I Learn At Home Strategy And Academic Performance

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Abstract

The objective is recognized in: Contrast the relationship that exists between the strategy I learn at home and academic performance in the area of mathematics in the educational institution 10011 José Leonardo Ortiz, the research is basic, descriptive-correlational non-experimental design. The results are as follows: 63% of the students present a low level, 17% a medium level and 20% a high level; the Rho = 0.600; for a moderately significant association.

In problem solving, 50% of the students present a low level, 41% a medium level and 9% a high level; resolution of problems of regularity, equivalence and change 63% are at a low level, 17% medium level and 20% high level; resolution of movement and location problems, 50% low level, 39% medium level and 11% high level; resolution of data management problems and uncertainty 60% is at a low level, 20% medium level and 20% high level.

Classification JEL: D23, E24

Keywords: Correlation, dimensions, strategy, academic performance.

Introduction

According to UNESCO cited by (Fernández 2018) in its study on the impact of learning opportunities on educational institutions in Latin America. Therefore, they presented the following results, once the socioeconomic variables and their academic record were deducted, elements associated with climate, classroom activities, and the professional development of the teacher, as OTL variables, show the margins of improvement and importance in the development of the institutions.

Likewise, the (UNESCO 2017) cited by (Aliaga 2022) recognizes that the individualized attention offered by teachers within the development of the teaching-learning process is insufficient, so it is suggested to apply the MIGAP (Intelligent Model of Personalized Learning Management) in several areas of knowledge to improve the quality of service care. In this sense, PE in individualized education helps the student to develop autonomously and manage their own learning to achieve the established goals.

In Peru, (MINEDU 2018) cited by (Valerio 2021) points out that, according to the tests schematized and applied by the WBU, it emphasizes that in the Census Evaluation of students (ECE, 2018). The following results were obtained: 33.7% of the students are at the beginning, 36.4% at the beginning, 15.9% in process and 14.1% in satisfactory. Although there is an improvement compared to the results of the tests of previous years, from the analysis of this academic situation some educational institutions behave like academies and, salaried teachers who participate in these tests, expect to obtain the bonus offered by the good results.

Finally, at the local level, when analyzing the results of the census test of students in 2016, in the department Lambayeque it was evidenced that only 43.1% of students managed to understand what they read, placing the region in fifteenth place nationally for 2014, while 22.7% managed to solve the problematic situations by placing in twentieth place; On the contrary, for 2015 these scores were 46.6% and 21.9% with positive variations in the first case, and the results continue to be low compared to previous years; Therefore, it is concluded that the region ranked fifteenth in reading and in mathematics it was ranked twenty-first nationally. (Dávila & Namuche 2017).

So for this research the objective is aimed at contrasting the relationship between the strategy I learn at home and academic performance in the area of mathematics in the educational institution 10011 José Leonardo Ortiz.

The systematization leads to be able to affirm that for the development of the strategy I learn at home it is essential that teachers are prepared to develop within the strategy creative alternatives to achieve learning.

Development

It is known by specialists that the purpose of the teaching-learning process is to ensure that students appropriate knowledge in a meaningful way, that is, they can integrate them to apply them to their reality or to the consolidation of others.

In this same line of research, (Valenzuela & Portillo 2018) analyzed the relationship between emotional intelligence and academic performance of primary school students in Mexico City. It is observed that a significant link prevails between the variables, that is, an adequate manipulation of the socio-emotional aspect is influential for a good academic performance of the students.

On the other hand, (Lastre et al. 2018) explain the relationship between family support and academic performance in Colombian primary school students, which showed that the formation of households with nucleated families and insufficient socioeconomic and educational parameters; predominate in informal work and basic action in the curricular areas of social sciences, natural, mathematics and Spanish.

Likewise, Palomino (2018) explains the relationship of study habits and academic performance in a school in Paucarbamba, obtaining the value of r = 0.663, which allows us to affirm the existence of a significant slight association between the variables, also, with the dimension forms of study 0.612; task resolution 0.528; Exam Preparation 0.508 and Ways of Thinking 0.615. dimension forms of study 0.612; task resolution 0.528; Exam Preparation 0.508 and Ways of Thinking 0.615.

