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Visual perception in early childhood education

[Percepción visual en la primera infancia educativa]

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Resumen

El objetivo de la investigación fue comparar el nivel de la percepción visual en niños de cuatro años de las instituciones educativas Innova Schools de los distritos del Rímac y San Martín de Porres. La investigación fue sesgada con un enfoque cuantitativo de tipo básica y con un diseño no experimental transversal de nivel descriptivo comparativo. La la muestra fue de ochenta. La técnica fue la observación y la lista de cotejo sirvió como instrumento para recoger los datos a través de un inventario de percepción visual TEORE, el cual fue elaborado por los autores. El instrumento fue analizado y aceptado por tres expertos quienes validaron la aplicación; se obtuvo el valor de confiabilidad con la prueba KR20 de 0,882. El resultado fue de un 100 % de logro para el centro educativo Innova Schools del Rímac y de 97,5 % para el de San Martín de Porres. Se concluyó que no existen diferencias significativas en la variable percepción visual en los niños de cuatro años de las instituciones educativas Innova Schools distritos del Rímac y San Martín de Porres. Ante ello, se concluyó que los estudiantes del Innova Schools de la sede Rímac tienen un desarrollo de la percepción visual mejor que los alumnos del Innova Schools de San Martín; no obstante, éstos aún podrían reforzar dicha capacidad.

Palabras clave: Percepción visual, discriminación, forma, orientación.

Abstract

The objective of the research was to compare the level of visual perception in four-year-old children of the Innova Schools educational institutions in the districts of Rímac and San Martín de Porres. The research was biased with a quantitative approach of a basic type and with a non-experimental cross-sectional design of a comparative descriptive level. The sample was eighty. The technique was the observation and the checklist served as an instrument to collect the data through an inventory of visual perception TEORE, which was developed by the authors. The instrument was analyzed and accepted by three experts who validated the application; the reliability value was obtained with the KR20 test of 0.882. The result was a 100% achievement for the Innova Schools of Rimac and 97.5% for the San Martin de Porres. It was concluded that there are no significant differences in the variable visual perception in the four-year-old children of the educational institutions Innova Schools districts of Rímac and San Martín de Porres. Given this, it was concluded that the students of the Innova Schools of the Rímac campus have a better visual perception development than the students of the Innova Schools of San Martín; however, they could still strengthen this capacity.

Keywords: Visual perception, discrimination, form, orientation

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1. Introduction

Perception is considered one of the fundamental cognitive processes for the educational development of early childhood. This is characterized because it leads to the understanding and interpretation of reality. Bruner (1961), Guillar (2009) and Luria (1981) stated that perception is an active character since its initiation, since it is involved with the motor aspect, so the learning of literacy depends on the good development of skills perceptive Therefore, it is that the stimulation and the development of visual perception should be adequately given in children. The concern for educational progress occurs worldwide, because everyone does their best to analyze their situation to improve it. However, one of the countries that has had the best results is Finland, as its schools prioritize activities that include visual perception as part of their academic plan. An example of this is given at the Art School in Porvoo where samples of artistic education are carried out, which involves images of visual development elaborated by its students who are children and adolescents from 1 to 19 years of age.

Visual perception is considered the ability of non-motor visual analysis that helps to recognize, deepen, identify, discriminate and remember everything that the visual system perceives. The problems that are generated by the little or no development of visual perception affect in the first phases of the learning of the reading since this ability plays a fundamental role in the acquisition of the recognition of letters and words (Aribau, 2018).

Nowadays, it is easy to detect possible problems of visual perception in the children of the first cycles since that is where the correct process of the motor graph starts. For this reason, it is opportune to involve activities where the ability to discriminate figure-background, the perception of form, spatial relationships up to writing is generated; that is, establish strategies where perceptual processes are developed and stimulated.

