Validation of the GAEU-1 Acale to Assess the Learning Management of University Students

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Abstract

Introduction: The self-management of university learning encompasses a series of aspects that allow students to be conscious and autonomous in their professional training. *Objective:* In this article, we present the process of creation and validation of a scale to assess essential factors of this phenomenon: self-management of learning, conscious motivation strategies for learning, perception of academic performance, and techniques for deep learning. *Method:* The design is a cross-sectional quantitative process with the purpose of carrying out validity and reliability analysis of a psychological measurement instrument. The research was conducted with 1373 university students from Chile and Ecuador. *Results:* The scale consists of 19 items that conform the four factors mentioned and whose results indicate adequate psychometric properties, allowing it to be applied in the Latin American context. *Novelty:* This research proposes a new instrument to assess the self-management of the university learning process, which contributes to carrying out new research in the university educational context.

1- Introduction

The self-management of learning is a process of conscious and regulated self-teaching, which occurs when there are multi-factors such as motivation, a base of previous knowledge in favor of meaningful learning, and metacognitive, social, and emotional skills to generate independent study habits. In addition, the student himself seeks to configure and organize his study environment to achieve academic objectives and autonomous learning [1–3]. In some studies, the self-management of learning is known as self-regulated learning, since it encompasses knowledge developed in favor of self-teaching and conscious regulation of the learning process [4]. On the other hand, several studies on this learning methodology have called it autonomous learning since independence and self-direction are fundamental for this process of acquiring knowledge [3], and in the present research, it will be understood that the process of self-management of learning is a phenomenon that has taken a crucial interest in favor of the learning and challenges that university students must currently face [5].

Among the most important factors for the university student to generate autonomous and conscious learning are the strategies of conscious motivation to learn. According to Paris and Winograd [6], the motivation of self-regulated learning influences the decisions to reach academic goals; therefore, these strategies affect the way in which a difficulty is perceived, the value of such learning, self-efficacy, and the possibilities of educational success or failure. Another fundamental aspect within the self-management of the university educational process is techniques of deep learning, which allow the application of theoretical content and academic experiences to solve problems in the real life of the university student [7].

The perception of academic performance is another important factor for autonomous learning; according to Xulu-Gama et al. [8], the perception of success in the educational environment significantly influences the students' involvement in subjects. In addition, students who have a clear awareness of what their academic performance is and what the level they want to achieve is as well tend to act in a regulated manner towards learning goals that are meaningful for their professional training [9]. And as mentioned above, all these factors are paramount for sustained learning when executing an autonomous methodology.

College students, having new challenges and responsibilities, require effective and innovative study strategies, which is why encouraging self-management of learning can favor the reduction of stress and anxiety in students [5]. Moreover, college students who go on to develop these skills have different resources to develop autonomy in their adult lives, for example, when making decisions [10]. However, for students to feel more satisfied and have more sustainable learning, it is important to complement self-regulated learning with academic support from teachers [3].

Currently, several researches have been conducted in favor of autonomous learning, some of them have studied strategies and tools that can help university students. Carrión et al. [1] have reported that there is a benefit to the use of technological media such as podcasts when learning autonomously. However, other authors, such as Baars et al. [11] have found that this media is still not sufficiently effective, since it is not fully embraced by university students in educational matters, but rather in aspects of leisure and fun.

On the other hand, it has been shown that there is a relationship between autonomous learning and academic satisfaction, which influences the attainment of sustainable knowledge [3]. Accordingly, the fact that teachers and students are collaboratively involved in the exercise of learner autonomy [12] is critical. Moreover, as autonomous learning is composed of intrinsic motivation and student awareness of their behavior in favor of learning [10], it is necessary to work on the improvement of autonomy through intra- and interpersonal skills [13]. Other research has found that there is a relationship between the socio-cognitive functions of autonomous learning and self-regulation within sports practice. It has also been reported that women present higher levels of self-learning processes as opposed to men [14, 15]. On the other hand, Díaz Mujica et al. [16] have found that the use of audio-visual multimedia resources can contribute significantly to developing autonomous and regulated learning in university students.

The use of technological means and new self-regulated learning strategies has increased at the university level worldwide since the COVID-19 pandemic [5]. Despite the adaptation of teaching to a more autonomous one since the pandemic, the problems that this academic methodology has cannot be denied due to the fact that many students have difficulties in planning, executing, and monitoring their self-regulated learning processes [2, 17]. It is for this reason, that it is essential to take into account the different phenomena related to the design of autonomous academic strategies, such as personality, context, and culture, that come to influence the conditions of students in order to be more active and autonomous in their learning [18].

