

Received: October 2023 Accepted: December 2023

DOI: <https://doi.org/10.58262/ks.v12i1.162>

Evidence of Reliability and Validity of a Questionnaire to Assess Intercultural Citizenship

Felipe Aguirre Chávez¹, Lida Violeta Asencios Trujillo², Carlos Jacinto La Rosa Longobardi³, Giovanna Sonia Gutiérrez Narrea⁴, Livia Cristina Piñas Rivera⁵, Maritza Doris Fuertes Vara⁶

Abstract

The purpose of this study was to determine the validity and reliability of a questionnaire to investigate the perception of intercultural citizenship. The design was instrumental in the quantitative approach. The sample consisted of 1,200 high school students between 11 and 17 years of age from public schools of UGEL 06 in Lima. The basis of the intercultural citizenship questionnaire conforms the dimensions of participation and coexistence assumed from the work of Palou, Rodríguez and Vila (2014). As results we found, an Aiken validity index of 1.00, which indicates a high concordance and high internal consistency of the questionnaire through the Cronbach's alpha coefficient, yielding a value of 0.920, which suggests a high reliability in the results obtained.

Keywords: *reliability, validity, citizenship, interculturality, high school students.*

Introduction

Although humanity has conquered the distance that separates the Earth from the Moon and has explored the depths of the ocean, it has also erected barriers between individuals and has become trapped in a sphere of isolation and loneliness, despite having achieved astounding feats. A passage from Eliot's "The Canterbury Tales" might describe this period: "As we increase our knowledge, we approach our own ignorance; as our ignorance increases, we approach death. But the nearness of death does not bring us closer to the divine. Therefore, it could be argued that even our proximity to death has not brought us closer to our fellow human beings.

In this context, cultural and social diversity, with all its benefits, has become an opportunity and a challenge for the social sciences. As stated by Sotolongo (2006), there is a need for new perspectives that can understand the world as a dynamic system. In this way, it will cease to be a collection of objects and, on the contrary, will be presented to the mind and to knowledge as a reality in which complex networks, emergence and evolution interact.

In the case of Peru, the schools have become centers of cultural exchange. Indigenous and Amazonian communities have experienced an increase in social mobility in recent years.

¹ Universidad Marcelino Champagnat, Perú, Email: faguirre@umch.edu.pe, Código Orcid: 0000-0003-3474-2603

² Universidad Nacional de Educación Enrique Guzmán y Valle, Perú, Email: lasencios@une.edu.pe, Código Orcid: <https://orcid.org/0000-0001-8834-8084>

³ Universidad Nacional de Educación Enrique Guzmán y Valle, Perú, Email: clarosa@une.edu.pe, Código Orcid: <https://orcid.org/0000-0002-5439-1452>

⁴ Universidad Nacional de Educación Enrique Guzmán y Valle, Perú, Email: ggutierrez@une.edu.pe, Código Orcid: <https://orcid.org/0000-0002-6372-9937>

⁵ Universidad Nacional de Educación Enrique Guzmán y Valle, Perú, Email: lpinas@une.edu.pe, Código Orcid: <https://orcid.org/0000-0002-1631-4923>

⁶ Universidad Nacional de Educación Enrique Guzmán y Valle, Perú, Email: mfuertes@une.edu.pe, Código Orcid: <https://orcid.org/0000-0003-4572-139X>

Currently, it is possible to find in the cities and their schools human groups, families that have moved to the regional capitals and, above all, to the capital of the country. Although the reasons for migration are diverse, it is a challenge for schools to promote education that respects the rights and specificities of these people, with the aim of their integration and acceptance. This means promoting intercultural citizenship, which implies an identity open to the world and the search for societies free of historical barriers, avoiding reductionism, authoritarianism and traditionalism, and instead promoting personal fulfillment.

According to INDEPA (2010), many cultures have disappeared due to the devastation of their natural environment. Peru, as a nation, is losing cultural knowledge and values due to the extinction of some ethnic groups. Globalization is imposing cultural homogenization in an overwhelming manner, resulting in weak national self-esteem, partly due to inadequate policies for the conservation, promotion and protection of culture in a globalized world. Despite having deep cultural roots, Peru continues to lack geopolitical cohesion and identity.

