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Generic Competences of University Students from Peru and Cuba

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Abstract. Generic competences are considered to be the ability of people to adapt to changes, relate to others and work collaboratively. The objective of this study was to compare the generic competences of university students from Peru and Cuba. The study sample consisted of 248 female students from public universities with current enrollment in Peru (127) and Cuba (121). The data collection was carried out using the questionnaire on generic competences of university students (CCGEU), the Cronbach's Alpha reliability value was .979, showing a high reliability of the instrument. The results show that the mean of generic competences in Peru is 3.88 and in Cuba is 3.84, which are adequate levels. In addition,

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the dimensions Systemic competence, Interpersonal competence and Instrumental competence show sufficient levels in both countries. It is concluded that the generic competences in Peru and Cuba reach adequate levels, so they were developed in university students in a similar way. These results may be due to the fact that the evaluated samples have adequately developed these competences that promote the relationship, integration and effective communication among peers in a constant social cooperation, teamwork and sense of leadership.

Keywords: generic competences, university students, higher education, learning, Peru, Cuba

1. Introduction

At present, the higher education system worldwide is undergoing a stage of restructuring and transformation. Higher education is a fundamental space for training specialists to achieve the development of countries (Zahner et al., 2021). However, there is a gap between academic training and activity in the workplace. While it is true that it is important for higher education students to have a favorable attitude and skills towards scientific research in order to consolidate their profession as a science and perform well (Hernández et al., 2022), it is also important to have generic competencies related to collaborative work, interpersonal relationships and emotional management (Vélez et al., 2018).

In recent years, the term "generic competences" has been used in the university environment, therefore, it is necessary to understand this concept. For this reason, it can be said that when reference is made to competence in the professional environment, it refers to the capabilities, aptitudes, skills and abilities that the individual has to perform a task related to his/her profession (García-Atarés et al., 2021). It also refers to people's performance, i.e., the ability to do, act or operate in a certain way in different areas of life (McClelland, 1973). Based on the above, some tests are conducted on students in order to evaluate these competences, as they serve to know how learning is taking place in the individual (Garrido et al., 2021). The generic competences also encompass the competences of the subject and increase the autonomy and learning that he/she has, on which the achievement of different objectives and solutions to problems typical of the university stage will depend (Garrido et al. 2021), in order to be able to adapt in the workplace, be flexible to change jobs and expand the knowledge learned (Yorke and Harvey, 2005).

Research studies on generic competences of university students were developed taking into account that the university education aims to enable students to transcend and strengthen their specific skills related to the profession and generic competences as a result of university experience and previous experience (Nabaho, 2017). A previous study conducted on medical students showed that the bidirectional feedback given through the tutor helps the development of generic competences (Godoy et al., 2021). Another study conducted on professors in Spain showed that methodological acceptance has an inverse relationship with the perceived competence construct (slope of -0.295), which indicates that the higher

the values of the perceived competence construct, the less reluctant they are to accept and perform teachers tutoring (Donoso et al, 2021). Therefore, the professor's ability to adjust to the competences that the student needs to build is essential (Koster et al., 2005). In addition, a survey of 1272 students from Osijek-Baranja County in Croatia concluded that there is a positive correlation between extracurricular activities and the entrepreneurial environment, and the level of entrepreneurial skills of the students (Perić et al., 2020).

In Colombia, an Academic Support Plan was designed based on critical reading and mathematics competences. The results showed that 22% of the students did not exhibit progress in their mathematical competences in contrast to 78% who had a significant contribution. In relation to critical reading, it was observed that 9.3% of the students did not show improvement in their reading competences in contrast to 90.7% who reached adequate levels of critical reading. Significant differences were also identified between the pre- and post-test. For example, in the pretest, 4 students obtained a grade lower than 1.0. below 1.0 and after the intervention intervention, the results of the post-test the post-test results show that only one student a grade lower than 1.0 (Castellar et al., 2021).