In the context in which this research is developed in Latin America, there are deficiencies in the educational system that inevitably affect university education, especially the processes of self-management of learning. In research by Lorente Rodríguez [19] and López-Leyva [20], it is stated that socio-economic inequality, geographical conditions, difficulties accessing all professions, and illiteracy generate serious problems for Latin American educational progress.

Currently, several instruments have been developed to assess self-management of learning, for example, the questionnaire developed by Curione et al. [21] that measures the motivation and learning strategies of university students. Garrido-Hornos [22] developed a scale to be able to assess the motivation involved in self-regulated learning in university students when learning a foreign language. Zhang & Li [23] developed an instrument that measures classroom practices to support students' self-regulated learning. Silva Moreira et al. [24] developed an instrument to assess the intention, planning, temporality, and dynamics of the learning process. Sáez-Delgado et al. [25] developed assessment methods to measure self-regulated learning, disposition, performance, and evaluation.

The self-management of learning assessment instruments evaluates components such as motivation, intention, planning, temporality, disposition, performance, and dynamics of the learning process. However, some aspects that still need to be improved in the assessment instruments for autonomous learning are the measurement of self-management of learning, conscious motivation strategies for learning, perception of academic performance, and the use of deep learning techniques. For this reason, since the processes of evaluation and measurement of self-management of learning are still under construction, the present research contributes to this gap by creating and validating a scale that allows the assessment of aspects of the learning management of university students that have not yet been investigated.

2- Research Hypotheses

H₁. The self-management of the learning scale developed will present adequate internal consistency parameters when applied in different Latin American contexts.

H₂. There are similar scores in the GAEU-1 scale when applied in the university contexts of two Latin American countries.

H₃. There will be similar scores when comparing men and women in self-management of learning, conscious motivation strategies for learning, perception of academic performance, and use of deep learning techniques.

H₄. Significant levels will be found in the correlation between the scales of self-management of learning, conscious motivation strategies, perception of academic performance, and deep learning techniques.

H₅. The developed self-management of learning scale will present an adequate fit with the proposed 4-factor model: self-management of learning, conscious motivational strategies for learning, perception of academic performance, and deep learning techniques.

3- Method

3-1- Participants

This research worked with a Latin American sample of 1373 university students from Chile and Ecuador between 17 and 33 years of age (M_{age} = 20.53, SD = 2.34). In Chile the sample was of 663 students (M_{age} = 20.23, SD = 2.42), in terms of gender, 308 (46.46%) of the participants were female and 355 (53.54%) were male. Based on the type of university to which the participants belonged, 65 were part of a private university (9.80%), and 598 of a public-state institution (90.20%). In Ecuador, the sample consisted of 710 university students (M_{age} = 20.80, SD = 2.21). In terms of gender, 465 were women (65.49%) and 245 men (34.51%). As for the type of university, 521 belonged to a private university (73.38%) and 189 to a state university (26.62%).

3-2- Instruments and Measuring Techniques

The scale to assess the Learning Management of University Students, which we have called GAEU-1, was made from the proposal of 4 sub-scales: (a) scale of self-management of learning, which assesses if the person is able to find solutions to the problems that arise in the academic process, organization, fulfillment of time and academic responsibilities; (b) scale of conscious motivation strategies to learn, which evaluates if the person can observe a positive academic future and is willing to learn; (c) scale of perception of academic performance, which measures self-perception of performance and learning capabilities; and (d) deep learning techniques, which assesses techniques such as the use of summaries, mind maps or autonomous research to build significant learning of the different subjects that are worked on in university education. In Appendix I you can see the applied instrument.

3-3- Procedure

This research project began with the evaluation and approval of the Human Research Ethics Committee of the Pontificia Universidad Catolica del Ecuador. Afterward, through collaborative work between the Chilean and Ecuadorian research teams, the items on the scales that value this input were determined. When the first version of the scale was completed, five cognitive interviews were conducted simultaneously in both countries to measure the comprehension of the instrument. Subsequently, a pilot study was conducted with the instrument with a sample of 10 university students, which allowed the polishing of the questionnaire for its final version. Annex 1 presents the instrument developed.

Prior to the massive application of the instrument, authorization for collaboration was obtained from students and professors at the universities of Chile and Ecuador. Afterward, the students were invited voluntarily to participate in this research. They had the opportunity to read the informed consent, which explained the research objectives, the duration, the instructions of the instrument, the commitments to the confidentiality of the data, and the results to be obtained. By signing this informed consent, the participants accepted their voluntary collaboration and understanding of the aims of the research. The application of the GAEU-1 instrument was carried out collectively in the same classroom, where the participants were under the direction of the researchers.