A report by the Ministry of Culture (2014) on discrimination and racism states that 39% of Peruvians feel they are discriminated against because of their race, 78.9% consider Peru to be a racist country, and 89.5% of Limeños believe there are discriminatory attitudes towards people from the provinces. Social and economic inequalities are related to deficiencies in human education and citizenship education, in systems that are shaped by approaches and paradigms. Educational paradigms continue to be unilateral and elitist. Although the aspiration to achieve just, inclusive, intercultural and caring societies with intercultural citizens remains a desired goal, so far, these aspirations remain at the declarative level.

Therefore, it is crucial, without neglecting the global development of knowledge, to critically embrace foreign contributions and create authentic personalities with intercultural citizenship. As José Martí stated, "Grafting the world into our republics" implies the construction of a society characterized by intercultural citizenship. This must be based on our own culture and its values. In this regard, Octavio Paz also proclaimed, "Latin American man does not need wings but roots". In other words, we must recognize ourselves, build our identity and on that basis seek understanding with others. Without knowing who we are, opening ourselves to the world would be a misdirection.

The notion of intercultural citizenship emerges as a theoretical concept that develops from the dynamic fusion of data, ideas and categories. Its prominence is aligned with the demands of contemporary society, in which new identities emerge in the context of a legal system based on citizenship rights. This concept, according to Poblet (as cited in Aguirre, 2018), is characterized as integrative and pursues the unification of all cultures living together in the same geographical territory. This approach embraces a unitary perspective that is not limited to the recognition of the singularities and values of both individuals and their respective cultures, but considers them as capacities for a synergistic interaction and relationship in an environment of mutual acceptance. Within this environment, Aguirre (2018) developed the intercultural citizenship questionnaire with the objective of collecting information on this concept. The construction of the questionnaire was based on the dimensions of participation and coexistence, taking as a reference the previous work of Palou, Rodríguez and Vila (2010).

The dimension of intercultural coexistence implies the daily interaction between individuals from diverse cultures, with the purpose of exchanging ideas with respect and achieving integration. This constitutes the essence of intercultural coexistence. In this regard, Aramburú (as cited in Palou, 2014) pointed out that living together implies the creation of environments

in which differences can be debated and conflicts regulated, ensuring that all parties and voices are present without exclusions. From this process, several shared public spaces can emerge.

The dimension of participation is understood as the active, committed and respectful activity by the individual in the exercise of citizenship. This implies practicing collaborative skills and attitudes within the community, with sincere commitment and respect for the principles of the rule of law. According to Campos and Giner (as cited in Palou, 2014), democracy is a political system and, in turn, a form of coexistence, in which the representation of different interests should be forged through dialogue and solidarity. Based on the critical analysis of the aforementioned contributions, this study defines intercultural citizenship competencies as the set of knowledge, cognitive, emotional and communicative skills that enable people to interact in coexistence and participate in the construction of a democratic, peaceful and inclusive society.

As Aguirre et al. (2019) point out, interculturality functions as an approach that promotes respect, acceptance, exchange and constructive dialogue among diverse ethnic and cultural groups. In this approach, each group contributes and benefits from each other, which makes it possible to creatively confront cultural encounters, the possible loss of identity, as well as manifestations of discrimination and exclusion, such as racism, machismo, authoritarianism, ethnocentrism, traditionalism and regionalism.

The purpose of the intercultural citizenship questionnaire is to explore the perception that students between 11 and 17 years old have regarding intercultural citizenship. The design of the questionnaire was based on the dimensions of participation and coexistence, taking as a reference the works of Palou and other authors, as cited in Aguirre (2018). The questionnaire consists of 21 statements presented on a 5-point Likert-type scale, ranging from "strongly disagree" to "strongly agree". These statements are divided into two dimensions: 10 statements (numbers 12 to 21) correspond to the participation dimension, and the remaining 11 statements (numbers 1 to 11) correspond to the coexistence dimension.