Likewise, Ruiz (2021) analyzed the link between study habits and academic performance of students in a school in Lima. Taking into account the methodology applied, the results observed are the following: There is significant association between the variables under study, according to the value r = 0.644 and p = 0.000, that is, the better the habits to study, the improvement of the academic performance of the students in a school will be.

On the other hand, (Herrera 2020), investigated the effects of the application of linear functions on academic performance in the Renán Elías Olivera educational institution of Chiclayo, using a descriptive study and a sample of 22 students, reached the following results: It is evident that most of the students reached levels of learning at the beginning and process, The

existence of insufficiencies in the academic performance of the students of this institution was demonstrated.

On the other hand, at the University of Huelva, research related to the academic performance and digital competence of students in the time of COVID-19 was developed, for which students who were studying undergraduate and master's degrees during the 2020/2021 academic year were selected, among the dimensions that were included are: Information management The students reported having a high level of ($\overline{x}$=3.20; sd=.56), in communication, the average rating obtained was high ($\overline{x}$=3.34; sd=.61); students with outstanding grades indicated having greater ability in communication management (range=323.01; H=14,500; p=.002; ER 2=.029). Regarding the management of technology, it should be noted that the contrast analyses did not show statistically significant differences in favor of any of the groups studied and organization the students obtained the highest average general scores ($\overline{x}$=3.35; sd=.65). (García Prieto, López Aguilar, Delgado García, 2022).

In the same way, at the University of Chile, an investigation was developed where 603 university students belonging to the Pedagogy in Physical Education career participated, these students participated in virtual classes and practices in the 2020 academic year. When evaluating the academic performance they presented, it was evidenced that the annual average was 5.8 ± 0.6, female students had better academic performance with 0.3 tenths above the average of men ($p < .001$). At the end of the year, 98% of university students obtained satisfactory academic approval. (Bustamente, Russell, Godoy, Merellano and Uribe, 2022)

In this same line (Otifi, Hassan & Andarawi, 2023), he developed a study in which he included all students of 5th and 6th. ° level of Bachelor of Medicine and Bachelor of Surgery (MBBS) (N 1/4103) enrolled in the General and Systemic Pathology course during the semester from January to May 2020, the scores obtained by the students are in that 28% of respondents stated that technological problems They are a great challenge, because the shift towards virtual learning was abrupt, many students did not use computers and devices to obtain resources, lacked interest or, on the contrary, did not have time to update technologically. Although most students scored high on online exams, the percentage of students who were satisfied with the transition to e-learning did not exceed half, as some students believed their e-learning experience had not been beneficial.

Precisely in this same topic (Garlisi-Torales, Gonzalez, Herman-Kaspari, Aveiro-Róbalo, & Valladares-Garrido, 2022), through an observational, descriptive study with an analytical, cross-sectional component, they investigated the learning at the Universidad del Pacífico, Asunción, Paraguay of the medical students of the fourth and fifth year of the years 2019 and 2020, in this research the virtualization of the classes was evaluated, with

the use of the simulation center, use of educational platforms and evaluation modality. In the fourth year the 3 (100%) subjects assessed virtualised their classes, 2 (67%) used the simulation centre and 1 (33%) used Moodle or another virtual platform for academic use. For evaluation, 2 (67%) opted for a mixed strategy. In the fifth year the 4 (100%) subjects evaluated were virtual their classes, 3 (75%) used the simulation center and none used Moodle or another virtual platform for academic use. Regarding evaluation, 2 (50%) opted for a virtual strategy.

In this line of thought, (García, Miranda & Romero, 2022), he conducted his research with university students from a public school (Interdisciplinary Professional Unit of Engineering and Social and Administrative Sciences) of the National Polytechnic Institute, in this study it was found that academic performance increased by 0.591, which helps students have independence according to Torres Martín (2016); as for the use of the computer instead of the phone or tablet there is an increase in the average of grades of 0.148, since it is a widely used medium; the academic work on the development of case studies causes an increase in their performance of 0.360; As for the explanation of the topics by the teacher there is an increase of 0.221 in his general average of grades, Teamwork resulted in a negative impact, as this causes academic performance to decrease by -0.067, this leads to new lines of research because the study sample has engineering students who are little social and also do not know the students, Well, they all take classes in different groups.