At all times during the research, the rights of the participants were respected, ratifying their possibility of voluntarily withdrawing at any stage of the study, for which they had the telephone numbers and e-mail addresses of the researchers. In addition, the physical and psychological integrity, data confidentiality, anonymous participation, and other ethical standards of research with human beings were safeguarded. Figure 1 represents the flow of research.

Figure 1. Investigation process

3-4- Data Analysis Plan

For the sociodemographic data, a descriptive statistical analysis of central tendency and dispersion was performed. Cronbach's alpha analysis was used for the first research hypothesis. For the analysis of the second and third hypotheses, Student's t-test was used to compare means. Pearson's correlation was used for the fourth hypothesis. To analyze the fifth research hypothesis, a confirmatory factor analysis was performed. Statistical analyses were performed in SPSS version 28 and AMOS version 25.

4- Results

4-1- Reliability Analysis - Internal Consistency

In the self-management of learning scale (items 2, 3, 4, 6, 13, and 14), adequate internal consistency parameters were found: $\alpha = 0.82$ (Chile), $\alpha = 0.79$ (Ecuador), and $\alpha = 0.80$ (complete sample of Chile and Ecuador). The correlation parameters in all items were found to be between medium and large ($r = 0.48$ and 0.64). When analyzing the alpha when eliminating an item, it was found that it was not necessary to do so and that all the items contribute significantly to the scale.

In the scale of conscious motivation strategies for learning, adequate levels of internal consistency were found: $\alpha = .83$ (Chile), $\alpha = 0.78$ (Ecuador), and $\alpha = 0.81$ (complete sample of Chile and Ecuador). In the analysis of the items in the three cases, it was identified that eliminating some of them did not improve significantly, so we worked with the scale made up of items 7, 8, 9, 10, and 11. The correlation of the items was presented of a medium and large magnitude ($r = 0.33$ and 0.74).

In the scale of perception of academic performance (items 1, 5, 12, and 15), internal consistency levels close to acceptable were found: $\alpha = 0.63$ (Chile), $\alpha = 0.67$ (Ecuador), and $\alpha = 0.65$ (complete sample of Chile and Ecuador). The correlation of the items was at an intermediate magnitude ($r = 0.33$ and 0.52). It was analyzed whether eliminating any item would improve the internal consistency of this scale; however, there was no significant change.

In the scale of techniques for deep learning, conformed by items 16, 17, 18, and 19, adequate levels of internal consistency were found: $\alpha = 0.81$ (Chile), $\alpha = 0.72$ (Ecuador), and $\alpha = 0.77$ (complete sample of Chile and Ecuador). In the level of correlation between the items, magnitudes between medium and large were found ($r = 0.47$ and 0.62). When analyzing whether any item should be eliminated to improve internal consistency, it was not found that this process was necessary; therefore, we worked with the scale made up of items 16, 17, 18 and 19. The results described above provide empirical evidence in favor of the first research hypothesis that affirms the adequate internal consistency of the GAEU-1 scale.

4-2- Descriptive Analysis

Once the internal consistency of each subscale was analyzed, we proceeded to configure each of the four scales with the items that comprise them. Table 1 shows the descriptive statistics found.

Table 1. Descriptive statistics

Factor	Country	Min	Max	M	SD
Self-management of learning	Chile	7.00	30.00	24.19	4.14
	Ecuador	7.00	30.00	23.88	3.99
	The entire sample	10.00	30.00	24.30	3.80
Conscious motivation strategies for learning	Chile	5.00	25.00	20.74	3.78
	Ecuador	5.00	25.00	20.09	3.69
	The entire sample	5.00	25.00	20.57	3.57
Perception of academic performance	Chile	4.00	20.00	14.95	2.75
	Ecuador	5.00	20.00	15.63	2.73
	The entire sample	5.00	20.00	15.46	2.58
Deep learning techniques	Chile	4.00	20.00	15.38	3.43
	Ecuador	4.00	20.00	14.81	3.04
	The entire sample	4.00	20.00	15.27	3.12

4-3- Analysis of the Factors of the Scale with the Sociodemographic Variables

The following analysis was conducted to identify whether there are differences or associations between the values found in the 4 factors and the different sociodemographic variables of the participants. Table 2 shows these results.