Aguirre (2018) conducted a preliminary trial with 100 high school students in a public educational institution, with the purpose of establishing the psychometric parameters of the intercultural citizenship questionnaire. The results of this preliminary test indicate outstanding reliability levels, with a Cronbach's Alpha coefficient of 0.801, denoting high reliability, and an Omega coefficient, which is more precise, of 0.77, also suggesting solid reliability. To assess content validity, the Aiken V index was used, and six experts participated in the process. A high level of content validity was achieved, reaching a value of 0.94, which is considered optimal, with a significance level of $p < 0.05$.

Method

The study approach was quantitative, with an explanatory level and an instrumental design. It was directed towards the creation of a questionnaire capable of assessing intercultural citizenship in high school students, seeking to ensure the validity and reliability of the instrument. This questionnaire was conceived to be used in data collection, with the objective of testing hypotheses by means of numerical measurement and statistical analysis. In this way, it sought to establish behavioral patterns and corroborate theories (Hernández et al., 2014).

The population under study was composed of 2,450 students studying from the first to the fifth year of secondary education in RED 3 of UGEL 06 - Vitarte. For the selection of the

sample, a non-probabilistic, criterion-based, purposive approach was used. The researchers specifically selected a portion of students from each institution and educational level, resulting in a sample of 1,200 students.

The inclusion criterion was established as the participation of all students between 11 and 17 years of age who were present at the time the questionnaire was administered and who had completed all the questions in full. Only those students who were available for the questionnaire were considered and those who were involved in other activities at the time were excluded.

The intercultural citizenship questionnaire was designed by Felipe Aguirre Chávez, in Lima, Peru, in 2018. It was based on the dimensions of participation and coexistence, taking as a reference the research conducted by Palou, Rodríguez and other authors, as mentioned in Aguirre (2018). The fundamental purpose of the questionnaire was to investigate the perception of students aged between 11 and 17 years about intercultural citizenship.

Result

The software used to analyze the data obtained from the processing of the information collected by means of the Scale was IBM SPSS Statistics version 25. Using this program, the Cronbach's Alpha reliability coefficient was calculated and the exploratory factor analysis was carried out.

Table 1: Table of Specifications of Intercultural Citizenship Dimensions in High School Students.

Dimensions	indicators	items
Participation		The cultural diversity of my country makes me feel proud of it.
		I feel comfortable living with students from different cultures.
		I am attracted to the idea of making friends with people from other cultures.
		I feel good to deal with students from the Andean region.
		I feel good dealing with students from the Amazonian area
		I feel good to share with Amazonian students.
		I feel good to share with Andean students.
		I like to work with students from the Amazon region.
		I like to work with students from the highlands.
		I am interested in learning about the customs of other regions
coexistence		I like to listen to different ways of speaking
		I consider that participating in social activities in my community is a necessity.
		I consider that participating in the educational activities of my school is a necessity.
		It is important to participate in activities of the institution directed to the community.
		A large part of my life is focused on participating in the community.
		I feel motivated to participate in the activities of my educational institution.
		I believe that citizen participation makes the world a better place.
		I feel it is an obligation to participate in the work of my community.
		It is important to participate with the authorities to improve my community.
		It is important to demand that the authorities take actions to improve my educational institution.
	It is important to demand that the authorities take actions to improve the community.	

It consists of a set of 21 statements presented in a 5-point Likert-type scale format, ranging from "strongly disagree" to "strongly agree". These statements are organized in two dimensions. A total of 10 statements (from 12 to 21) are part of the participation dimension, while the remaining 11 statements (from 1 to 11) correspond to the coexistence dimension.

KMO Test

This evaluation points to the feasibility of carrying out a construct analysis, since the sample adequacy index is close to 1 with a value of 0.901, and Bartlett's test of sphericity shows high statistical significance, as reflected in Table 2.

Table 2 KMO and Bartlett's Test.

Kaiser-Meyer-Olkin measure of sampling adequacy		,901
Sphericity test Bartlett	approx. Chi-squared	3857,209
	df	210
	Sig.	,000

Explained Variance

The factor analysis revealed that the total variance explained is divided into two latent factors: the participation dimension and the coexistence dimension. Together, these factors explain 56.262% of the total variance. This indicates that both factors are indicative of the degree of intercultural coexistence. The remaining 43.738% of the variance reflects the influence of other variables on the students' responses.

