

Level of Digital Teaching Competence on the Verge of the Post Pandemic

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Yersi-Luis Huamán-Romani¹(✉), Freddy Carrasco-Choque¹,
Edwing-Alcides Maquera-Flores², Juan-Carlos Lázaro-Guillermo³,
Federico Kuaquira-Huallpa⁴

¹ Universidad Nacional de Frontera, Sullana, Perú

² Universidad Nacional José María Arguedas, Andahuaylas, Perú

³ Universidad Nacional Intercultural de la Amazonia, Ucayali, Perú

⁴ Universidad Nacional Amazónica de Madre de Dios, Puerto Maldonado, Perú
ylhromani@gmail.com

Abstract—Education at all educational levels took a 180° turn, even more if we investigate the level of digital competencies that will leave the constant training received by teachers in times of pandemic, so our main objective is to analyze and describe the level of digital competence in teachers after having experienced two years in virtual environments and these will be evaluated by the students themselves. This research is descriptive, cross-sectional and correlational with a quantitative approach. Digital competencies were analyzed with a sample of 1045 students from state and private universities who participated in the online survey, where an evaluation instrument with 21 questions divided into 6 parts was used, resulting in the optimal Cronbach's Alpha for its application in the Peruvian context, analyzing with different statistical tests and resulting in significant values such as Bartlett's sphericity with Chi-square approximation (35573, 691) with gl. 210 and value of Sig. .000, in the Kaiser-Meyer-Olkin test (0.975) and with the goodness of fit test with Chi-square 5922,091 with gl 189 and value of Sig. .000. Concluding that they should continue with permanent training to update themselves and be prepared for any future event of any kind.

Keywords—digital competence, ICT, virtual education, learning, university teachers

1 Introduction

The decrease in literacy is given thanks to the implementation of intercultural education and the use of radio in rural areas where they are being trained to emancipate Chilean culture through radiophony [1]. The transformations and/or adaptations of the media are part of the digitalization due to the educational demands and needs where the concepts of media competence are being redefined to be part of the personal, cultural, social and civic competencies [2] that are occurring due to the digital competencies and achievements reached by teachers at the secondary level, digital competencies were

measured (filtered navigation and information search) and whose results reached the expected level in practicing teachers [3] and go hand in hand with learning environments that transcend the so-called technology-pedagogy gap in educational institutions, thus offering a design and analysis of new didactics [4] despite the existence of Covid-19 phobia, which was experienced not only by the academic community but also by the community-family [5].

Teaching has been identified as a digital potential in which teachers with digital skills and competencies (pedagogical means, educational approaches, learning and evaluation proposals) are needed [6] and companies are also being influenced digitally despite being a great challenge but necessary to achieve a digitized and technological development in human transformation [7] because the working world needs communicative, collaborative and other skills that manage to boost work engagement through the motivational process [8]. This is how the technological capabilities and digital leadership role are assumed by the representative of the institution with the sole purpose of achieving the use of technology and digital transformation, supporting the progress and professional culture as well as improving digital competencies [9], these digital competencies in teachers are key to moderate and design the learning of students after being evaluated in digital competencies and theoretical knowledge [10], this training and digital competence are not only skills but also the future of many teachers who will be prepared to face similar or other situations, so Sweden prepares a digital citizenship after teaching students about digital competencies [11] and thanks to the 21st century literacy whose theories and practices are given in modern education by the high demand for digital specialists in higher education [12].

When working with primary and secondary level teachers in the area of history, their teaching was valued with higher scores because they used more active resources in their teaching methodologies (artistic productions, heritages and museums); but there are also those that were valued with lower scores in these times of digitalization (video games, books with text and mobile devices or tablets with historical content), concluding that educational historical heritages are the best perception in traditional teaching [13]; also the education most affected by technology was higher education, but whose development in their approaches were successfully developing teaching-learning with low level results in digital competencies in their teachers as in pedagogical and technological areas [14], so the rise of ICT and educational applications should have a progressive development in university teachers, since they are at an intermediate level within digital competencies, with the difference of the group of young teachers (millennials) whose digital level is advanced. This adaptation is the effect of the rapid response of universities and their adoption of ICT with educational policies to promote digital competence in university teachers [15], these ICT and digital competencies have an important role for the 2030 agenda in Spain, since its fulfillment will depend on society in its "digital" culture, sustainability and responsibility for the future is in the training of those students at the initial and primary level [16].