At La Sabana University (Vera-Monroy & Monsalve-Silva, 2022), they developed a non-experimental study to evaluate the effect of the change in the learning environment due to COVID-19 and its influence on the academic performance of students, where it was evidenced that the remote environment conditions the methodology and requires an adaptation period that depends on the mental context of all participants in the educational act. It is important to note that the educational institution was prepared to develop academic processes mediated through technologies with the development of the Virtual Savannah platform and the acquisition of MS Teams; Likewise, the university already had experience in the virtual environment with the academic units of the Forum Institute and the Technological Center of the Academy.

To measure digital competences based on student learning in virtual teaching and academic performance (Romero, Lapa, Sánchez & Arancibia, 2022). They developed an investigation where 52 students of the specialty of "Computer Operation" of the Center of technical-productive education "Tarma" participated. The results show that 46% have a good or higher level of digital skills. While, for the variable academic performance, it was found that 44% of students have good academic performance or higher. It can be

affirmed that there is a statistically significant positive relationship of considerable degree between the variables.

Following the deepening on the association between depression, stress and / or suicidal ideation and academic performance in medical students of a university in Peru during the COVID -19 pandemic (Baquerizo-Quispe, Miguel-Ponce, Castarieda-Marinovich, Romero-Mejia & Aquino-Canchari, 2022), the observed academic performance is related to low performance and was more frequent in women than in men (16.87% vs. 8.26%), a prevalence of depression of 33.6% was found, the level of suicidal ideation was found to be a serious and severe risk, A presence of excessive stress was evidenced that was more frequent in young people aged 18 to 21 years. Only the presence of depression was significantly associated with academic performance, even though its prevalence was much lower than stress or suicidal ideation.

To investigate academic performance and the use of the virtual campus (De la Iglesia Villasol, 2021) they developed a quantitative study that was related to the fact that fourth-year students use the virtual campus more intensively and continuously, women are more active, both in the first and fourth year courses, According to the percentage of class attendance, in first the distribution is more erratic while in fourth there is a clear positive relationship between gap and percentage of attendance, with respect to temporality, accesses are majority in the last four weeks of the course, compared to the first four, with greater differentials in the first year and the use that students make of digital tools.

With the same concern, about virtual learning and student performance (Gonzales & Evaristo 2021), they demonstrated from the results obtained that the selected modality does not seem to be a determining factor when ensuring the academic performance of students, but rather the work of the instructor, especially as an accompanying tutor, as well as the strategies you use. In the case of dropout, although there were no significant differences, the analysis seems to indicate that non-pedagogical variables play a very important role in the permanence of students.

In Mexico (Monroy, Hernández & Jiménez 2018), he developed a quantitative and descriptive research, to see the development of a section of classes developed in the virtual classroom. The results obtained show that 90% of students do not use the Schoology, Modle and Edmodo virtual classrooms, although their effectiveness has been proven because teachers do not implement them. Regarding the academic average of students, it can be said that the use of virtual classrooms can be an opportunity to improve the academic performance of students, since this could increase if virtual classrooms are used.

Methodology

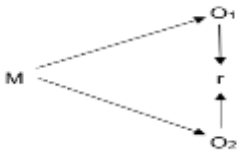
The study is based on a quantitative approach; Since a set of processes is represented, it is sequential and evidential, each stage precedes the next, obeys a rigorous order, part of an idea that is limited and once delimited, objectives and research questions are derived, the literature is reviewed and a framework or a theoretical perspective is built. (Sánchez, 2019, cited by Avellaneda et al. 2022)