The generic competences can be better understood from three dimensions that explain this construct as instrumental competence which refers to methodological (environment management, such as problem solving or learning methods), cognitive (ability to control thoughts and ideas), linguistic and technological skills (ability to use technological devices), favoring the basic training of the student (Aguado et al., 2017; Amor, 2018). In addition, it is known that recent graduates think that the capacity for analysis and synthesis, basic general knowledge and knowledge related to their profession, computer skills and decision making, among others, are fundamental, promote liaison, integration and communication between two or more interlocutors, as well as social cooperation, specific or multidisciplinary teamwork and a sense of leadership (Corominas, 2001; Corominas et. al, 2006; Solanes et al., 2012). Finally, systemic competences include understanding, sensitivity and knowledge, autonomous learning, adaptation to changes and the creativity that the individual develops (Zabala and Arnau, 2008; Solanes et. al, 2012).

In Peru, the National System of Evaluation, Accreditation and Certification of Educational Quality aims that the profile of the graduate of higher education institutions is related to the needs of the country (SINEACE. 2017). In other words, professionals are trained with specific competencies related to the capabilities of the specialty and generic competencies related to the ability to relate optimally in the workplace. Likewise, Cuba's higher education institutions aim at the comprehensive training of higher education students, where the graduating student is competent, with scientific preparation and broad humanistic development and social commitment (Vega and De Armas, 2009). In both countries, the development of specific and generic competencies in higher education students is taken into account; however, in higher education, priority is given to specific competencies, considering them to be of greater relevance in professional training, so it is important to know the generic competencies present

in university students in Peru and Cuba. Therefore, the objective of this study was to compare the generic competencies of university students in Peru and Cuba.

2. Methodology

2.1 Type and design of research

The research is cross-sectional with a non-experimental design since the studied variable was not manipulated. It is a comparative and descriptive study on the state of the studied variable in a given population (Hernández-Sampieri and Mendoza, 2018). Moreover, it is basic research since it facilitated the collection of information on a reality that contributed to the increase of scientific knowledge and understanding of a specific problem (Barriga, 1971).

The variable "generic competences" of female students from public universities in Peru and Cuba was studied in this research.

2.2 Sample

The sample consisted of 248 female students from public universities with current enrollment in Peru (127) and Cuba (121), in this sense, the female population was considered, given that in Peru there is a higher percentage of women (17.2%) than men (15.5%) who reach higher education (National Institute of Statistics and Informatics [NISI], 2021). Due to the health emergency situation, the sample was a convenience sample by using technology (filling out a Google form).

2.3 Instruments

The instrument applied is called Questionnaire on generic competences of university students (CCGEU, by its Spanish initials) (Villanueva, 2014). The instrument consists of 61 items distributed in three dimensions, in turn these dimensions are subdivided into subdimensions, as follows: 1. Instrumental competence: a. Organization and planning. b. Information management. c. Solution of critical situations. d. Decision making. e. Communication. Communication. 2. Interpersonal: a. Teamwork. b. Critical thinking. c. Self-management. 3. Systemic: a. Learning orientation. b. Leadership. c. Motivation to learn. d. Leadership. Leadership. c. Motivation to quality. d. Flexibility. The instrument has levels of competence that are insufficient, sufficient and excellent. Regarding percentages (%) of response, those that are equal to or higher than 30% are classified as excellent according to frequency.

Finally, the Cronbach's Alpha reliability value was .979, which showed a high reliability of the instrument applied.

2.4 Data Analysis

The statistical package Statistical Package for Social Sciences (SPSS V. 25.0) and Microsoft Excel were used to process the study data. In addition, the analysis was carried out with tables of frequencies, percentages and mean. Finally, the Cronbach's Alpha reliability analysis was used.

3. Results

The population of this study is female students from public universities. In relation to their professional careers, in Peru the majority of them belong to Social

Sciences with 67.7% and in Cuba they belong to Others with 90.1%. In relation to the reasons they had for choosing the professional career they are studying, the response was "It is the one I like it" in both countries, 70.1% in Peru and 68.6% in Cuba. In relation to their age, more than 70% of the participants are between 18 and 21 years old, 78.7% (Peru) and 72.3% (Cuba). When asked about employment status, it can be observed that 70.9% (Peru) and 82.9% (Cuba) are dedicated exclusively to university studies. Finally, to get an idea of family conditions, the level of education of the parents was taken into account: in the case of Peru, 52.8% of mothers and 52% of fathers have basic education. In the case of Cuba, 68.2% of mothers and 43% of fathers have university education (Table 1).