The need to continue with virtual education and learning because of Covid-19 and an uncertain future of hybrid education post Covid-19 will result in many teachers having the right level of digital competencies and soft skills because of the influence on their progress in different countries (Peru, Panama, El Salvador, Argentina, Ecuador,

Paraguay, Bolivia and Honduras) despite having a low level of digital competence in each country [17], one of the digital effects were the portfolios that supported the development of learning and evaluation of the educational community, whose results show the appropriate use of OneDrive [18], as well as the use of technological equipment for the development of teaching-learning in university students that had a great importance in these times of Covid-19 [19], accompanied by the use of learning management systems whose exponential growth was at the university level worldwide, as they offer many varieties of spaces and virtual environments for collaborative work, being cell phones the most used to access these platforms [20], even professional practices were affected until the implementation of the learning management system, where very important aspects such as collaborative work, reflection and communication were developed [21].

When mentioning digital competencies there is a clear significant influence on teaching-learning that was in charge of ICT with which modeling and factorial analysis were performed to understand the use of digital learning such as self-efficacy, anxiety, satisfaction and digital acceptance in students [22], with the arrival of Covid-19 the formation of digital competence was a challenge for teachers as they had to face the current situation in their daily work, achieving a low level in creation, management and problem solving, these results were seen more in older teachers due to the lack of digital training and empathy of the trainers [23] and not only that, but also because of the digital demands that must pass by the arrival of the XXI century, it was necessary to measure the digital competence whose result showed an intermediate level for both sexes; only teachers under 40 years old had a higher level (careers such as Architecture, Social Sciences and Judiciary) [24]. Thus, the use of devices such as cell phones, laptops and others increased their sales in just two years, being these a primary need at home to have a virtual education in the development of teaching-learning, the use of these devices significantly affected the academic performance of students as they have access to quality information and in abundance [25], forcing the teacher to do more research on the subject to be treated in the classroom [19]. Questionnaires on digital competencies were developed, designed, implemented and validated in different areas that had ICT as the first ally and showed difficulty in digital competencies [26] even mapping the educational institutions, the same results were obtained as in the higher level [27].

The acceleration of digitalization in society was thanks to the presence of Covid-19 and will continue its growth process, but little is known about what will be the digitalization post Covid-19, but the only certainty is that the presence of digitalization complemented the dimensions of life, so the new generations have to have digital sustainability as teachers had new challenges and practices in the teaching-learning process [28], the characteristics of the classes arise from the excess consumption of applications on the internet, these were measured and analyzed with Latent Class Analysis, resulting in an independence of both sex and age that allowed having a digital competency base [29], the teacher's influence to use virtual portfolios provoked emotions in students and these were in a positive way, even more so for young people as they felt comfortable with the use of these technologies and that the use of the digital portfolio motivates and stimulates learning [30], although the presence of Covid-19 impacted teachers in their

way of teaching-learning, the pedagogy has been maintained in all its essence, promoting motivation, attitude and positive collaboration, achieving knowledge, digital skills and a lot of attitude towards the virtual environment [31].

The effect of digital competencies during these two years has revolutionized society, especially education at all levels, achieving the adaptation of teachers to the process of having digital competencies, but there is still that deficiency of ICT by teachers to some applications, resulting in a low level of digital competence in teachers, to resort to continuous training in digital skills and to provide a sustainable and quality education with their students [32], these digital skills led to measure the preferences and domains in students and teachers resulting that ICT are very beneficial for students [33], because the quality of teaching is on the right track thanks to open access applications [34] and ICT that are enabling teachers to provide education with the highest quality. The graduates of this year have a higher adequate level compared to others to face the working world with digital competencies [35], it is so due to the presence of Covid-19 have radical changes also revealing a humanitarian crisis in modern history, whose approach to leadership, management and administration were developed significantly [36].

One of the fundamental uses in digital competence for students and teachers is to develop and design literacy instruments for education with psychometric characteristics to assess digital competencies [37], since the emerging methodologies cover all sciences and engineering in a more holistic and more attractive way but with little interest in scientists [38]. University experiences with ICT and especially with augmented reality had their advantages and disadvantages in the subjects taught and resulting that students can develop their cognitive skills and as a negative point was the lack of training and preparation of the university teacher [39]; the arrival of digital competence brought education 4.0 to innovate teaching-learning, the results show a close relationship [40] where one of the main modalities for online learning is the integration of artificial intelligence and internet [41] and even when there is simple or complex information they hesitate when making decisions, so active learning methodologies are required and can be complemented with presentations and recordings, to have results that manage to favor digital competence in the professionals of the future [42].