The research is of basic type, it is characterized because it focuses specifically on describing phenomena, situations, contexts and events; that is, to detail how they are and manifest. It also seeks to specify the properties, characteristics and profiles of people, groups, communities, processes, objects or any other phenomenon that is subjected to analysis. That is, they only intend to measure or collect information independently or jointly on the concepts or variables to which they refer. (Murillo 2008 cited by Mendoza 2018)

The design is non-experimental directed, under the correlational descriptive cross-sectional design. (Tamayo 1994 cited by Hernández 2018)

Descriptive, correlational because in this research work, the dimensions of a phenomenon are accurately shown, indicating the type of school that will be included in the study, based on attributes of the phenomenon of interest. (Tamayo 1994 cited by Hernández 2018)

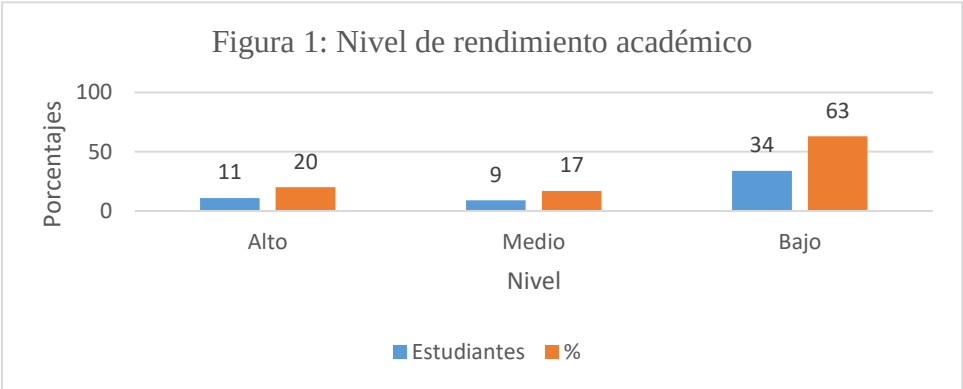
Figure 1: Non-experimental design scheme



Where:
M: Study sample
O1: Observation of the variable (Strategy I learn at home)
O2: Observation of the variable (Academic performance)
r: Correlation coefficient.

Presentation of results

Figure 1. Graphical representation of the level of academic performance

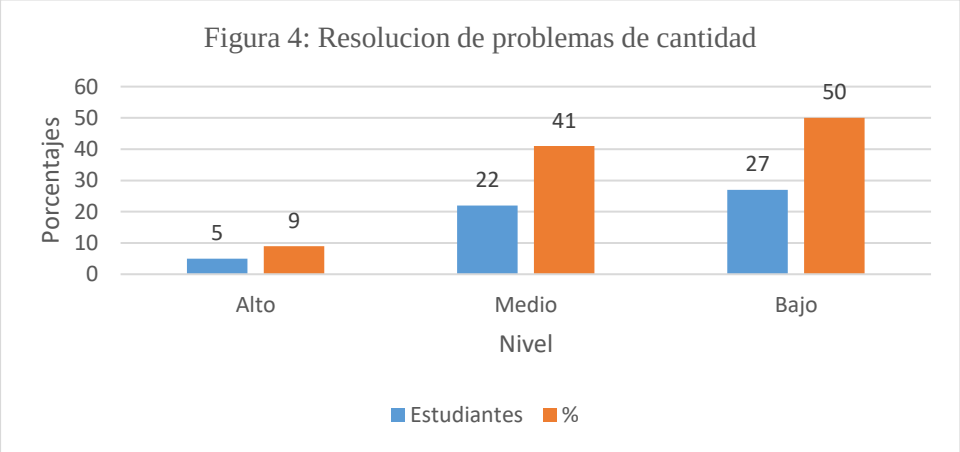


Source: Authors.

Interpretation:

Figure 1 shows that in the variable academic performance, 63% of students were placed at a low level, 17% at the middle level and 20% of students at a high level; evidencing that students show difficulties for learning in the strategy I learn at home.