Table 2. Relationship of self-management learning factors with sociodemographic variables

Factor	Comparison between Chile and Ecuador	Relation to age	Gender differences
Self-management of learning	$t = 1.94$, $p = 0.02$ Chile ($M = 24.51$, $SD = 3.79$) Ecuador ($M = 24.11$, $SD = 3.82$)	$r = 0.04$, $p = 0.20$ (Ch) $r = -0.007$, $p = 0.85$ (Ec)	$t = -1.08$, $p = 0.46$ (Ch) $t = 2.65$, $p = .004$, $d = 3.98$ (Ec) Women: ($M = 24.15$, $SD = 3.99$) Men: ($M = 23.34$, $SD = 3.95$)
Conscious motivation strategies for learning	$t = 3.51$, $p = <0.001$ Chile ($M = 20.92$, $SD = 3,59$) Ecuador ($M = 20.25$, $SD = 3.52$)	$r = -0.01$, $p = 0.65$ (Ch) $r = -0.01$, $p = 0.44$ (Ec)	$t = -1.17$, $p = 0.12$ (Ch) $t = 1.63$, $p = 0.051$ (Ec)
Perception of academic performance	$t = -5.02$, $p = <0.001$ Chile ($M = 15.10$, $SD = 2.56$) Ecuador ($M = 15.80$, $SD = 2.54$)	$r = 0.11$, $p = 0.005$ (Ch) $r = 0.01$, $p = 0.75$ (Ec)	$t = -0.64$, $p = 0.26$ (Ch) $t = 0.72$, $p = 0.23$ (Ec)
Deep learning techniques	$t = 3.72$, $p = <0.001$ Chile ($M = 15.59$, $SD = 3.26$) Ecuador ($M = 14.96$, $SD = 2.94$)	$r = 0.03$, $p = 0.41$ (Ch) $r = -0.02$, $p = 0.58$ (Ec)	$t = -0.93$, $p = 0.17$ (Ch) $t = 1.93$, $p = 0.02$, $d = 3.04$ (Ec) Women: ($M = 14.97$, SD = 3.03) Men: ($M = 14.51$, SD = 3.05)

Regarding the relationship between the factors of self-management of learning of university students with sociodemographic elements, it was found that there are statistically significant differences when comparing the four factors of the scale with the country investigated (Chile and Ecuador). Regarding age, it was found that this variable correlates with the perception of academic performance in Chile. As for gender, statistically significant differences were found in self-management of learning and deep learning techniques in Ecuador. Table 2 shows the results found.

The statistical values found do not provide statistically significant empirical evidence for our second research hypothesis, since there are differences in the scores of the 4 factors depending on the country. In relation to our third hypothesis, it was found that Ecuadorian women have higher statistically significant scores than men. No differences were observed in Chile. These data provide partial evidence for our third research hypothesis.

4-4- Correlation between GAEU-1 Scale Factors

The next statistical analysis performed consisted of the correlation between the 4 factors of the scale of self-management of college students learning. In the results, it was found that these variables have a statistically significant relationship in a medium magnitude. Table 3 presents the values found. The values found provide empirical evidence in favor of our fourth research hypothesis.

Table 3. Correlation between factors of self-management of learning

	1	2	3	3
1. Self-management of learning	1			
2. Conscious motivation strategies for learning	0.565**	1		
	<0.001			
3. Perception of academic performance	0.599**	0.496**	1	
	<0.001	<0.001		
4. Deep learning techniques	0.610**	0.493**	0.452**	1
	<0.001	<0.001	<0.001	