One of the challenges is the social, health, economic effect and education itself in the midst of the Covid-19 pandemic, as it will mark new scientific research with the use of ICT, digital sustainability and the formation of digital competence [43], where the level of satisfaction will be given when learning is mixed and technological devices are implemented to teachers to optimize and redesign learning, the Flipped Classroom model is effective for this type of education [44]; the results experienced in society by ICT developed new skills in educational environments demonstrating psychometric knowledge [45], by the growth of technological progress especially in the classroom as it changed the way to perform, acquire and transmit new knowledge with the use of virtual environment tools [46] despite having obstacles of digital management and / or simulation tools, not the fault of teachers, but by the lack of technological equipment, there is still a lack of knowledge of these tools and a negative attitude to incorporate them into the curriculum, since the Internet is sufficient for their daily activities [47].

2 Justification and objectives of the study

The presence of Covid-19 alerted about the deficiency in digital competencies in teachers, students and part of society, this arrival of the pandemic from one day to another changed the way of seeing life and even more the way of seeing technology and its advances in the world. The levels of competence were seen coming with the new generation, but step by step, but with the arrival of Covid-19 had to take a big leap, digital competencies had to teach us that we must always be hand in hand with ICT to be digitally prepared. In European countries, the effectiveness of digital competencies in medical students was analyzed, managing to overcome the level of digital competitiveness with more than 65% (teaching with virtual reality) [48].

This research was developed after formulating the following general objective of knowing the level of digital competence in teachers after having experienced two years with virtual environments. And we set the following specific objectives:

- To analyze descriptively the sociodemographic characteristics.
- To analyze the level of digital competence of teachers from the student's point of view.

3 Methodology

3.1 Research design

In this research the design used is descriptive, transverse, correlational and predictive, the research conducted is of quantitative approach [49].

3.2 Sample

It was conducted through a survey obtaining a total of 1045 responses from university students from different regions of the country of male sex with 47.2%, female sex 51.6% and 1.2% of the respondents decided not to answer about their sexuality; the students surveyed belong to national universities 56.5% and private universities 43.5%; the survey was conducted randomly and online using the Google form during the month of November, always respecting the anonymity and privacy of the respondents.

3.3 Instrument

For this research, the questionnaire validated by experts [50] was used and in its Peruvian version Cronbach's Alpha 0.987 numerical value that guarantees the realization of this and future research using this questionnaire, which is composed of 21 questions, divided into 6 parts (professional training, pedagogical design, technological applications, teaching implementation, teaching evaluation and reflective development) these questions have the sole purpose of measuring the level of competence in Peruvian university teachers from the point of view of university students, with this instrument we will measure the number of teachers who comply with the knowledge and practice

digital competencies in their respective virtual classrooms. The survey also asked about the number of courses taken by the student to evaluate 1 course 1 teacher, where the university student can only take a minimum of one course and a maximum of seven courses in order not to exceed the 26 credits allowed in universities and with some exceptions up to 27 credits.

To analyze the data obtained in the survey, the exploratory factor with varimax rotation was used. Several tests were used to contrast the results such as Bartlett's sphericity with the Chi-square approximation (35573, 691) with gl. 210 and Sig. value .000, in the Kaiser-Meyer-Olkin test (0.975) and with the goodness of fit test with the Chi-square 5922,091 with gl 189 and Sig. value .000, this with the sole purpose of adapting the sample and achieving optimal, pertinent and coherent results in the tests.

3.4 Procedure and data analysis

This research began in September, where the main objective was to measure the level of digital competence, but evaluated by students, so we searched for measuring instruments and managed to find several of them and test them in different regions with a minimum number of 20 to 30 surveys to know the value of Cronbach's Alpha and choose the best result, to then choose the optimal measurement instrument for the article [50]; The questionnaire was formulated through the Google form to then proceed to survey university students from different regions of the country between students from private universities and state universities through a random and intentional link, where they were informed of the main objective of the survey. research and they were asked for their consent and authorization to carry it out and publish the results once processed and analyzed, always respecting the principles of ethics and good practices of all research, which were established, elaborated and agreed upon in the Declaration of Helsinki.

The university student will be able to evaluate the digital competences of the teachers who teach them through virtual classrooms, the points to be evaluated will be: professional training (3 questions); pedagogical design (3 questions); technological applications (5 questions); teaching implementation (4 questions); teacher evaluation (3 questions) and finally reflective development (3 questions). With these questions we will measure the level of digital competence of the teachers evaluated by their own students, where they will be qualified with the scales (average) of very bad [0-1.5[points, bad [1.5 - 3[, regular [3 - 4[, good [4 - 5.5[and very good [5.5 - 7] in the level of digital competence. This rubric will allow us to identify opportunities and challenges to address the advancement of professional development [51].