Table 1. Characteristics of the study population by country

		Country of origin			
		Peru		Cuba	
		%	f_x	%	f_x
The professional career belongs to:	Economic Sciences	7.1%	9	0.0%	0
	Health Sciences	4.7%	6	0.8%	1
	Other	9.4%	12	90.1%	109
	Political Science	11.0%	14	0.0%	0
	Social Sciences	67.7%	86	9.1%	11
Reasons for choosing the career:	It is a family tradition	2.4%	3	0.8%	1
	It is easy	0.0%	0	0.8%	1
	It offers good job opportunities	11.8%	15	5.0%	6
	It is the one I like	70.1%	89	68.6%	83
	I was not admitted to another professional program	2.4%	3	13.2%	16
	No special reason	6.3%	8	7.4%	9
	Other	7.1%	9	4.1%	5
Age:	18-21	78.7%	100	72.7%	88
	21+	21.3%	27	27.3%	33
Job:	No	70.9%	90	82.6%	100
	Yes	29.1%	37	17.4%	21
Mother's studies:	No	7.9%	10	0.0%	0
	Basic	52.8%	67	23.1%	28
	Higher (university or high school)	37.0%	47	68.6%	83
	Other	2.4%	3	8.3%	10
Father's studies:	No	9.4%	12	0.0%	0
	Basic	52.0%	66	42.1%	51
	Higher (university or high school)	33.1%	42	43.0%	52
	Other	5.5%	7	14.9%	18

%=Percentage; fx= Frequency

The mean of generic competences in Peru is 3.88 and in Cuba 3.84, which means that both countries show Good enough level. 38.7% of them in Peru are almost always, compared to Cuba, where 37% are always in terms of frequency of demonstrating their competences (Table 2).

Table 2. Generic competences in Peruvian and Cuban students

Country	Generic Competences		
Peru	Mean		3.88
	Level		Good enough
	% of response	N	0.7
		CN	6
		M	26
		CS	38.1
		S	29.2
Cuba	Mean		3.84
	Level		Good enough
	% of response	N	2.7
		CN	9.2
		M	24.1
		CS	27
		S	37

%= Percentage; N=Never; CN=Nearly Never; M=Moderate; CS=Almost Always; S=Always.

Table 3. Instrumental competence and subdimensions in Peru and Cuba

Country			Instrumental Competence	Organization and planning	Information management	Solution of critical situations	Decision making	Communication
Peru	Mean		3.82	3.73	3.87	3.87	3.77	3.89
	Level		Good enough	Good enough	Good enough	Good enough	Good enough	Good enough
	% of response	N	0.4	0.47	0.63	0.49	0.26	0.00
		CN	6.4	6.14	6.61	6.79	5.51	6.69
		M	29.4	33.70	28.98	26.57	32.55	25.20
		CS	38.2	38.98	33.07	37.89	40.42	40.55
		S	25.7	20.71	30.71	28.25	21.26	27.56
Cuba	Mean		3.73	3.56	3.67	3.79	3.60	4.02
	Level		Good enough	Good enough	Good enough	Good enough	Good enough	Excellent
	% of response	N	4.1	5.45	2.98	2.27	3.03	2.07
		CN	10.7	11.24	13.22	10.74	11.29	7.02
		M	24.5	29.26	28.10	27.17	32.78	19.42
		CS	29.7	30.41	25.62	25.72	28.93	29.34
		S	31.0	23.64	30.08	34.09	23.97	42.15

%= Percentage; N=Never; CN=Nearly Never; M=Moderate; CS=Almost Always; S=Always.

Table 3 shows that instrumental competence reaches a sufficient level, with a mean of 3.82 (Peru) and 3.73 (Cuba). Regarding the frequency of demonstrating instrumental competence, 67.6% of the Peruvian students answered "moderate" and "almost always", compared to Cuba, where 60.7% answered "almost always" and "always". 1. Organization and Planning subdimension: both countries present sufficient levels, with Peru showing percentages above 30% in moderate and almost always categories, compared to Cuba, which presents only 30.41% in almost always category. 2. Information Management subdimension: the level of

this competence is sufficient in both countries. According to the percentages of responses, the frequency of demonstrating this competence in Peru is almost always and always, and in Cuba is always. 3. Solution of Critical Situations subdimension: the level is sufficient in both countries. The frequency of demonstrating the competence in Peru is almost always (37.89%) and in Cuba is always (34.09%). 4. Decision Making subdimension: the level is sufficient in both countries. Peru shows moderate (32.55%) and almost always (40.52%) and Cuba shows moderate (32.78%). 5. Communication subdimension: Cuba shows an excellent level in always category, with 42.15%, as opposed to Peru, which shows a sufficient level in almost always category, with 40.55%.