4-5- Confirmatory Factor Analysis

The first analysis was performed with the hypothetical construction of the scale to assess university learning management with the 4 factors: (F1) self-management of learning, (F2) conscious motivation strategies, (F3) deep learning techniques, and (F4) perception of academic performance. Figure 1 shows the proposed model.
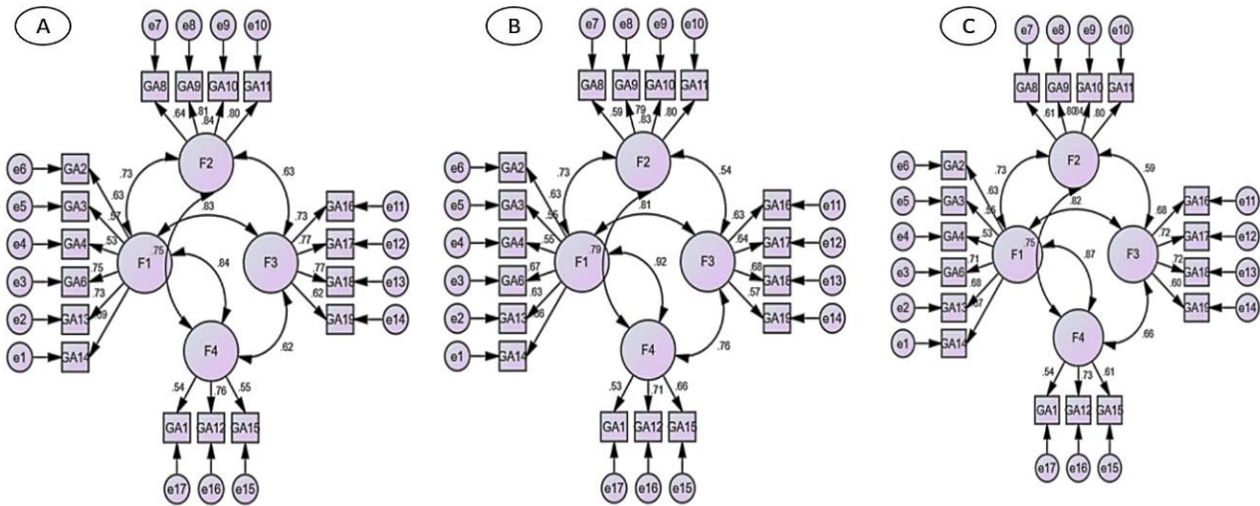
Figure 2. Hypothetical models with 4 factors tested A: Chile, B: Ecuador, and C: Whole sample

In the results of these factor analyses, it was found that the proposed models have an acceptable level of fit in the two countries and with the total sample. In Chile $x^2(113) = 577.04$, $p = < 0.001$, CFI = 0.91, $SRMR = 0.05$, $RMSEA = 0.07$ (0.07 - 0.08). In Ecuador, the parameters $x^2(113) = 560.85$, $p = < 0.001$, $SRMR = 0.04$, $CFI = 0.91$, $RMSEA = 0.07$ (0.06 - 0.07) were obtained. With the whole sample, $x^2(113) = 960.07$, $p = < 0.001$, $SRMR = 0.04$, $CFI = 0.92$, $RMSEA = 0.07$ (0.06 - 0.07).

Subsequently, a 3-factor confirmatory model was proposed in order to analyze the goodness-of-fit of the learning management model without the scale of perception of academic performance, which was the factor that registered the lowest value in the internal consistency analysis. Figure 2 shows the proposed model.
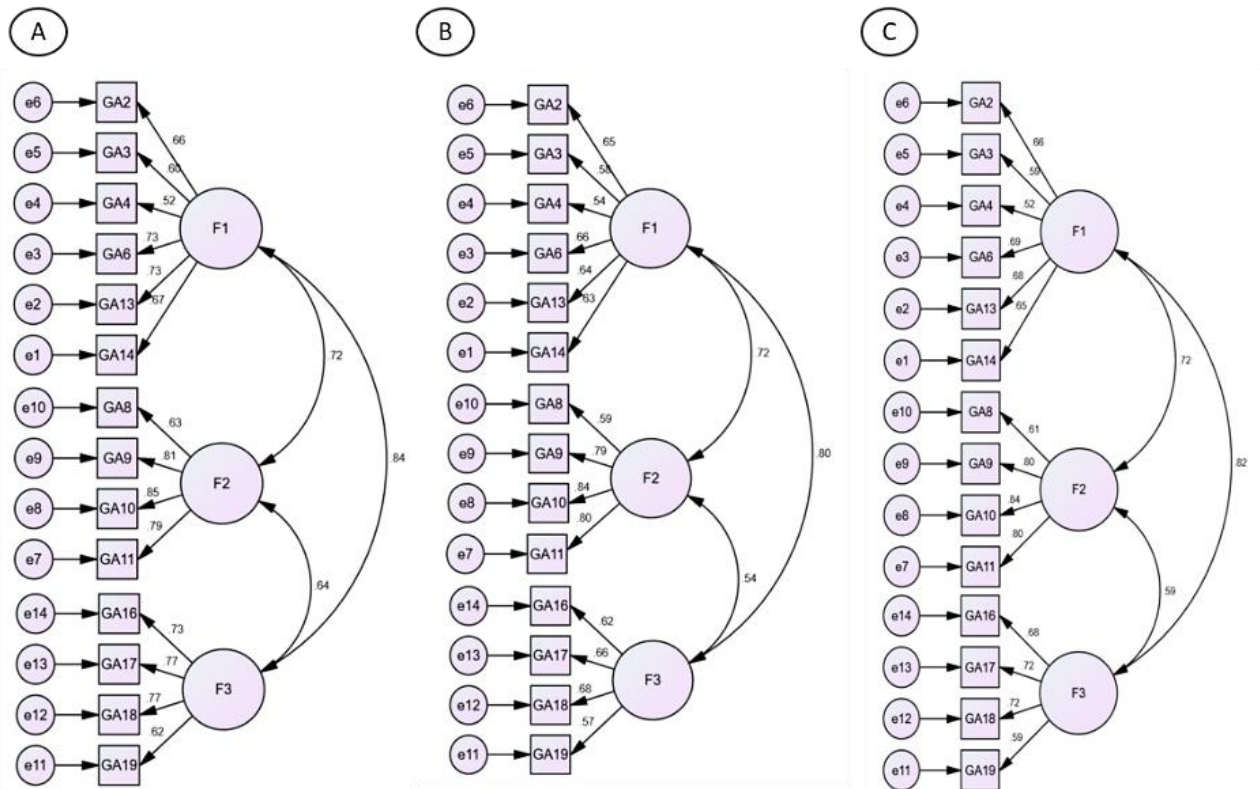

