in this modality because they are not authorized to make changes to the content design. On the other hand, only one mention refers to the fact that the management of the process is partially controlled by the teacher. Only 5 mentions affirm that the teacher does have control.

In how much to the "availability educational in any hour of the day" (code of the dimension



temporality), there were 6 mentions arguing that there is saturation on the platform at certain times of the academic cycle. There are 4 mentions in favor of educational availability.

The quantitative analysis of the dimension “temporality” shows that there is a variation in criteria, because the results are distributed between high and medium levels, in relation to synchronous activity; meanwhile, the qualitative analysis of asynchronous activity also presents a variety of opinions.

The analysis of qualitative results that reflect the antagonism of criteria, comes to support the fact that less than 75% of the teachers surveyed do not value this characteristic of the dimension highly.

Regarding location, 96.7% of the survey participants rate compliance with this dimension as high. The quantitative data is supported by the analysis of the data obtained from the interviews, according to which the largest number of mentions (5) verify that this characteristic is met, while 2 mentions cite that ubiquity is limited, in the specific case of mobile phones or cell phones. Along the same lines, 2 more mentions emphasize that ubiquity is true, as long as the location is high. when using a laptop or desktop computer. The results also they make it look like that the fulfillment of the dimension is depending on the level of connectivity the user has.

He analysis with approach mixed of the dimension "location", admits see that exists concurrence of opinions in both phases of the study, so her assessment is confirmed.

In the “space” dimension, it is observed that 93.3% of the participants believe that their level is high. These quantitative results do not coincide with those obtained in the interviews, and there is a contradiction, because while this characteristic is corroborated by 5 mentions of teachers, who express satisfaction with the variety of resources that the modality makes available, there are 3 antagonistic mentions, which show that more resources are lacking within the modality. platform that technologically supports the distance modality.

The mixed analysis of the “space” shows that there is a contradiction in the evaluations of the participants between the 2 phases of the study, so it is convenient to revalidate this characteristic and thus confirm or not its compliance. Now in relation to the “technology” dimension, which implies the group of tools used, in the distance education modality, in the delivery of the learning material and which assists communication and management, between teacher and student, he 86.7% of the teachers value This dimension as high. With he approach qualitative is find 8 mentions that confirm the facilities of share material between users, However, one mention clarifies that material management is present, but it is difficult to put into action.

The mixed analysis of “technology” shows that there is agreement of opinions in both phases of the study, which supports the assessment of the dimension. The dimension of “interaction” between students and between teacher and student is rated as high by 56.7% of teachers and as medium by 30.0% of them. At the level of the semi-structured interviews, also HE reflects a spot of view divided, of manner that HE have 7





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6 mentions confirming the interaction between teacher and student, 6 mentions citing the existence of an interaction only between students, 4 mentions antagonistic to the existence of this characteristic between student and student, and finally, 3 mentions confirming the interaction between teacher and student and student-student. The qualitative analysis with its variation of criteria at the level of the assessment of the dimension supports the also divided values shown by the quantitative analysis.

Finally, this study shows that the assessment that participants have regarding “student control”, that is, the level of personalization that is present in distance education, is observed by teachers with different points of view. Thus, 60.0% of the participants value the dimension with a high level while 30.0% value it with a medium level. From the qualitative approach, the point of view is different because the teachers express, through 9 mentions, that they confirm the existence of this dimension. There were no contrary mentions.

