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Spanish instruments for assessing academic motivation in university students: an integrative review

Instrumentos en español para evaluar la motivación académica en universitarios: revisión integradora

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Abstract: Motivation is an aspect that is related to academic performance, so it is important to study it in university students with high academic demand, such as medicine. There are various tools to establish motivation; however, not all of them are validated in the Spanish language; hence the importance of disseminating existing questionnaires with adaptation and validity to the Spanish language for the assessment of motivation in university students. For this, a search was carried out in the databases of BVS, PubMed NLM and Google Scholar. The search covered from January 2000 to August 2024, original publications validating instruments in Spanish to assess motivation in higher education students were included. Duplicated articles and articles not related to the topic were excluded. Articles that talked about motivation to decide to enter a certain career or a certain postgraduate degree were eliminated. A total of 16 articles were integrated, the country with the highest number of publications was Spain. In 12 articles, instruments were validated in another language, three validated existing Spanish versions and only one built the tool and validated it. The validated tools assess motivation from a global, contextual, and situational perspective, as well as achievement motivation, state motivation, strategies to regulate motivation, and self-regulated learning strategies. In conclusion, the existing tools in Spanish to assess motivation are limited and their use will depend on the aspect of motivation to be assessed.

Keywords: motivation; surveys; questionnaires; validation study

Resumen: La motivación es un aspecto que se relaciona con el rendimiento escolar por lo que es importante estudiarla en universitarios con alta demanda académica, como es el caso de medicina. Existen diversas herramientas para establecer la motivación; no obstante, no todas están validadas al idioma español; de ahí la relevancia de difundir los cuestionarios existentes con adaptación y validez al idioma español para la valoración de motivación en universitarios. Para esto, se realizó una búsqueda en las bases de datos de BVS, PubMed NLM y Google académico. La búsqueda abordó de enero del 2000 a agosto del 2024, se incluyeron publicaciones originales de validación de instrumentos al español para evaluar la motivación en estudiantes de nivel superior. Se excluyeron artículos duplicados y no relacionados con el tema. Se eliminaron los artículos que hablaran de motivación para decidir ingresar a estudiar cierta carrera o cierto posgrado. Se integraron en total 16 artículos, el país con mayor número de publicaciones fue España. En 12 artículos validaron al español instrumentos en otro idioma, tres validaron versiones en español existentes y solo uno construyo la herramienta y validó. Las herramientas validadas valoran la motivación desde el aspecto global, contextual, situacional, la motivación al logro, la motivación estado, las estrategias para regular la motivación y las estrategias de aprendizaje autorregulado. En conclusión, las herramientas existentes en idioma español para valorar la motivación son limitadas y su uso dependerá del aspecto de la motivación que se desea evaluar.

Palabras clave: motivación; encuestas; cuestionarios; estudio de validación

1. Introduction

Educational institutions must know their students in order to improve the different areas that can influence adequate academic performance and personal development (1). One of the aspects to identify is the motivation for learning, relevant in such demanding degrees as Medicine, where the further the degree progresses, the higher the academic demands, which can affect the mental and emotional health of students (2–4); students of careers with high demand need to be motivated to continue in this training and not desert.

Motivation is related to the aspect of internal or external energy, which denotes strength, intensity and persistence of a behavior; but it also involves the intrinsic or extrinsic direction of the behavior to achieve the goal. The self-determination theory states that the human being has an innate desire to learn from birth and this is influenced by the context in which he or she develops; this theory presents motivation as a hierarchical structure with three levels of generalization: global, contextual and situational (5). The global level is the general orientation of the person, it is stable in nature and is related to the personality. The contextual level tells us about specific spheres such as education, recreation, work, among others, where social factors have an influence. The situational level refers to specific moments in time that are unrepeatable, such as meetings, interviews, opportunities, and so on. These three levels interact with each other and are constituted by the basic psychological needs of competence, autonomy and connection; based on the satisfaction of these needs, we find intrinsic motivation (IM), extrinsic motivation (EM) and amotivation (A) (6).