Once the survey was carried out, the information was downloaded to carry out the respective revisions and filters of some questions that were missing or the answers were not completed, once no error was found, the respective analyzes and calculations were carried out for later interpret them and issue important and relevant conclusions for the scientific community. Also respond to the objectives set in this research.

To carry out the respective analysis of the survey data, the SPSS version 25 program was used, where normality, assumed linearity, residual analysis, independence, homoscedasticity and non-collinearity were verified.

4 Results

Table 1 shows the results of Cronbach's Alpha for each element to be evaluated, resulting in optimal values for each element to continue with the research and to be a model for future research work

Table 1. Cronbach's alpha results

	Cronbach's alpha	Cronbach's alpha on standardized items	N° of items
Professional Training	,941	,942	3
Pedagogical Design	,946	,946	3
Technological Applications	,966	,966	5
Teaching Implementation	,970	,970	4
Teaching Evaluation	,957	,957	3
Reflective Development	,967	,967	3

Table 2 shows the correlations between the elements of professional development, pedagogical design, technological applications, teaching implementation, teaching evaluation and reflective development.

Table 2. Correlation between elements

	DR1	DR2	DR3	FP1	FP2	FP3	DP1	DP2	DP3	AT1	AT2	AT3	AT4	AT5	IE1	IE2	IE3	IE4	EE1	EE2	EE3	
DR1																						
DR2	,921																					
DR3	,894	,908																				
FP1	,703	,698	,696																			
FP2	,706	,705	,694	,925																		
FP3	,669	,665	,654	,799	,807																	
DP1	,765	,770	,742	,833	,824	,757																
DP2	,788	,780	,769	,836	,846	,769	,920															
DP3	,719	,719	,717	,734	,732	,833	,820	,823														
AT1	,773	,756	,759	,768	,770	,733	,829	,836	,767													
AT2	,740	,743	,750	,735	,736	,714	,776	,798	,747	,842												
AT3	,790	,795	,773	,764	,773	,739	,835	,852	,788	,893	,861											
AT4	,786	,790	,789	,753	,764	,718	,824	,851	,775	,866	,859	,884										
AT5	,743	,751	,735	,701	,711	,693	,776	,780	,728	,826	,803	,832	,855									
IE1	,778	,788	,780	,758	,777	,688	,800	,823	,744	,791	,724	,801	,797	,748								
IE2	,801	,813	,818	,789	,795	,724	,814	,846	,766	,829	,791	,850	,847	,794	,887							
IE3	,806	,817	,816	,774	,785	,726	,835	,854	,776	,826	,801	,854	,850	,799	,878	,910						
IE4	,790	,811	,798	,761	,762	,728	,821	,842	,793	,806	,765	,834	,824	,782	,863	,901	,906					
EE1	,815	,821	,807	,680	,681	,672	,746	,761	,729	,733	,705	,749	,761	,722	,807	,795	,802	,807				
EE2	,851	,874	,852	,698	,702	,680	,775	,786	,734	,781	,743	,804	,791	,755	,808	,831	,842	,828	,904			
EE3	,841	,861	,842	,673	,671	,654	,730	,752	,705	,737	,713	,762	,775	,723	,775	,788	,784	,784	,866	,878		

Regarding the number of courses enrolled, the universities allow you to enroll up to 7 courses as long as you meet some requirements established by the internal regulations of each university and these are considered regular students and those students who have less than or equal to 3 courses are considered irregular students, in this group are students who are taking courses for the second or third time, as well as those who are taking single courses, that is to say that they only need one course to be considered a graduate of the professional career; Therefore, each student will be able to grade the same number of courses that he/she is enrolled in during the 2021-2 semester of studies.

Figure 1 shows the amount in percentages of the number of teachers that will be able to grade; that is to say that 2.3% of students who are enrolled in a single course will be able to grade 24 teachers and 41.1% of students who are enrolled in seven courses will be able to grade 430 teachers.