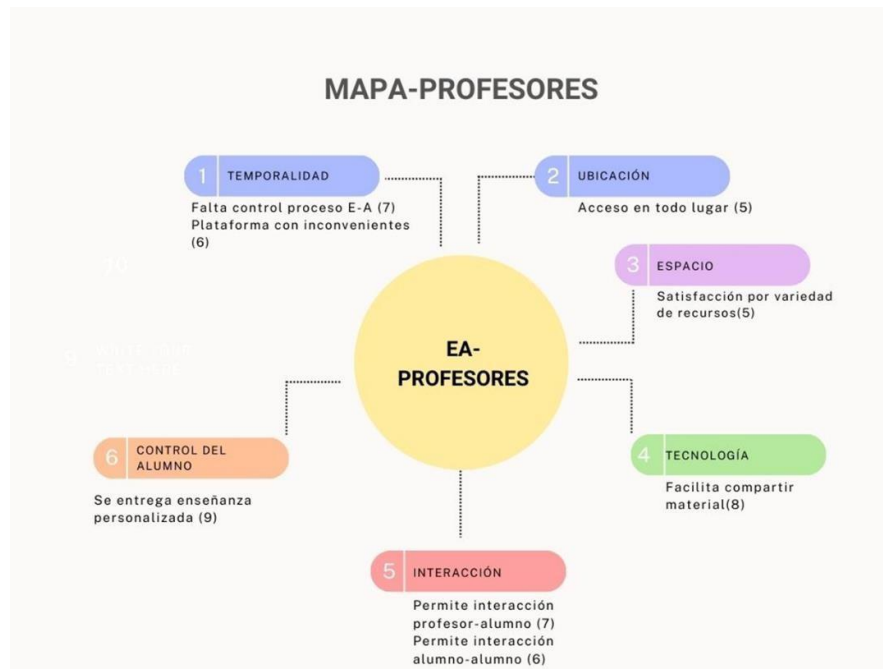
The mixed analysis of the “student control” dimension reveals the existence of contradictions in the points of view of the participants in the two phases of the study, so it is important to revalidate this dimension to reaffirm its compliance.

In similar research, such as the study presented by Fernández Escárzaga et al. (2020) and That of Villalobos Muñoz (2021) its results show that the teaching-learning process, through distance education, was limited by the existence of a technological gap due to limited access to the internet, which considerably reduced communication, however, the present study reflects contrary results with the dimension of technology (delivery of learning material and communication).

On the other hand, the data obtained in the qualitative phase through the semi-structured interview and analyzed with MAXQDA, are summarized as follows:

## **Figure 2**

*Assessment of dimensions of the Distance Education (EE)*



*Note.* It is noteworthy that, in temporality, there is a lack of control of the process; that ubiquity is valued by several mentions; that this modality allows the satisfactory use of a variety of resources; that at the level of technological support it allows sharing material between users; that, at the level of interaction, the education to distance allows the interaction of teachers and students with each other; and finally, teachers value the fact that there is delivery of personalized teaching.

Santos et al. (2020) indicates that teachers in their study perceive that distance education has presented a lack of exchange of information and material with the student body, results which partially coincide with those of the mixed analysis of the present study, at the level of the interaction dimension (student-student and teacher-student).

Finally, Soler Morejón and Borjas Borjas (2019) comment that the teachers in their study, despite the difficulties encountered in the distance education process, such as the lack of computers and the Limitations of connectivity, either good, the lack of experience In this modality, it is considered that the distance learning modality generates positive experiences. This study largely agrees with the assessment given by the teachers in this study on the dimensions of temporality, location and technology.

## Conclusion

The assessment that the professor has on the dimensions to be fulfilled by distance education, in the higher education institution under study, is high for 86.7% of participants, from the global quantitative approach. However, from the mixed perspective, it is observed that: there are contrary opinions regarding the fulfillment of: the synchrony and asynchrony of the modality, the availability of distance education, the level of satisfaction due to the variety of available resources and the personalization of the educational process, and finally, variation in the points of view. about the interaction between students and between teacher-student. Is advisable extend he



study towards an explanatory scope research, with the participation of teachers and students, which not only clarifies the contradiction of assessments in 2 dimensions, but also allows the identification of causal relationships between the variables and dimensions studied.

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### Statement of consent informed

He study HE performed respecting he Code of ethics and hello good practices editorials of publication.

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