Figure 3. Hypothetical models with 3 factors tested A: Chile, B: Ecuador, and C: Whole sample

In the executed analysis, it was found that the comparative and absolute fit indices improve when the model is configured with three factors. In Chile, the results were $x^2(74) = 391.16$, $p = < 0.001$, $SRMR = 0.04$, $CFI = 0.93$, $RMSEA = 0.07$ (0.07 - 0.08). In Ecuador, $x^2(74) = 362.56$, $p = < 0.001$, $SRMR = 0.04$, $CFI = 0.93$, $RMSEA = 0.07$ (0.06 - 0.07). And in the whole sample, $x^2(74) = 566.53$, $p = < 0.001$, $SRMR = 0.04$, $CFI = 0.94$, $RMSEA = 0.06$ (0.06 - 0.07).

Once it was identified that the proposed model would have a better fit with the three factors previously indicated, a second-order factorial model was hypothesized, where a general learning management factor houses the three proposed factors. Figure 4 shows the proposed models.
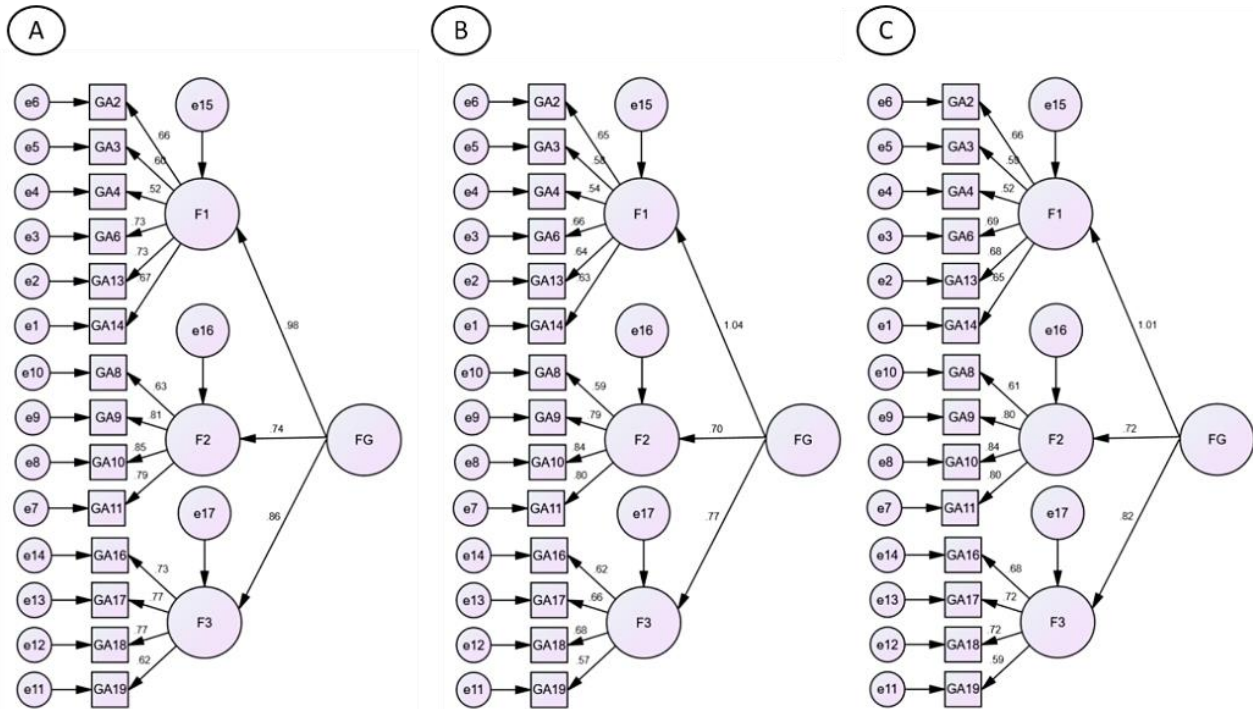