In MI, the student performs activities for the pleasure derived from performing the action, with no external rewards or environmental control being necessary to carry them out. ME is related to behaviors performed as a means to an end, in which the student obtains a reward or avoids a punishment. A is the behaviors not regulated by students, who experience a feeling of lack of purpose or goal. The type of result will depend on the dominant type of motivation (7). Various studies show the association of motivation with various aspects, such as resilience, creativity, empathy, perseverance, psychological well-being and academic performance (8–10); and how innovative learning strategies, gamification and counseling can directly affect motivation (10–12). In addition, motivation is one of the main psychosocial factors to take into account when addressing and establishing the profile of the university student, because it allows for interventions in their training; it is motivation, which will partly determine the result in their professional training (13). In a systematic review, 66 articles were identified between 2009 and 2019 to assess motivation in university students. This production of articles is increasing and the questionnaires used are variable (14).

A large part of the motivation assessment scales were constructed and validated in a language other than Spanish, so this article aims to disseminate the questionnaires used in the assessment of motivation in undergraduate students with adaptation and validity in the Spanish language.

2. Methods

This research did not require approval by an ethics committee, since it corresponds to a systematic review of the published literature. To ensure the quality of the articles, they were selected from indexed journals; likewise, in each of the articles it was assessed that the process of translation into Spanish was described or, where appropriate, the elaboration of the reagents by experts in the subject, the validation process of the tool was described and the values of the statistical measure used to evaluate internal reliability were presented. In this review, a search was carried out in the databases of VHL (Virtual Health Library), PubMed NLM (National Library of Medicine of the United States) and Google Scholar. The search covered the period from January 2000 to August 30, 2024. The Health Sciences Descriptors (DeCS) and Medical Subject Headings (MeSH) used in BVS and NLM were: questionnaire, survey, motivation, expectation, incentive, college student, medical student, medical school, validation, and students.

Search strategies used: BVS ((Questionnaire OR Surveys OR Test) and (Motivation OR Expectation OR Incentive) AND (College Student OR Medical student OR Schools Medical OR Students, Medical) and (validation)). In PubMed NLM, observational, free full text and full text studies were selected with the following terms ((validation) AND (Questionnaire OR Surveys) and

(Motivation OR Expectation) AND (College Student OR Medical student OR Schools Medical OR Students, Medical)) ; In addition, the general search was carried out with "validation of motivation questionnaire in students" , "validation of motivation questionnaire in university" and "validation of motivation questionnaire". In Google Scholar, the strategy was to use the advanced search and include all the words in the title of "motivation survey validation", in the title and text of the article "Validation in Spanish" + "survey" + "academic motivation", "Validation in Spanish" + "scale" + "academic motivation" and "Validation of motivation questionnaire in university students site:redalyc.org", the latter was carried out because the number of articles in Redalyc was 447,379 ; therefore, to make the strategy efficient, Google Scholar's advanced search was used.

Original publications validating instruments to assess motivation in Spanish-speaking college students were included. Duplicated articles, articles on motivation to exercise or learn a language, and articles not related to the topic were excluded. Articles on motivation to enroll in a certain degree or graduate degree were eliminated. Two researchers selected the articles and discrepancies were resolved by a third researcher. Data extraction from the selected articles was performed separately by two researchers; concentrating on an Excel instrument containing: title, year of publication, original name of the validated tool, name of the tool that emerged, country, sample size and degree, objective, procedures performed to translate and contextualize the tool, number of items, and internal consistency. The information was integrated, synthesized, and analyzed through a critical appraisal. The primary result was the final database.

3. Results

13 articles were obtained from BVS, 95 articles from PubMed NLM and 1015 articles from Google Scholar. 42 duplicate articles and 1060 articles were excluded for not being related to the topic. A total of 21 articles were included, 3 items were eliminated for validation at another educational level, 1 for motivation to enter postgraduate studies and 1 for being motivation to publish. 16 articles were integrated into the analysis database of this study.