Figure 2. Representation of the dimension Solving quantity problems

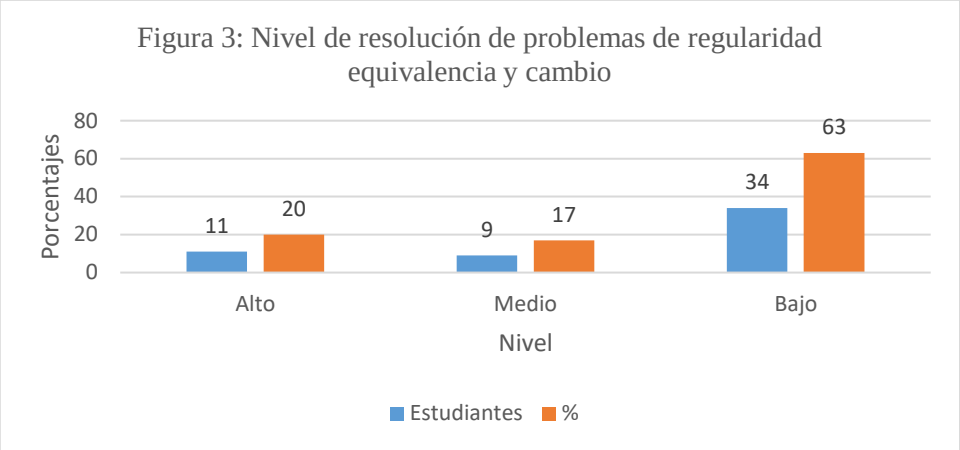


Source: Authors.

Interpretation:

Figure 2 shows that in the dimension problem solving of quantity, 50% of students were placed at low level, 41% at medium level and only 9% of students at high level; evidencing that students show difficulties for learning in the strategy I learn at home.

Figure 3. Representation of the dimension Level of resolution of regularity problems equivalence and change

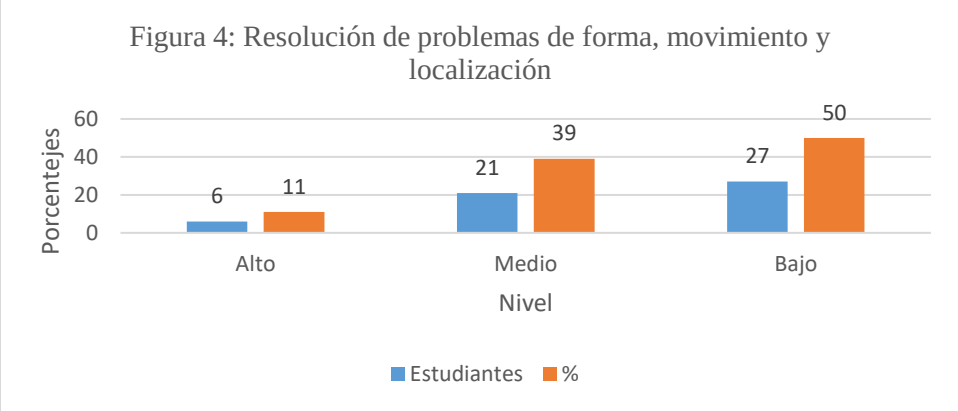


Source: Authors.

Interpretation:

Figure 3 shows that in the dimension problem solving of regularity, equivalence and change, 63% of students are located at a low level, 17% at the middle level and 20% of students at a high level; evidencing that students show difficulties for learning in the strategy I learn at home.