Matalinares and Yarlequé (2000) in their research on visual perception in pre-school children from urban, urban-marginal and rural areas with children from two initial education campus in the districts of El Tambo and Huancayo, concluded that those from urban areas develop the four areas explored: manual vision coordination, figure and background discrimination, constancy of form and position in space; however, children from marginal urban areas do not differ from those from rural areas, in the first two and in the fourth. However, a superiority of the former has been observed in the constancy tests of the form. Thus they corroborated that the best conditions that children in urban areas have favor the development of their visual perception.

At present, there are several concepts aimed at perception on the other hand, Schoning (2010) maintained that "Perception is one of the most relevant psychological interpretations; it serves as a link between the human being and his environment, it is a cumbersome phenomenon that implies multiple factors "(p.87). Also, Delgado (2014) noted: "Perception is a development that allows us to receive stimuli through the senses and interpret what we receive. It is the process by which our brain selects the stimuli that it considers significant "(p.29).

It is known that, from the birth of the human being, the eye is able to perceive silhouettes through shadows giving meaning to an image in itself, so that later it can lead to the recognition of it, in this way the world takes shape and the Child learns gradually to perceive similarities, to identify and compare, to distinguish the figure in the surrounding background in space and time and to recognize the permanence and constancy of the object. For this reason, perception is understood as a substantial process in which mental action and psychological actions are involved with each

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other and different skills such as learning, memories, integration of the senses and reasoning are worked on as they go to depend on the good functioning of the perceptual process and for that reason the development of the same one must be stimulated.

A significant contribution for the present work was the Gestalt theory or theories of the forms that focused on studying, primarily, the perception, thus achieving an understanding of the attitudinal and behavioral actions of people. This can be done by showing images or representations of their environment, therefore it is how perception defines and restricts thought and essentially in the analysis of the degree of knowledge that has already been acquired

2. Materials and Methods

This research has a quantitative approach since it collects the information of the phenomenon that it examines and studies (Hernandez et. al, 2014). In the same way, it is defined as a basic type investigation because it is intended to increase the information of the variable; for this, it relies on the collection of data that compares the level of visual perception in four-year students of two institutions of the Innova Schools campus. On the other hand, the research is developed according to the comparative descriptive level, since it collects the information from two samples, in order to analyze the behavior of a variable that is the level of visual perception of the students of both particular institutions. Likewise, the transversal non-experimental method follows, since the variable is not intentionally manipulated, but the investigation is developed according to the observation of the phenomenon in its natural environment, that is how it develops at a specific moment.

The population consisted of 87 students; 40 students from the Innova Schools school in Rímac, and 47 students from the Innova Schools school in San Martín de Porres, both of them four years old. From this total, a non-probabilistic sample was applied, resulting in the number of 40 students from each campus of the Innova Schools Educational Institutions (Rímac and San Martín de Porres).

The data collection technique was carried out through the observation where the instrument of the comparison list was applied - the TEORE visual perception inventory - which served to evaluate the study variable and its dimensions. The test consists of 21 items which were divided into three dimensions, being the figure-ground discrimination, the perception of the shape and spatial orientation. This instrument was applied individually.

The validity of the instrument was given through the validation of content that is given through expert judgments. In this case, three judges validated the instrument. While the reliability was applied according to the statistical test KR20. Once the validity and reliability of the instrument were obtained, it was applied; then the data was collected and entered into the SPSS program where, at first, a descriptive statistic was applied, represented by tables, figures and frequencies with their respective percentages and bar graphs, which come from the variable and dimensions. In a second moment, an inferential statistic was used to determine which hypothesis test to use. Here the normality tests were applied where it was determined to use nonparametric tests, such as the Mann Whitney U test to test the research hypothesis.

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3. Results

Descriptive analyzes

Table 1 and Figure 1 show the results of the descriptive analysis regarding the level of visual perception among the Innova Schools educational institutions of the Rímac and San Martín de Porres campus. With regard to the level achieved, it is worth noting that at the Rímac campus, students reach 100% of the variable of visual perception, as opposed to 97.5% corresponding to the San Martín de Porres campus. Regarding the level not achieved, a predominance is observed at the San Martín de Porres site with 2.5%, in contrast to 0% corresponding to the campus of the Rímac.