Table 4. Interpersonal competence and subdimensions in Peru and Cuba

Country			Interpersonal Competence	Teamwork	Critical Thinking	Self-Management
Peru	Mean		3.88	3.94	3.72	3.97
	Level		Sufficient	Sufficient	Sufficient	Sufficient
	% of response	N	0.94	1.57	0.98	0.26
		CN	6.09	5.51	8.17	4.59
		M	26.45	22.64	31.79	24.93
		CS	37.50	37.80	36.12	38.58
		S	29.01	32.48	22.93	31.63
Cuba	Mean		3.84	3.78	3.74	4
	Level		Sufficient	Sufficient	Sufficient	Sufficient
	% of response	N	2.74	2.89	4.24	1.10
		CN	9.11	9.30	10.33	7.71
		M	26.34	27.69	27.38	23.97
		CS	25.05	27.48	23.55	24.10
		S	36.75	32.64	34.50	43.11

%= Percentage; N=Never; CN=Nearly Never; M=Moderate; CS=Almost Always; S=Always.

Table 4 shows that the mean of interpersonal competence is 3.88 in Peru and 3.84 in Cuba, which means that both countries show a sufficient level. The frequency of demonstrating this competence in Peru is almost always (37.5%) and in Cuba always (36.75%). 1. In the Teamwork subdimension, students of both countries present a sufficient level. Frequency of demonstrating this competence in Peru is almost always (37.8%) and always (32.48%), and in Cuba is always (32.64%). 2. In the Critical Reasoning subdimension, both countries show a sufficient level. However, the frequency of demonstrating this competence in Peru is moderate (31.79%) and almost always (36.12%), and in Cuba is always (34.5%). 3. Self-Management subdimension: both countries show a sufficient level, with the frequency in Cuba being always (43.11%) and in Peru almost always (38.58%) and always (31.63%).

Table 5. Systemic Competence and subdimensions in Peru and Cuba.

Country			Systemic Competence	Learning orientation	Leadership	Quality motivation	Flexibility
Peru	Mean		3.97	3.89	3.96	3.95	4.09
	Level		Sufficient	Sufficient	Sufficient	Sufficient	Excellent
	% of response	N	0.73	0.98	0.79	0.94	0.20
		CN	5.63	5.91	4.27	7.40	4.92
		M	22.14	24.02	24.41	21.42	18.70
		CS	38.78	40.94	39.71	36.06	38.39
		S	32.73	28.15	30.82	34.17	37.80
Cuba	Mean		4	3,88	3,91	4.09	4.11
	Level		Sufficient	Sufficient	Sufficient	Excellent	Excellent
	% of response	N	1.91	2.48	1.77	1.32	2.07
		CN	7.66	8.06	9.56	7.44	5.58
		M	21.58	25.62	23.02	18.68	19.01
		CS	26.32	26.24	27.63	25.79	25.62
		S	42.53	37.60	38.02	46.78	47.73

%= Percentage; N=Never; CN=Nearly Never; M=Moderate; CS=Almost Always; S=Always.

Table 5 shows that in the systemic competence dimension, the mean of the students in Peru is 3.97, and in Cuba the mean is 4. They show a sufficient level. In relation to the frequency of demonstrating this competence, Peru almost always (38.78%) and always (32.73%) demonstrates this competence and Cuba always (42.53%) demonstrates this competence. 1. Learning Orientation subdimension: both countries show a sufficient level. There are marked differences in the frequency of demonstrating this competence. Cuba always has presented this quality (37.60%), while the frequency in Peru is almost always (40.94%). 2. In the Leadership subdimension, both countries show a sufficient level. In the case of Peru, more than 60% of the students almost always and always demonstrate this competence. In the case of Cuba, it is observed that the frequency is always (38.02%). 3. In relation to Quality Motivation, Cuba stands out with a mean of 4.09 and shows an excellent level. Always category has the highest percentage in terms of demonstration of this competence (46.78%). 4. In relation to the Flexibility Competence, both countries show an excellent level. It is also observed that more than 70% of the Peruvian students almost always (38.39%) and always (37.8%) demonstrate this competence. Finally, Cuban students always (47.73%) demonstrate this competence.