Figure 4. Representation of shape, movement and localization problem solving

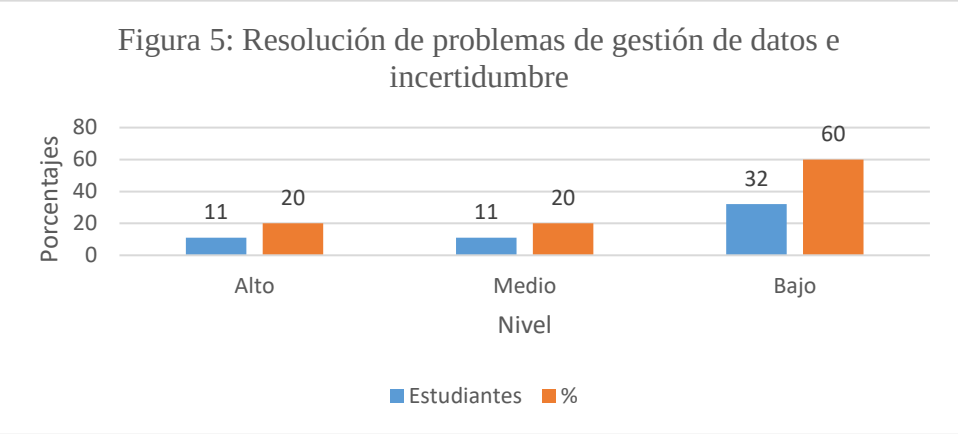


Source: Authors.

Interpretation:

Figure 4 shows that in the dimension problem solving of form, movement and location, 50% of students are located at low level, 39% at medium level and 11% of students at high level; evidencing that students show difficulties for learning in the strategy I learn at home.

Figure 5. Graphical representation of data management and uncertainty troubleshooting



Source: Authors.

Interpretation:

Figure 5 shows that in the dimension resolution of data management and uncertainty, 60% of students were located at low level, 20% at medium level and 20% of students at high level; evidencing that students show difficulties for learning in the strategy I learn at home.

Table 1. Correlation between the strategy I learn at home and academic performance

Correlaciones

			Estrategia aprendo en casa	Rendimiento académico
Rho de Spearman	Estrategia aprendo en casa	Coeficiente de correlación	1.000	,600**
		Sig. (bilateral)		0.000
		N	54	54
	Rendimiento académico	Coeficiente de correlación	,600**	1.000
		Sig. (bilateral)	0.000	
		N	54	54

**. La correlación es significativa en el nivel 0,01 (bilateral).

Table 1 shows that according to Sig. (0.000) < α (0.05), and Spearman's Rho coefficient is equal to 0.600; It allows us to affirm that Ho is rejected and H1 is accepted, that is, the strategy I learn at home has a significant moderate effect on academic performance in students of I.E. 10011 by José Leonardo Ortiz.

Table 2. Correlation between the strategy I learn at home and the resolution of quantity problems

Correlaciones

			Estrategia aprendo en casa	Resolución de problemas de cantidad
Rho de Spearman	Estrategia aprendo en casa	Coeficiente de correlación	1.000	,617**
		Sig. (bilateral)		0.000
		N	54	54
	Resolución de problemas de cantidad	Coeficiente de correlación	,617**	1.000
		Sig. (bilateral)	0.000	
		N	54	54

**. La correlación es significativa en el nivel 0,01 (bilateral).

Table 2 shows that according to Sig. (0.000) < α (0.05), and Spearman's Rho coefficient is equal to 0.617; It allows us to affirm that Ho is rejected and H1 is accepted, that is, the strategy I learn at home has a significant moderate effect on the resolution of quantity problems in the students of the I.E. 10011 of José Leonardo Ortiz.

Table 3. Correlation between the strategy I learn at home and the resolution of problems of regularity, equivalence and change.

Correlaciones

			Estrategia aprendo en casa	Resolución de problemas de regularidad, equivalencia y cambio.
Rho de Spearman	Estrategia aprendo en casa	Coeficiente de correlación	1.000	,478**
		Sig. (bilateral)		0.000
		N	54	54
	Resolución de problemas de regularidad, equivalencia y cambio.	Coeficiente de correlación	,478**	1.000
		Sig. (bilateral)	0.000	
		N	54	54

**. La correlación es significativa en el nivel 0,01 (bilateral).

Source: Authors.

Table 3 shows that according to Sig. (0.000) < α (0.05), and Spearman's Rho coefficient is equal to 0.478; It allows us to affirm that Ho is rejected and H1 is accepted, that is, the strategy I learn at home has a significant low effect on the resolution of problems of regularity, equivalence and change.

Table 4. Correlation between the strategy I learn at home and the resolution of problems of form, movement and location.