Figure 4. Hypothetical models of the 3 main factors: self-management of learning, conscious motivation strategies for learning and techniques for deep learning, and 1 second-order factor of university learning management. A: Chile, B: Ecuador, and C: Whole sample.

In the results, it was found that the second-order model presents good indicators, similar to the first-order three-factor model. The results in Chile were $x^2_{(74)} = 391.16$, $p = < 0.001$, $SRMR = 0.04$, $CFI = 0.93$, $RMSEA = 0.07$ (0.07 - 0.08). In Ecuador, $x^2_{(74)} = 362.56$, $p = < 0.001$, $SRMR = 0.04$, $CFI = 0.93$, $RMSEA = .07$ (.06 - .07). And in the whole sample, $x^2_{(74)} = 566.53$, $p = < 0.001$, $SRMR = 0.04$, $CFI = 0.94$, $RMSEA = 0.06$ (0.06 - 0.07). Having found adequate goodness-of-fit values for the 3 and 4-factor models, it can be concluded that the results provide significant empirical evidence of validity in favor of our fifth research hypothesis.

5- Discussion and Conclusion

In this research, it was found that the GAEU-1 scale presents adequate psychometric properties. These results are related to other studies that have assessed the psychometric properties of similar scales, for example, Mendoza and Yan [26], Zhang & Li [23], Curione et al. [21], and Garrido-Hornos [22], who have reported internal consistency values in favor of scales that measure self-management learning strategies such as those described in this study. For example, Cronbach's alpha values in the aforementioned research have found ranges between $\alpha = 0.65$ to 0.87, which are concordant with the results we have found in the present research.

Subsequently, the study identified statistically significant differences in the scores obtained in the four factors of the GAEU-1 scale according to the countries investigated (Chile and Ecuador), with participants from Chile having higher scores. These results make sense with what was reported by Bonilla-Verdesoto [27], who states that there are differences in the regulation and supervision of higher education quality in the different contexts of Latin America, Chile being one of the most developed in this subject due to its high systems of educational quality, assurance, and supervision.

Regarding the perception of academic performance, a statistically significant relationship is observed within the variable age of the participants, indicating that the older the participant, the higher their score in this factor. This result would be consistent with the study of Álvarez-González & Zabaleta [28], in which it was reported that, as the years go by, people progressively develop greater autonomy, which contributes to a better awareness of their own performance in the academic environment.

Previous research has reported that women use more learning strategies when compared to men; consequently, they show a better use of cognitive, metacognitive, and learning context control strategies [15]. It is for this reason that women in this study would present better scores in self-regulation of learning and deep learning techniques, showing themselves to be more organized when studying and regulating their time and environment more effectively.

When performing the confirmatory factor analysis of the present scale (GAEU-1), an adequate adjustment of the proposed model was obtained, which presents a contribution to our proposal of three and four first-order factors and the second-order model. These results are related to previous research, such as the reports by Sáez-Delgado et al. [25], Silva Moreira et al. [24], Young et al. [14], Garrido-Hornos [22], and Zhang and Li [23], who have found instruments that measure similar variables with goodness-of-fit similar to the one described in the present article. The findings previously described, both from previous research and the one presented in this paper, make sense with the proposal of Hair et al. [29] and Kline [30], who state that in confirmatory factor analyses, CFI values should be equal to 0.90 and RMSEA less than 0.70 to be acceptable.

As limitations of the study, it can be analyzed that the study sample belongs to specific cities in Chile and Ecuador and to an age range between 17 and 33 years of age; therefore, in future research, it is of interest to the team to conduct new studies in more cities of the two countries, as well as to extend the sampling to other contexts and age ranges in Latin America. As a future line of research, we plan to deepen the applicability of the GAEU-1 scale in other countries, considering different types of socioeconomic and geographic variables. Likewise, we are interested in developing new scales to benefit the learning process of university students, adapting the application to other age groups, or differentiating the results according to the type of educational strategy used [31–35].