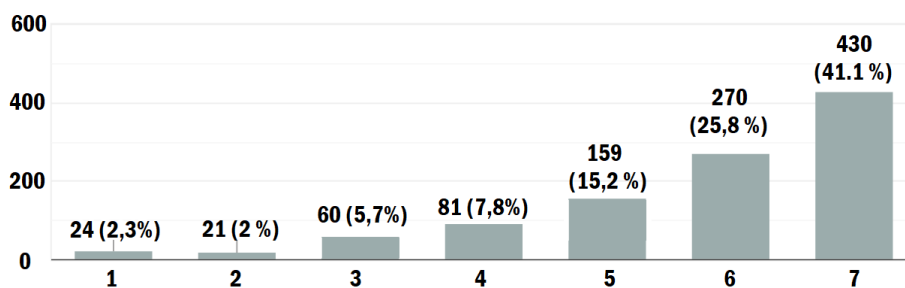


Fig. 1. Distribution of the number of courses enrolled

According to Figure 2, with respect to the level of competence of the teacher's professional training the students state that FP1 (mastery of basic knowledge of the subject, education and information technology) has a mean of 4.07 which means that only 4 teachers meet these conditions, a deviation of 2.021, skewness of 0.055 and a kurtosis of -1.278; FP2 (mastery of verbal and written skills) has a mean of 4.03 meaning that only 4 teachers meet these conditions, a deviation of 2.030, skewness of 0.030 and a kurtosis of -1.250 and FP3 (writing with pen, brush or mouse) has a mean of 3.59 meaning that only 4 teachers meet these conditions, a deviation of 2.114, skewness of 0.186 and a kurtosis of -1.120.

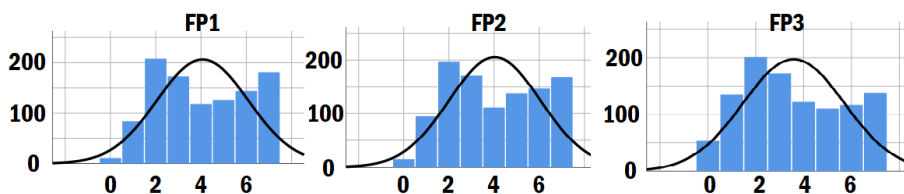


Fig. 2. Distribution of the level of professional training competency

According to Figure 3, regarding the teacher's pedagogical design competency level the students state that DP1 (scientifically design teaching contents and objectives) has a mean of 3.92 which means that 4 teachers meet these conditions, a deviation of 2.062, skewness of 0.036 and kurtosis of -1.226; DP2 (reasonably organize teaching resources

and methods for the teaching process) has a mean of 4.00 which means that 4 teachers meet these conditions, a deviation of 2.053, skewness of 0.005 and kurtosis of -1.275 and DP3 (guide and help students to design individualized learning plans) has a mean of 3.66 which means that 4 teachers meet these conditions, a deviation of 2.136, skewness of 0.076 and kurtosis of -1.195.

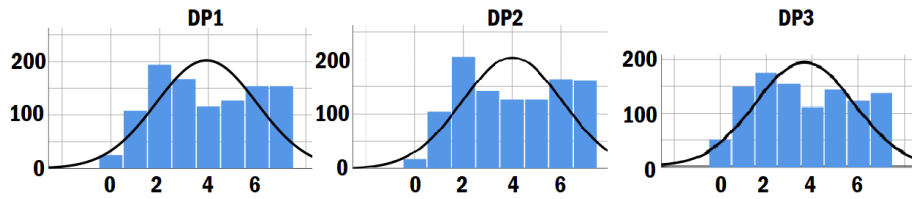


Fig. 3. Distribution of the level of competence in pedagogical design

According to Figure 4, with respect to the level of competence in teacher technology applications students state that AT1 (having access to high quality teaching resources from multiple sources) has a mean of 3.96 which means that 4 teachers meet these conditions, a deviation of 2.041, skewness of 0.037 and kurtosis of -1.261; AT2 (conduct multimedia courses and micro lessons) has a mean of 3.85 which means that 4 teachers meet these conditions, a deviation of 2.077, skewness of 0.013 and kurtosis of -1.187; AT3 (rationally use intelligent teaching tools) has a mean of 4.04 meaning that 4 teachers meet these conditions, a deviation of 2.062, skewness of -0.022 and kurtosis of -1.276; AT4 (integrate network and physical learning space) has a mean of 3.96 meaning that 4 teachers meet these conditions, a deviation of 2.111, skewness of -0.022 and kurtosis of -1.235 and AT5 (develop digital textbooks and online courses) has a mean of 3.75 meaning that 4 teachers meet these conditions, a deviation of 2.160, skewness of -0.055 and kurtosis of -1.224.