Table 1. Percentage of the variable visual perception

	I.E. Innova Schools			
	Campus Rímac		Campus San Martin	
	Frequency	%	Frequency	%
No achieve	0	0%	1	2.5%
Achieve	40	100%	39	97.5%
Total	40	100.0%	40	100.0%

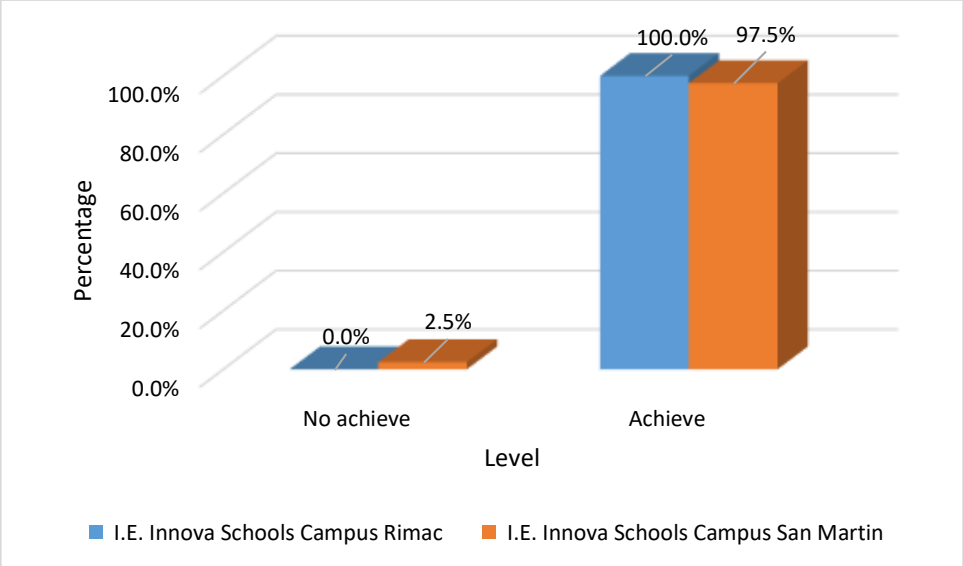

Figure 1 percentage of the variable visual perception

Descriptive analysis regarding the form perception dimension

In Table 2 and Figure 2, the descriptive analysis results regarding the form perception dimension between the educational institutions Innova Schools of the Rimac and San Martin de Porres campus are observed. With respect to the level achieved, the Rimac campus reaches 97.5%, unlike 95.5% corresponding to the San Martín de Porres campus. With respect to the level not achieved, a predominance is observed at the San Martín de Porres site with 5.0%, unlike a 2.5% corresponding to the campus of the Rimac.

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Table 2. Percentage of the variable form perception

	I.E. Innova Schools			
	Campus Rímac		Campus San Martin	
	Frequency	%	Frequency	%
No achieve	1	2.5%	2	5.0%
Achieve	39	97.5%	38	95.0%
Total	40	100.0%	40	100.0%