Table 3 Total Variance Explained.

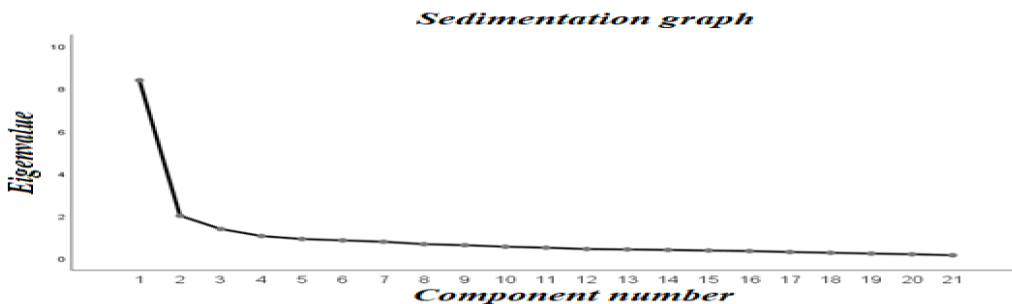
Component	Initial eigenvalues			Sums of squared extraction charges			Sums of loads squared by rotation		
	Total	% de variance	% accumulated	Total	% de variance	% accumulated	Total	% de variance	% accumulated
1	8,405	40,024	40,024	8,405	40,024	40,024	5,862	27,913	27,913
2	1,392	6,629	56,262	2,018	9,609	49,633	4,561	21,720	49,633

Extraction method: principal component analysis.

Sedimentation Figure

In relation to the sedimentation graph, the six upper points stand out, which are defined by the line parallel to the number of components from the inflection point of the graph, and this line crosses at point one of the eigenvalue. This result indicates that the instrument is composed of two factors: the first is related to the participation dimension, while the second is linked to the coexistence dimension, as illustrated in Figure 1.

Figure 1 Sedimentation Graph Showing Two Dimensions.



Rotated Factorial Matrix

To discern the components of the instrument, a total of 25 planned rotations were carried out. Of these, the results revealed that the first 11 interactions presented the most relevant and significant correlations, as shown in the matrix.

Table 3 Rotated Component Matrix.

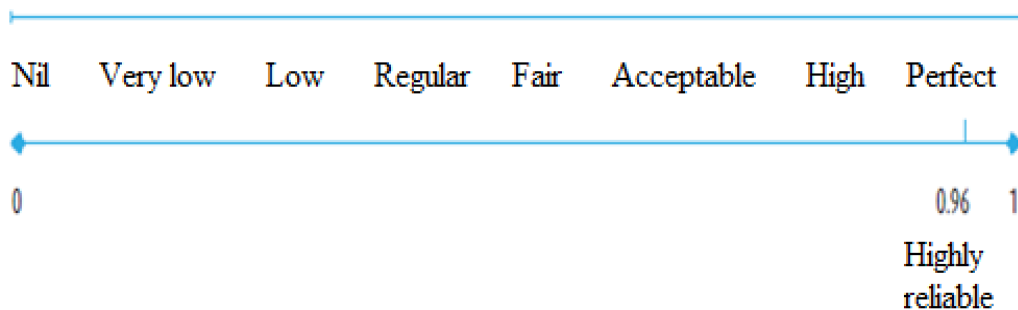
	Component	
	1	2
1. I am proud of the cultural diversity of my country.	,401	
2. I feel comfortable living with students from different cultures.	,699	
3. I am attracted to the idea of making friends with people from other cultures.	,716	
4. I feel good about dealing with students from the Andean area.	,811	
5. I feel good when dealing with students from the Amazonian area.	,806	
6. I feel good about sharing with students from the Amazonian area.	,807	
7. I feel good about sharing with Andean students.	,797	
8. I like to do work with students from the Amazon region.	,770	
9. I like to work with students from the highlands.	,781	
10. I am interested in learning about the customs of other regions.	,517	
11. I like to listen to different ways of speaking	,424	
12. I consider that participating in the social activities of my community is a necessity.		,605
13. I consider participating in the educational activities of my school a necessity.		,693
14. It is important to participate in activities of the institution directed to the community.		,701
15. A large part of my life is focused on participating in the community.		,588
16. I feel motivated to participate in the activities of my educational institution.		,624
17. I think that citizen participation makes a better world.		,600
18. I feel it is an obligation to participate in the work of my community.		,484
19. It is important to participate with the authorities to improve my community.		,572
20. It is important to demand that the authorities carry out actions for the improvement of my educational institution.		,608
21. It is important to demand that the authorities carry out actions for the improvement of the community.		,577
Extraction method: principal component analysis. Rotation method: Varimax with Kaiser normalization.		
a. The rotation has converged in 3 iterations.		