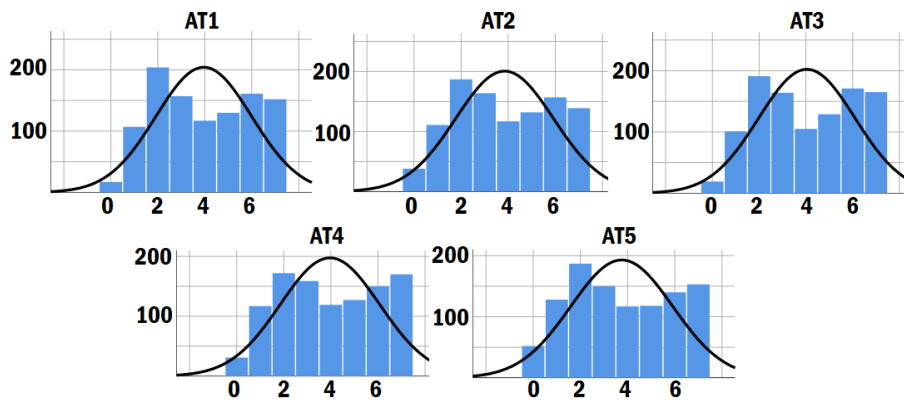


Fig. 4. Distribution of the level of competence in technology applications

According to Figure 5, regarding the competence level of teacher's teaching implementation the students state that IE1 (Establish a good teacher-student relationship) has a mean of 4.02 which means that 4 teachers meet these conditions, has a deviation of

2.0451, skewness of $-.025$ and kurtosis of -1.250 ; IE2 (Create a digital teaching situation) has a mean of 4.08 which means that 4 teachers meet these conditions, a deviation of 2.063 , skewness of $-.041$ and kurtosis of -1.295 ; IE3 (Use heuristic and inquiry-based teaching methods with flexibility) has a mean of 4.01 meaning that 4 teachers meet these conditions, a skewness of 2.077 , skewness of -0.077 and kurtosis of -1.217 ; IE4 (Respond appropriately to emergencies) has a mean of 4.06 meaning that 4 teachers meet these conditions, a deviation of 2.086 , skewness of -0.057 and kurtosis of -1.259 .

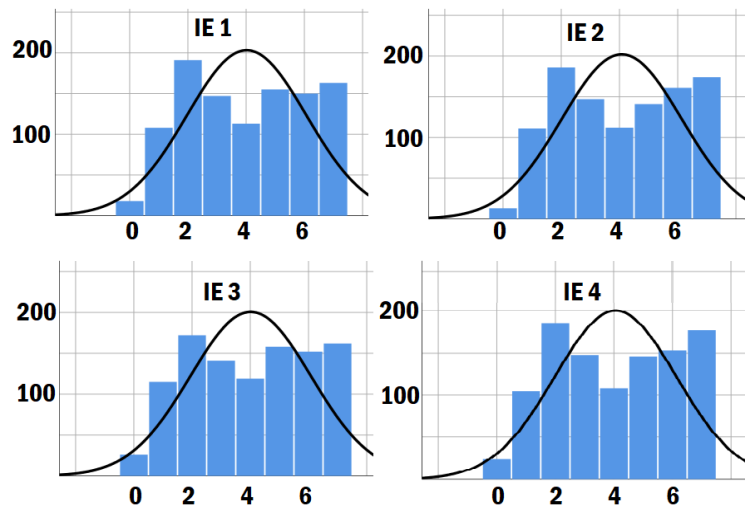


Fig. 5. Distribution of the level of competence in the level of teaching implementation

According to Figure 6, regarding the level of competence in teaching evaluation of the teacher towards students, where EE1 (Observe students' daily performance) has a mean of 3.91 which means that 4 teachers meet these conditions, has a deviation of 2.133 , skewness of $-.034$ and kurtosis of -1.216 ; EE2 (Use information tools to evaluate students' development from multiple perspectives, and actively communicate with students to obtain feedback) has a mean of 4.08 meaning that 4 teachers meet these conditions, a deviation of 2.083 , skewness of $-.087$ and kurtosis of -1.220 and EE3 (Guide students to actively perform self-assessment) has a mean of 4.03 meaning that 4 teachers meet these conditions, a deviation of 2.137 , skewness of -0.086 and kurtosis of -1.234 .