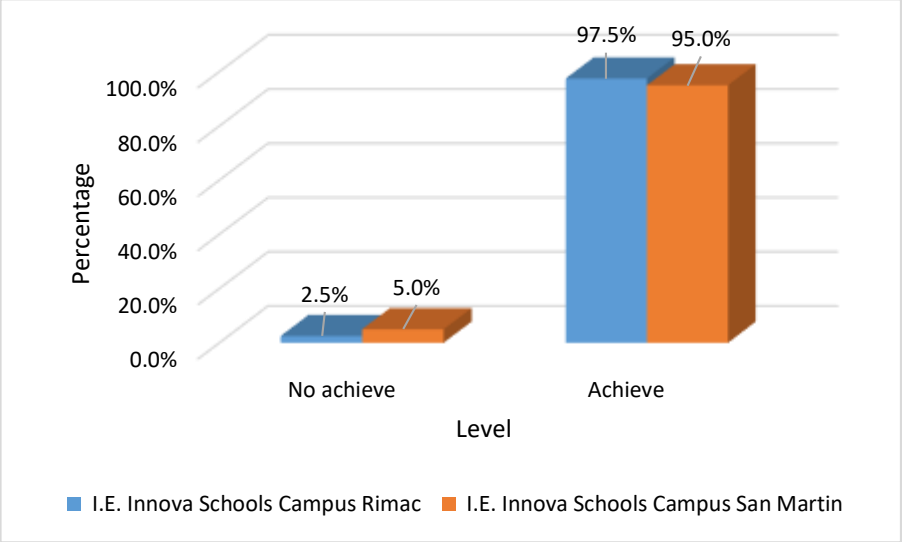

Figure 2. Percentage of the variable form perception

Descriptive analysis regarding the space orientation dimension

Table 3 and Figure 3 show the results of the descriptive analysis regarding the spatial orientation dimension between the Innova Schools educational institutions of the Rímac and San Martín de Porres campus. With respect to the level achieved, Rimac campus reaches 100%, unlike 92.5% corresponding to the San Martín de Porres campus. On the other hand, in relation to the level not achieved, there is a predominance at the San Martín de Porres site with 7.5%, in contrast to 0% corresponding to the Rímac campus.

Table 3. Percentage of the spatial orientation variable

	I.E. Innova Schools			
	Campus Rímac		Campus San Martin	
	Frequency	%	Frequency	%
No achieve	0	0%	3	7.5%
Achieve	40	100%	37	92.5%
Total	40	100.0%	40	100.0%

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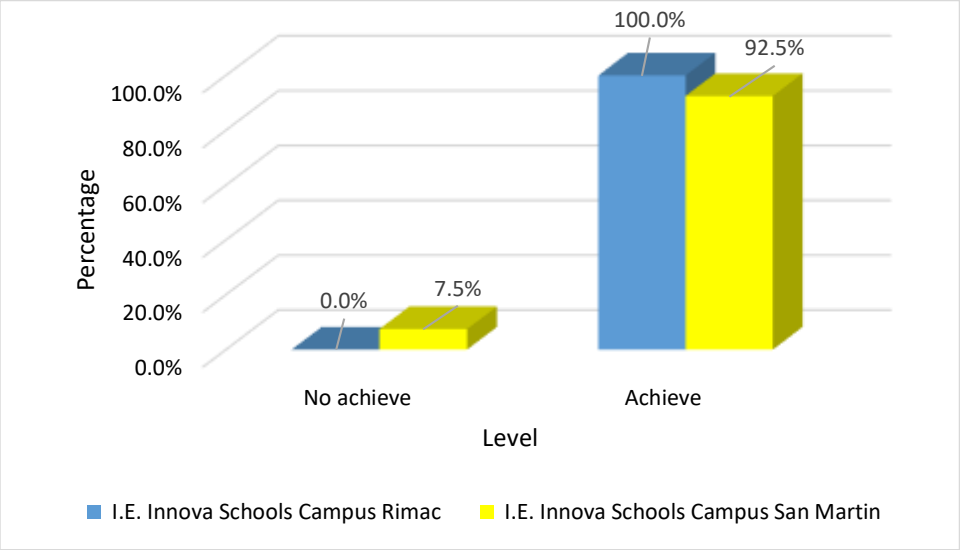

Figure 3. Percentage of the spatial orientation variable

Descriptive analysis regarding the dimension figure-background discrimination

Table 4 and Figure 4 show the results of the descriptive analysis regarding the figure- background discrimination dimension between the Innova Schools educational institutions of the Rímac and San Martín de Porres campus. With regard to the level achieved, the Rimac campus has a 97.5%, unlike a 92.5% corresponding to the San Martín de Porres campus. While at the level not achieved, there is a predominance at the San Martín de Porres site with 7.5%, unlike 2.5% at the Rímac campus.