4. Discussion

For the University, the integral formation of its students constitutes a challenge, taking as a priority challenge, by incorporating in its Educational Models the integral formation, declaring to the generic competencies those that are desired that all students of the institution work (Salazar Botello et al, 2019). Currently, higher educational institutions consider relevant the strengthening of competences for adequate performance in the labor market (Pukelis and Pileicikiene, 2012). Within the development of competences, the production of

scientific knowledge through the publication of research papers (Hernández et al., 2021), as well as the training of competent human resources for the transition to knowledge societies and for socially sustainable economic development are fundamental (Hernández et al., 2021) (UNESCO, 2017).

The purpose of the study was to compare the generic competences of university students from Peru and Cuba. It was found that the mean of generic competences in Peru is 3.88 and in Cuba 3.84, which is sufficient. In addition, 38.7% of students in Peru almost always demonstrate the competences and in Cuba 37.0% of students always demonstrate them. These results may be due to the fact that the evaluated samples have adequately developed these competences that promote relationship, integration and effective communication among peers, in a constant social cooperation, teamwork and sense of leadership (Corominas, 2001; Solanes et al., 2012). Based on the above, generic competences also comprise the competences of the subject and increase the autonomy and learning that he/she has, on which the achievement of different objectives and solutions to problems typical of the university stage will depend (Garrido et al., 2021; Romaní-Pillpe and Macedo-Inca, 2022). The evaluation of generic competencies should contemplate thatstudents mobilize their previous knowledge in a realistic situation, categorizing the student's performance in levels, proposing progressively more complex activities and with more demanding criteria, which favor the acquisition and mobilization of learning (Villarroel Aand Bruna, 2014).

Another important result was that in the systemic competence dimension, the mean of the students in Peru was 3.97 and in Cuba the mean was 4, with a sufficient level in both countries. The fact that the results of generic competences in this dimension reach adequate levels can be due to the fact that both Peru and Cuba are developing countries, they are in the same Latin American region and therefore, the education policies and teaching are similar. This may have influenced the finding of similar results (Vargas, 2011). Regardless of the country, these generic competences are evaluated based on the graduate profile in public and private universities in order to meet the trends and demands of the company and the needs of the global market (Sandoval and Ormazábal, 2021). Huaiquilaf-Jorquera et al. (2021) found that graduates were unable to attribute meaning to the generic competencies described in the graduate profile because they were not clear about what each one implies. It is important that within each subject, teachers can transmit to students the development of competencies at different levels and how they nurture the graduate profile.

Another important result reported in this study was in the interpersonal competence dimension where the mean was 3.88 in Peru and 3.84 in Cuba, which places both countries at the sufficient level. This means that university students in both countries have managed to develop adequate levels of interpersonal development, i.e., they have the skills to communicate effectively with their peers and achieve favorable outcomes in social interaction (Hsiao, 2021). A study that showed students with excellent social skills was conducted on university students from Osijek-Baranja County in the country of Croatia and it concluded that there is a positive correlation between extracurricular activities, the entrepreneurial environment, and the level of entrepreneurial skills of the students (Perić et al.,

2020), showing that the entrepreneurial attitude was more important in those university students with better social skills. Illesca-Pretty et al. (2022) indicate that the students of the Nutrition and Dietetics course revealed greater importance to the generic interpersonal competencies, emphasizing teamwork, ethical commitment, critical capacity and self-criticism.

In addition, this study has some limitations in the level of analysis, which is descriptive and comparative, so that it only compares and describes the main developments in generic competences. However, since these developments have not been reported in previous studies, it is important to highlight them as a pioneering study. Another limitation is that the variable is subjective in nature, so measurements are based on the responses of the participants of the study that may or may not be honest. Thinking about it, in this study, at the beginning of the data collection, we asked each participant to be honest when answering, so the results maintain their scientific value. Additionally, this variable was collected with an instrument with excellent psychometric properties.

Finally, it is concluded that the generic competencies in Peru and Cuba reach adequate levels and were developed in a similar way in university students. Further studies should verify the factors that best predict the development of generic competences.

Likewise, it was found that the average of the dimensions of the generic competencies variable of students in Peru and Cuba are located in the sufficient and excellent levels, which could be due to the fact that both countries have similar policies in higher education, considering the development of generic and specific competencies to be important.

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