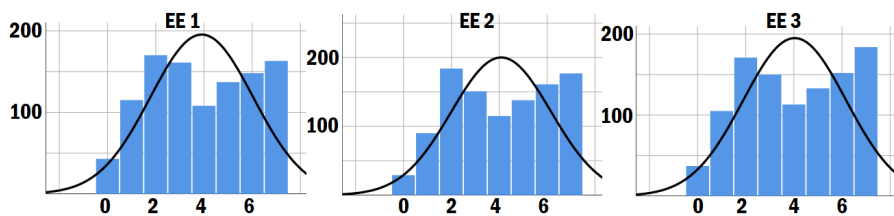


Fig. 6. Distribution of competence level in teaching evaluation

According to Figure 7, regarding the competency level of reflective development of the teacher towards students, where DR 1 (Actively collect relevant information for teaching and improve teaching work) has a mean of 4.07 which means that 4 teachers meet these conditions, has a deviation of 2.071, skewness of -.049 and kurtosis of -1.264; DR 2 (Explore and reflect on practical problems and needs in teaching) has a mean of 4.10 meaning that 4 teachers meet these conditions, a deviation of 2.054, skewness of -.116 and kurtosis of -1.205 and DR 3 (Make a teaching development plan and constantly improve professional quality) has a mean of 4.18 meaning that 4 teachers meet these conditions, a deviation of 2.103, skewness of -0.179 and kurtosis of -1.221.

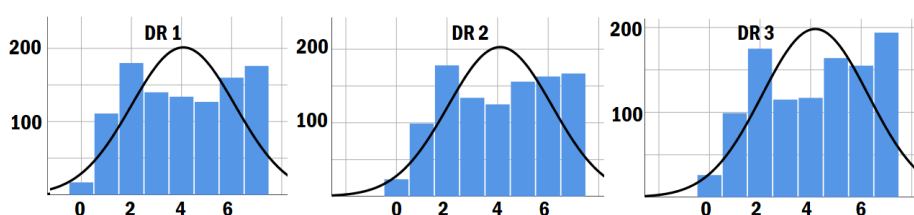


Fig. 7. Distribution of teaching evaluation competence levels

5 Discussions

Students positively rated this competency as they did with teachers and peers [21]. Therefore, the competence of professional training is based on the mastery of the basic knowledge of the subject, education and information technology where the teacher has to be a specialist and not try a course, which is why teaching has to be done by specialists in their field, have a good education and know about ICT for their perfect development.

The new ways of teaching are taking place with the emergence of countless methods, such as STEAM whose line is not yet consolidated [38], because the competence of pedagogical design is being studied and discovering new approaches to be able to organize reasonably using resources and teaching methods for the teaching process. Teachers and students changed their point of view because of the new learning and teaching competencies that have been developed to overcome the digital divide [28].

The usefulness and ease with which the use of ICT is being developed satisfies students [22], even more so in the competencies of technology applications because in these two years of experience more satisfaction was achieved in younger teachers and a lower rejection in older teachers [23], who with patience and exclusivity manage to master ICT and begin to rationally use intelligent teaching tools to perform in the best way in their classrooms. With digital competencies, it will be possible to develop entrepreneurial competencies in a dynamic way with the sole purpose of reaching the next level, which is the digital transformation and thus lead to the transformation of an entire organization [7].

The level of achievement in digital competencies of teachers are still in process [2], this due to the implementation forced by the presence of Covid-19 at all educational levels, digital teaching has been taking place since 2019 which is little for some and a

lot for others, claiming to resume face-to-face classes, because there you can observe the essence of the student despite the virtual context motivates and stimulates students to continue with virtual classes [30].

The actions in the formative lines are adapted according to the field of knowledge [24] and even more in the teaching evaluation competencies because teachers have to find ways to evaluate using the tools that are available on the network, by using these information tools for their respective evaluation of the course or subject students achieve multiple perspectives and can actively communicate with the same students and provide feedback. In this way, students also develop their cognitive skills [40].

Despite not accepting online education at first, it is now being successfully implemented through a teaching development plan for students, which leads to constantly improve the quality of teachers with the ongoing training they are receiving. All this with the sole purpose of improving the level of competence in the reflective development that is done with each student and achieve a quality of teaching in university students. Therefore, it is suggested to continue with the permanent training in digital competencies to obtain a sustainable education [32].

6 Results

Universities at the national level are training professionals with professional training competence where basic knowledge of the subject predominates, both in the theoretical and practical part, as well as training in ICT in order to at least be prepared and not wait for some eventuality to arrive as it did now with the presence of Coovid-19 and have to ask ourselves, "Where are the ICT? Achieving only a regular level in this competence, which means that out of an average of 7 teachers, only 4 are able to have a good training.

The permanent training of teachers on the use of ICT has effects in the classrooms when using teaching tools in each of their subjects and according to their specialties they manage to find adequate tools to share with their students and choosing the use of those tools that are mostly free to access and use. Teachers who reject ICT were trained individually to manage and have access to ICT.