In relation to the results shown in the rotated component matrix, values exceeding 0.3 are evident for each component. In this sense, the first component, referring to participation, is composed of 11 items, while the second component, related to coexistence, is composed of 10 items.

Reliability of the Instrument's Scales

The evaluation of the internal consistency of the instrument is based on the Cronbach's Alpha statistical coefficient, calculated from the 21 items. In this context, the coefficient obtained is 0.920, indicating high reliability according to the reliability coefficient interpretation table as described in Hernandez et al. (2014).

Table 4 Interpretation of the Reliability Coefficient.



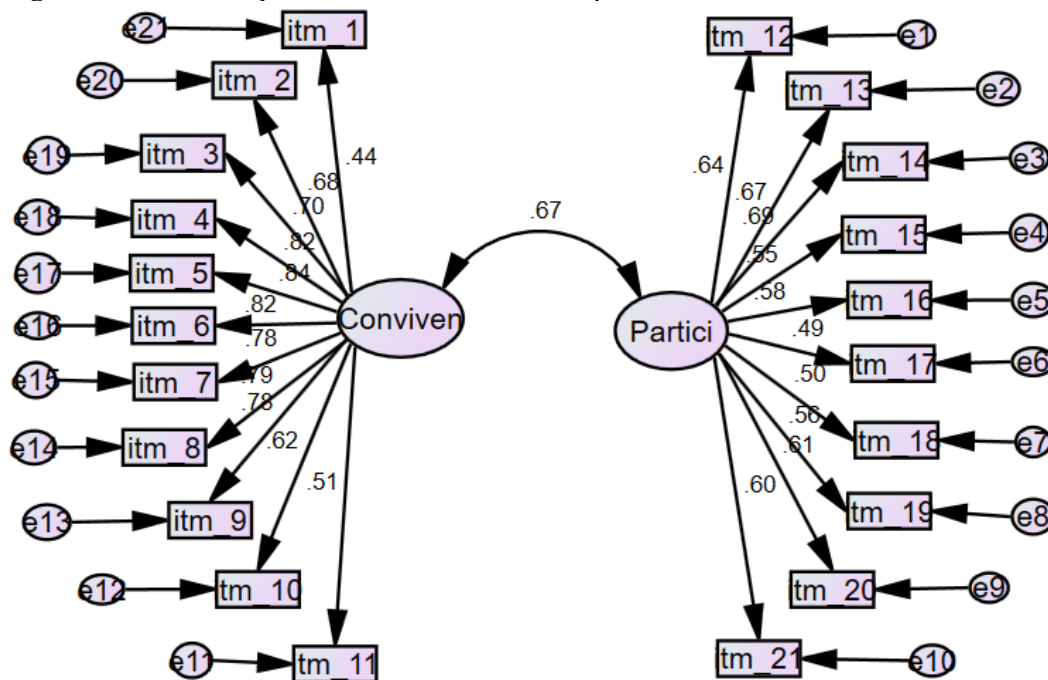
Note. Hernández et al. (2014).

Table 5 Reliability of the Intercultural Coexistence Instrument.

Cronbach's alpha	No. of elements
,920	21

Confirmatory Validity

Figure 2 Structural Equation Models Generalized by Items.



Note: Measurement model to determine the limitations perceived by the students of Regular Basic Education Secondary School of UGEL 06-Ate.