Correlaciones				
			Estrategia aprendo en casa	Resolución de problemas de forma, movimiento y localización.
Rho de Spearman	Estrategia aprendo en casa	Coeficiente de correlación	1.000	,617**
		Sig. (bilateral)		0.000
		N	54	54
	Resolución de problemas de forma, movimiento y localización.	Coeficiente de correlación	,617**	1.000
		Sig. (bilateral)	0.000	
		N	54	54

**. La correlación es significativa en el nivel 0,01 (bilateral).

Source: Authors.

Table 4 shows that according to Sig. (0.000) < α (0.05), and Spearman's Rho coefficient is equal to 0.617; It allows us to affirm that Ho is rejected and H1 is accepted, that is, the strategy I learn at home has a significant moderate effect on the resolution of problems of form, movement and location in the students of the I.E. 10011 of José Leonardo Ortiz.

Table 5. Correlation between strategy at home and solving data management problems and uncertainty

Correlaciones				
			Estrategia aprendo en casa	Resolución de problemas de gestión de datos e incertidumbre.
Rho de Spearman	Estrategia aprendo en casa	Coeficiente de correlación	1.000	,442**
		Sig. (bilateral)		0.001
		N	54	54
	Resolución de problemas de gestión de datos e incertidumbre.	Coeficiente de correlación	,442**	1.000
		Sig. (bilateral)	0.001	
		N	54	54

**. La correlación es significativa en el nivel 0,01 (bilateral).

Source: Authors.

Table 5 shows that according to Sig. (0.000) < α (0.05), and Spearman's Rho coefficient is equal to 0.442; It allows us to affirm that Ho is rejected and H1 is accepted, that is, the strategy I learn at home has a significant low effect on the resolution of data management problems and uncertainty

Discussion

In the present study it has been shown that synchronous teaching has moderately favored academic performance in its four dimensions of the area of mathematics in students of the educational institution 10011 of José Leonardo Ortiz. The one that is based on the theory of significant learning of Ausubel, who states that the learning carried out by the students must be inserted into their knowledge structure in an expressive way, consequently what the student is obtaining is related to the one he already knows or knows, that is, the new obtainments are linked to what he already knows, following a logic, with sense, and not in a tax way. (Peche, 2016). Likewise, it is based on Bruner's theory of learning by discovery, who indicates that the most important in the teaching of basic concepts is to provide support to students, to achieve progressive transition from concrete thinking to symbolic representations in a more appropriate way of thinking. Likewise, Piaget's theory of genetic learning points out that this theory is based on finding out about the ways of knowing the outside world, through the senses, admitting the points of view on how the development of intelligence evolves, which is the adequacy of students in their environment. (Peche, 2016). Similarly, Papert's constructivist theory states that an important change in the institution could be the objectives set by students, considering the innovative components that the computer can suppose, restructuring the learning conditions and taking into account other ways of learning. (Peche, 2016). In the same way, the sociocultural theory of Vygotsky, states that people have the ability to create new knowledge, by reflecting on their physical and mental performances. (Peche, 2016)

The general objective is to contrast the relationship between the strategy I learn at home and academic performance in the educational institution 10011 Francisco Bolognesi Cervantes.

The scores achieved in the variable academic performance, were located in the levels, low 63%, 17% intermediate level and 20% of students in high level; evidencing that students show difficulties for learning in the strategy I learn at home. and Spearman's Rho value is 0.600 stating that there is moderate correlation between the variables. Likewise, in the resolution of quantity problems at the low level, 50% of the students, 41% at the intermediate level and only 9% of them at the high level were located; evidencing that students show learning difficulties in the I learn at home strategy and Spearman's Rho value is 0.617 determining the existence of a moderate correlation between the variables, it is evident that students show learning difficulties in the I learn at home strategy. Coinciding with (Calla 2021) observing that their contributions are based on analyzing the link between study habits and academic performance of students in a school in Lima. Taking into account an applied methodology, and a sample of 32 students, the following results were observed: There is significant association between the variables under study, according to the value r = 0.644 and p = 0.000, that is, the better the habits to study, the improvement of the academic performance of the