The digital competencies were given gradually to ensure that teachers can cope with online education, but despite these permanent trainings, only a regular response was obtained from them, while the trainings for students were a total success and they are the ones who are satisfied with online education despite having many problems of access to the Internet for various reasons. There is a smaller number of students requesting to return to classes in person.

The pedagogical designs are part of the teaching-learning that are changing day by day thanks to the advance of new technologies and are presented in a timely manner to achieve learning in students, these pedagogical designs are being taught in different training centers to train them and are achieving positive effects on students and teachers.

The teaching evaluation competencies were adapted according to the progress and according to the demands that the students themselves requested, all with the sole purpose of developing their own skills and being able to express them at the time of developing in each of their subjects, this was easy for them because of the unlimited access

to information that they have in social and academic networks, the feedback they received was used to improve their knowledge and raise their academic performance in the classroom.

In conclusion, the level of digital competence evaluated to the teachers from the point of view of the university students obtained a mean of 4.10, which means that the level of competence of the teachers is good according to the scale foreseen for this research since it is in the interval [4 - 5.5].

7 References

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8 Authors

Yersi Luis Huamán Romaní, Member of the College of Mathematicians of Peru, Professor appointed in the category of Associate at the National University of Frontera - Sullana since 2019. Professor appointed in the category of Adjunct at the National University José María Arguedas Anda. Universidad Nacional José María Arguedas Andahuaylas (2013 - 2019). Bachelor's degree in Physical Mathematical Sciences, mention in Mathematics, from the National University of San Cristobal de Huamanga. Master's Degree in University Teaching and Educational Management. Completed studies in the Master's Degree in Mathematics Education at the National University Educación Enrique Guzmán y Valle. Student of the Doctorate in Education. Professor of Mathematics since 2011 in several National Universities. Editor of books at national and international level. Researcher in the area of ICT, Teaching, Learning, etc. International, national and regional speaker. Researcher and editor of books in the area of mathematics (With ORCID code: <https://orcid.org/0000-0001-7209-7727>, email: ylhromani@gmail.com, institutional email: yhuaman@unf.edu.pe).

Freddy Carrasco Choque, Economist Engineer from the Universidad Nacional del Altiplano Puno and Master in Economics, Environment and Natural Resources, University Los Andes, Bogotá - Colombia. Member of the College of Engineers of Peru - CIP. Ordinary professor with associate status at the National University Frontera (ORCID code: <https://orcid.org/0000-0002-4493-5567>, personal email: fredcarrasco@gmail.com, institutional email: fcarrasco@unf.edu.pe).

Edwing Alcides Maquera Flores, Member of the College of Engineers of Peru, is a professor of the Professional School of Systems Engineering of the National University José María Arguedas in the category of Assistant since 2013, graduated from the Master of Science with mention in Computer Science - UNSAAC, Master in Auditoría and Public Management - UCT. University professor since 2011 in different universities in Peru, researcher and editor of books in the area of computer science (With ORCID code: <https://orcid.org/0000-0003-1441-4207>, email: edwingmaquera@gmail.com, institutional email: edwing-maquera@unajma.edu.pe, Professor at National University José María Arguedas – Andahuaylas).

Juan Carlos Lázaro Guillermo, Diploma in Online Didactic Training for University Teachers from the International University of La Rioja. Degree in Computer Science from the National University Mayor de San Marcos. Master's Degree in Education with mention in Teaching and Educational Management from University César Vallejo. Currently a graduate of the Doctorate in Environment and Sustainable Development from the National University Hermilio Valdizan. University professor with more than 19 years of professional and research experience in Science and Engineering. He is currently National Director of the College of Mathematicians of Peru. His lines of research are: Python for Data Science, Big Data, Data Analytics, BPM, DBA, bioinspired algorithms, Bioinformatics, Six Sigma Methodology, Cloud Computing, Digital Transformation, R Studio, LMS, Online tools (With ORCID code: <https://orcid.org/0000-0002-4785-9344>, email: jclsoftsystem@gmail.com, institutional email: juan_lazaro@unu.edu.pe, Professor at Universidad Nacional Intercultural de la Amazonia).

Federico Kuaquira Huallpa, Bachelor and Professional in Mathematics from the National University de San Antonio Abad del Cusco, Master in Educational Sciences, mention in Educational Management at the National University Enrique Guzmán y Valle - La Cantuta. Research interest in Differential Equations and Integral Equations. He is currently a professor of Higher Education in the area of Mathematics. Professor: National University Amazónica de Madre de Dios (<https://orcid.org/0000-0001-7448-136X>, institutional email: fkua-quira@unamad.edu.pe, personal email: frekuama@hotmail.com).

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