Table 4. Percentage of the variable figure and background discrimination

	I.E. Innova Schools			
	Campus Rímac		Campus San Martin	
	Frequency	%	Frequency	%
No achieve	1	2.5%	3	7.5%
Achieve	39	97.5%	37	92.5%
Total	40	100.0%	40	100.0%

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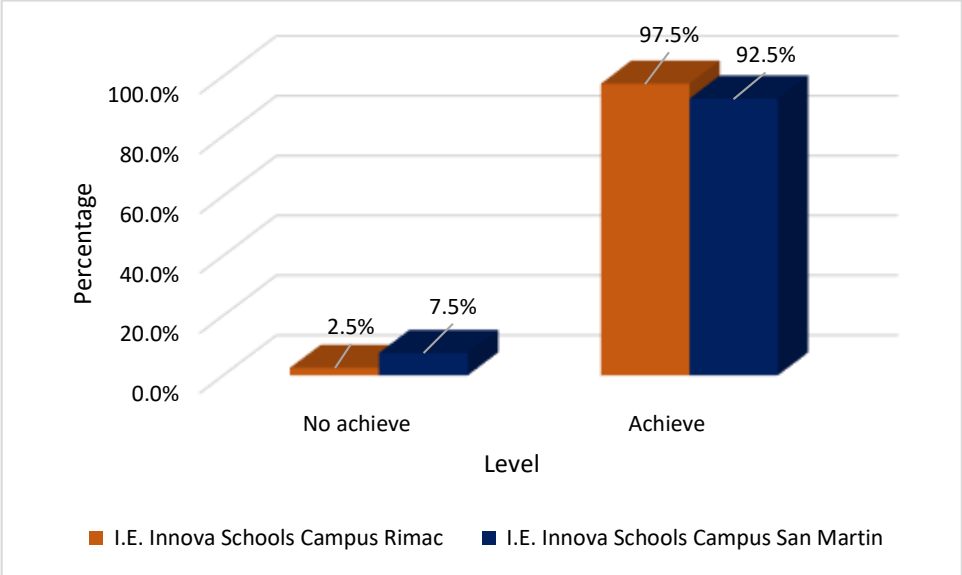

Figure 4. Percentage of the variable figure and background discrimination

Testing of hypothesis: Variable Visual Perception

To compare the results of the level of visual perception, between both venues, the nonparametric test "U of Mann-Whitney" was applied, where it was observed that the Institutions Innova Schools Rimac campus obtained a value of 43.81 unlike the Innova Schools institution San Martín de Porres campus that reached a value of 37.19.

Table 5. Results of the Mann Whitney U test for the variable visual perception

	I.E. Innova Schools	N	Average Range	U de Mann Whitney	Sig.
Visual Perception	Campus Rímac	40	43,81	667,500	,195
	Campus San Martin	40	37,19		
	Total				

Hypothesis testing

Since the value of significance is greater than 0.05, the alternative hypothesis is rejected and the null hypothesis is accepted. These data affirm that there are no significant differences between the variable visual perception among the four-year-old children of the Innova Schools educational institutions of the Rímac and San Martín de Porres campus, since the results obtained were of 0.195 of Sig. Asymptotic.

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Contrast of specific hypotheses: Figure-background discrimination

To compare the results of the figure-fund discrimination level of the campus of the Innova Schools, the nonparametric test "Mann-Whitney U" was applied for independent samples, where it was determined that at the Rímac campus it obtained a value of 45.60 unlike San Martin de Porres, which had a value of 35.40.