students will be in a school in the district of Villa María del Triunfo-Lima. Likewise, with (Palomino 2018), whose contributions are based on explaining the existence of the relationship of study habits and academic performance in a school in Paucarbamba, from a basic research, he reached the following results: Obtaining the value of r = 0.663, which allows to affirm the existence of significant slight association between the variables, also, with the dimension forms of study 0.612; task resolution 0.528; Exam Preparation 0.508 and Ways of Thinking 0.615. dimension forms of study 0.612; task resolution 0.528; Exam Preparation 0.508 and Ways of Thinking 0.615. Likewise, with (Sánchez 2020), whose contributions are based on analyzing the relationship between teaching performance and academic performance of students of an educational institution in Lima. The following results were observed: There is no significant correlation between the variables, since the value found is 0.036. Likewise, in the dimensions the value of 0.139 was found in pedagogical capacities of the teacher; 0.094 motivation of teachers and 0.175 work responsibility. On the other hand, it is evident that teachers have a very good performance so that students achieve an adequate academic performance of their learning. Similarly, with (Quique 2019), whose contributions are based on explaining the relationship between learning styles and academic performance in a school in San Juan de Lurigancho. Obtaining the following results: The correlation between dynamic participation and performance experienced 0.69 and significance level of 5%; critical learning 0.68 to 5%; functional preparation 0.66 to 5%; and contemplative preparation 0.6 to 5%. However, the results obtained in the present investigation.

The study was conducted following non-experimental or ex post facto research to assess the effect of change in the learning environment due to COVID-19 on IQ students' academic performance. Two instruments were developed with a Likert-type scale constructed from completely disagree to completely agree; The first was for face-to-face evaluation, composed of 13 items, and the second was for distance learning, with 18 items. The remote environment conditions the methodology and requires a period of adaptation that depends on the mental context of all the participants in the educational act. It is important to note that the University of La Sabana had prepared to develop academic processes mediated through technologies with the development of the Sabana Virtual platform and the acquisition of MS Teams; Likewise, the university already had experience in the virtual virtual environment with the academic units of the Forum Institute and the Technological Center of the Academy.

Conclusions

1. The academic performance of the students in the area of mathematics showed that 63% were placed in low level, 17% in medium level and 20% in high level. Likewise, when contrasting the relationship between

the strategy I learn at home and academic performance in mathematics, it is appreciated that according to the p value Sig. = 0.000 < α = 0.05; allows to affirm that Ho is rejected and H1 is accepted; likewise, Rho = 0.600, that is, the strategy I learn at home has a moderate significant effect on the academic performance of students in the educational institution 10011.

2. The resolution of quantity problems showed that 50% of the students were located in low level, 41% medium level and 9% high level. Likewise, when determining the relationship between the strategy I learn at home and the dimension solving problems of quantity, it is appreciated that according to the p value Sig. = 0.000 < α = 0.05; allows to affirm that Ho is rejected and H1 is accepted, likewise, Rho = 0.617, that is, the strategy I learn at home has a significant moderate effect on the dimension solving problems of quantity in the students of the educational institution 10011.

3. The resolution of problems of regularity, equivalence and change showed that 63% of the students were located in low level, 17% in medium level and 20% high level. Likewise, when defining the relationship between the strategy I learn at home and the dimension solving problems of regularity, equivalence and change, it is appreciated that according to the p value Sig. = 0.000 < α = 0.05; allows to affirm that Ho is rejected and H1 is accepted; likewise, Rho = 0.478, that is, the strategy I learn at home has a significant low effect on the dimension problem solving of regularity, equivalence and change in the students of the educational institution 10011.

4. Solving problems of shape, movement and location showed that 50% of the students were located at a low level, 39% at a medium level and 11% at a high level. Likewise, when establishing the relationship between the learning strategy and the resolution of problems of form, movement and location, it is appreciated that according to the p value Sig. = 0.000 < α = 0.05; allows to affirm that Ho is rejected and H1 is accepted; likewise, Rho = 0.617, that is, the strategy I learn at home It has a significant moderate effect on students of educational institution 10011

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