$X^2 = 872.571 \quad df = 350 \quad p_value = 0.000$

The relationship between the components of participation and coexistence, as well as the study variable, intercultural citizenship, presents a notable positive association, insofar as the values are in the range of $2df < X^2 < 3df$ ($700 < 872.571 < 1050$) and also meet the condition of $2 < X^2/df < 3$ ($2 < 2.49306 < 3$). In terms of the relationship between the variables under study,

the coexistence dimension and the participation dimension exhibit a direct and moderate connection of 0.67. In addition, it stands out that item 4 of the participation dimension, which expresses "I feel good when dealing with students from the Andean area", presents the highest dependence with a value of 0.84, while the lowest relationship is observed in relation to item 1 "The cultural diversity of my country makes me feel proud" with 0.4. In relation to the participation variable, item 13 reveals a higher relationship with a value of 0.67, in contrast to item 17 which shows the lowest relationship with a value of 0.49.

The Model Presents a Good Fit; Since

The fit improvement measures present values within the appropriate ranges according to the pre-established criteria, which are explained below. In relation to the normalized fit index NFI, a value of 0.979 is observed, which shows a high level of proportional fit. In addition, the comparative fit index CFI shows a value of 0.816, which indicates a good level of model fit, especially when close to 1.

Measures of Parsimony Fit

It represents the level of fit achieved by each estimated coefficient or parameter and plays a key role in comparing between different alternative models. These include the parsimonious normalized fit index, also known as PNFI, with a value of 0.634, and the normalized fit index, NFI, with a value of 0.979. Also, there is the Akaike information criterion, abbreviated as "AIC", with a value of 1000.571. The root mean squared error (RMSEA) presents a value of 0.102. In terms of a fit considered acceptable, a limit is set at 0.08. On the other hand, the goodness-of-fit index (GFI) exhibits a value of 0.861, which is close to the minimum threshold of 0.90 that is set as necessary to qualify the mean model as acceptable.

Discussion

The main purpose of this study was to establish the evidence of content validity by expert judgment, validity based on internal structure by exploratory factor analysis (EFA), and reliability of the intercultural citizenship questionnaire applied to high school students. Regarding the content-based validity by expert judgment, the results obtained during the evaluation indicated high consistency, with a total validity index of 1.00. In relation to the validity based on the internal structure of the scale applied to the students, an exploratory factor analysis (EFA) was performed. The results presented in the rotated component matrix show values above 0.3 for each component. Specifically, the first component, associated with participation, comprises 11 items, while the second component, linked to coexistence, is composed of 10 items.

According to the findings of the exploratory factor analysis, it is suggested, as a guideline for further research, the detailed observation of the factor loadings of each item in relation to the corresponding factor. It is proposed to reorganize them according to the new groupings obtained, to carry out additional measurements and finally to perform a confirmatory factor analysis. On the other hand, the evaluation of the internal consistency of the instrument was carried out by means of Cronbach's Alpha statistical coefficient, using the 21 items. In this aspect, a coefficient of 0.920 was obtained, which reflects a considerably high reliability. This indicates a high level of reliability both in the questionnaire as a whole and in each of its items.

This research has relevance due to its contribution of a valid and reliable questionnaire. In addition, its significance transcends and can serve as a basis for future research focusing on the

variable of intercultural citizenship in high school students. Likewise, it could be used as a reference in longitudinal studies related to intercultural citizenship. In the same sense, it could contribute to the revision of the dimensions of participation and coexistence.

Finally, with respect to the possible restrictions identified in the research at a general level, it is important to highlight that although the instrument was validated in two stages, as a pilot study and a sample study, involving 100 students in the first case and 1,200 participants in the second, it is suggested to expand the analysis in future research with larger samples and to explore the possibility of verifying the validity and reliability tests in university students.

Conclusions

- The creation and validation of the questionnaire on intercultural citizenship was carried out using a sample of 1,200 high school students belonging to public educational institutions of UGEL 06 in Lima.
- The questionnaire about intercultural citizenship was made based on the dimensions of participation and coexistence, based on the research of Palou, Rodríguez and Vila (2014). This approach was intended to understand the perception of students aged between 11 and 17 years old regarding intercultural citizenship.
- Content validity was considered through the opinion of five experts in the field, resulting in an Aiken validity index of 1.00. Similarly, internal reliability was evaluated through Cronbach's Alpha coefficient, which yielded a value of 0.920, indicating high reliability.

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