6- Declarations

6-1- Author Contributions

Conceptualization, C.R-G., P.G-C., and J.C-C.; methodology, C.R-G. and N.L-M.; formal analysis, C.R-G., M.B-P., and J.C-C.; investigation, C.R-G. and M.D-V.; writing—original draft preparation, C.R-G., M.D-V., and J.C-C.; writing—review and editing, C.R-G., N.L-M., and M.B-P.; project administration, C.R-G., M.D-V., and J.C-C. All authors have read and agreed to the published version of the manuscript.

6-2- Data Availability Statement

The data presented in this study are available on request from the corresponding author.

6-3- Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

6-4- Institutional Review Board Statement

This research was approved by the Comité de Ética para la Investigación con Seres de la Pontificia Universidad Católica del Ecuador.

6-5- Informed Consent Statement

All participants provided their written consent to participate in this study.

6-6- Conflicts of Interest

The authors declare that there is no conflict of interests regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancies have been completely observed by the authors.

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Appendix I

Table A-1. Instrument applied - GAEU-1

Items Applied In Spanish	Translated Items	Factor
1. Pienso que mi rendimiento académico universitario es igual o mejor que el de mis compañeros.	I think that my academic performance is the same or better than that of my partners.	Academic performance perception.
2. Antes de comenzar a estudiar organizo los materiales necesarios (como cuadernos, libros, apuntes u otros).	Before studying, I organize the materials I will need (like notebooks, books, notes, or others).	Self-management of learning.
3. Para estudiar, busco un lugar tranquilo, iluminado y cómodo.	To study, I look for a quiet, well-illuminated and comfortable place.	Self-management of learning.
4. Dirijo mi aprendizaje de forma autónoma, sin depender de alguien que me ayude a lograrlo.	I focus my learning on an autonomous way without depending on someone to help me achieve it.	Self-management of learning.
5. Percibo que mi desempeño académico universitario es mejor de lo que reflejan las calificaciones que obtengo.	I believe that my academic performance is better than what my grades show.	Academic performance perception.
6. Cumplo con mis responsabilidades académicas universitarias de forma eficiente.	I live up to my academic university responsibilities in an efficient way.	Self-management of learning.
7. Para cumplir con mis tareas académicas universitarias me repito palabras de ánimo para motivarme.	In order to finish my academic assignments, I tell myself encouraging words to feel motivated.	Conscious learning motivation strategies.
8. Cuando tengo dificultades académicas en la universidad, me digo que soy capaz de superarlas y seguir adelante.	When I go through academic difficulties, I tell myself I'm able to overcome them and move on.	Conscious learning motivation strategies.
9. Me mantengo positivo y dispuesto para aprender.	I keep myself optimistic and willing to learn.	Conscious learning motivation strategies.
10. Me mantengo motivado para aprender porque tengo planes futuros.	I keep myself motivated to learn because I have future plans.	Conscious learning motivation strategies.
11. Veo mi futuro académico positivamente y con motivación.	I foresee my academic future positively and with motivation.	Conscious learning motivation strategies.
12. Considero que mi rendimiento académico universitario es satisfactorio.	I consider that my academic performance is satisfactory.	Academic performance perception.
13. Organizo mi tiempo para cumplir con las tareas académicas universitarias.	I organize my time to fulfill my academic university tasks.	Self-management of learning.
14. Soy capaz de encontrar soluciones a los problemas que se me presentan en el proceso de aprendizaje universitario.	I am able to find solutions to the problems that I go through during the process of learning at university.	Self-management of learning.
15. Considero que tengo capacidad para aprender todos los contenidos de las asignaturas de mi carrera.	I consider I have the ability to learn all the contents of my career's contents.	Academic performance perception.
16. Utilizo resúmenes, esquemas, mapas conceptuales, resalto ideas, hago lectura crítica y otros recursos para aprender significativamente.	I use summaries, outlines, conceptual maps; I highlight ideas, I do critical reading, and I use other resources to learn significantly.	Deep learning techniques.
17. Al finalizar cada tarea o contenido, verifico lo aprendido y lo que está pendiente por repasar.	When I finish each task or content, I verify what I learned and what I need to review.	Deep learning techniques.
18. Cuando un contenido o tema es difícil, vuelvo a repasarlo.	When the content or topic is difficult, I check it again.	Deep learning techniques.
19. Suelo investigar por mi cuenta los contenidos de las asignaturas, sin que sea una obligación hacerlo.	I am used to investigating the contents of the subjects on my own without it being an obligation.	Deep learning techniques.