Table 6. Results of the Mann Whitney U test for the figure discrimination figure background

	I.E. Innova Schools	N	Average Range	U de Mann Whitney	Sig.
discrimination figure background	Campus Rímac	40	45,60	596,000	,038
	Campus San Martin	40	35,40		
	Total	80			

Hypothesis testing

Since the significance value is less than 0.05, the null hypothesis is rejected and the alternative hypothesis is accepted. These data affirm that there are significant differences between the figure discrimination figure background in the children of four years of the educational institutions Innova Schools of the Rimac and San Martin de Porres sites since the results obtained were 0.038 of Asymptotic Sig.

Contrast of specific hypothesis: Perception of the Form

To compare the results of the perception level of the form between the Rímac and San Martín de Porres sites, the non-parametric "Mann-Whitney U test" was applied for independent samples. Here it was established that the Institutions Innova Schools Rimac campus obtained a value of 43.80 compared to the Innova Schools San Martin de Porres institution that achieved a value of 37.20.

Table 7. Results of the Mann Whitney U test for the perception dimension of the form

	I.E. Innova Schools	N	Average Range	U de Mann Whitney	Sig.
Perception of the form	Campus Rímac	40	43,80	668,000	,164
	Campus San Martin	40	37,20		
	Total	80			

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Hypothesis testing

Since the value of significance is greater than 0.05, the alternative hypothesis is rejected and the null hypothesis is accepted. These data affirm that there are no significant differences between the shape perception dimension among the four-year-old children of the Innova Schools educational institutions of the Rímac and San Martín de Porres campus, the reason being that the results obtained were 0.164 of Sig. Asymptotic

Contrast of specific hypothesis: Spatial Orientation

To compare the results of the figure-fund discrimination level between the two sites, the non-parametric "Mann-Whitney U" test was applied for independent samples, where it was observed that the Rimac Campus Innova Schools acquired a value of 40.46 in comparison to the Innova Schools institution, San Martín de Porres, which had a value of 40.54.

Table 8. Results of the Mann Whitney U test for the spatial orientation dimension

	I.E. Innova Schools	N	Average Range	U de Mann Whitney	Sig.
spatial orientation dimension	Campus Rímac	40	40,46	798,500	,988
	Campus San Martin	40	40,54		
	Total	80			

Hypothesis testing

Since the value of significance is greater than 0.05, the alternative hypothesis is rejected and the null hypothesis is accepted. These data affirm that there are no significant differences between the spatial orientation dimension among the four-year students of the Innova Schools educational institutions of the Rímac and San Martín de Porres campus, given that the results obtained were of 0.988 of Sig. Asymptotic.

4. Conclusions

- Regarding the level of visual perception, it was found that there are no significant differences between the children of four years of the educational institutions innova schools of the districts of Rímac and San Martín de Porres since in the same level achieved the Innova schools of the Rímac reached 100% and the Innova Schools of San Martin de Porres 97.5%. Therefore it is concluded that the Innova Schools of the Rimac have a very good visual perception development, while the Innova Schools of San Martin de Porres could still reinforce this capacity.
- In the discrimination figure fund figure it was determined that there are significant differences but that they are minimal in the four-year students of the Innova Schools educational institutions of the Rímac campus and the San Martín de Porres campus, since the first one obtained a 97, 5% of the level achieved and the other site presented 92.5%, thus determining that both institutions are in a good level of development of the dimension.
- Regarding the perception dimension of the form, it was found that there are no significant differences among the four-year-old students of the innova schools, since in the Rímac campus a 97.5% achievement was obtained, while in the the San Martín de Porres campus

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achieved 95%. Therefore it can be concluded that both institutions are in a good level of development of the dimension.

- According to the spatial orientation dimension, it is concluded that there are no significant differences between the four-year students of the educational institutions. While the campus of the Rimac obtained 100% achievement, the campus of San Martin de Porres achieved 92.5%. Therefore, it is concluded that both institutions are in a good level of development of the dimension although the difference is minimal according to the percentages found between both venues.

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