On average, 1.2 articles were published per year on the validation and adaptation into Spanish of scales to assess motivation. The country with the highest number of publications was Spain with five, followed by Argentina with three, Mexico and Colombia with two, and the rest of the countries with one publication. Seven reported that undergraduate degrees or courses made up the sample of university students. Of the 16 articles evaluated, one of them involved the construction and design of the tool for its subsequent validation, in three the tool had been previously validated into Spanish, in two a direct translation from English to Spanish was carried out, and in ten a reverse translation was used. In nine investigations, a pilot study was carried out prior to the application of the tool to the total sample.

The validated questionnaires address motivation from a global (19), contextual (15-16, 18, 20, 23-24, 28-30) and situational (17, 26) perspective. Others address specific aspects, such as achievement motivation in which the student wants to obtain something (21-22), state motivation in which an external agent predisposes the student to acquire a behavior (27) and others on strategies to regulate motivation (25). The questionnaire with the highest number of validations was the "Motivated Strategies for Learning Questionnaire (MSLQ)" present in five articles, which integrates motivation and self-regulated learning strategies (Table 1).

In the validation into Spanish of the Global Motivation Scale (GMS), students from the University of Las Palmas de Gran Canaria, Spain, participated. The GMS is composed of 28 items, which are integrated into seven subscales of four items each, with a Likert-type response from 1 (does not correspond at all) to 7 (corresponds completely). The approximate time to answer this self-administered tool is 10 minutes. The internal consistency of the seven subscales of the EMG has a Cronbach's alpha of 0.70 to 0.90. This scale assesses the global level of motivation, which is related to the personality of the university student (19). Nuñez-Alonso et al. validated the Educational Motivation Scale (EME) in students from the University of Las Palmas de Gran Canaria. The internal consistency of the seven subscales had a Cronbach's alpha of 0.76 to 0.84, except for identified regulation where the value was 0.67. They assessed temporal stability by applying the instrument twice, with a period of seven weeks. The pretest results ranged from 0.72 to 0.89,

posttest from 0.82 to 0.92, and test-retest from 0.69 to 0.87. In this validation, the temporality of the instrument was evaluated, obtaining an acceptable internal consistency (15). This same scale was validated in Paraguay, where a Cronbach's alpha of 0.72 to 0.79 was reported in the subscales, except for identified regulation where 0.68 was obtained (16).

The Academic Motivation Scale (AMS) was validated in Spanish in Argentina. The scale consists of 27 statements with a four-point Likert-type response (1 "totally disagree", 2 "disagree", 3 "agree", and 4 "totally agree"). In the validation in university students, there was a Cronbach alpha of 0.60 to 0.81 and ordinal alphas between 0.59 and 0.82 in all dimensions (18). In Peru, the short version of 14 statements was validated, Cronbach alpha and McDonald's Omega were calculated, in which the lowest value was introjected regulation (30).

The Situational Motivation Scale (EMS) validated in Spain has 14 items; the internal consistency was from 0.81 to 0.87 (17). Meanwhile, in Argentina a new Academic Situational Motivation Scale was constructed and validated, containing 27 items and presenting ordinal alpha coefficients from 0.84 to 0.95; one of the advantages of this last scale is that it was constructed for the educational field, compared to the Situational Motivation Scale, which can be applied to any situation (26).

In the scales that assess achievement motivation, we find the AGQ-R (Achievement Goal Questionnaire-Revised) instrument, its validation was in university students from 10 faculties of the National University of Córdoba and the application of the instrument was online. It had a Cronbach alpha of 0.81 to 0.98 (21). Another instrument focused on achievement is the short Monolini scale with 23 items, validated in Mexican university students, it has a maximum score of 92 and a minimum of 23; the Cronbach alpha was 0.85 and by dimension between 0.61 and 0.86. An advantage of this scale is to be able to classify motivation by levels, low with 24 to 64, medium from 65 to 77 and high from 78 to 92 points (22).

The State Motivation Scale, validated in Spain, presents 12 bipolar statements, the student indicates how he/she feels in class with levels from 1 to 7, the closer the number is to the adjective, the greater the certainty in the evaluation of his/her feelings (27). Cronbach's alpha was 0.96 and McDonald's omega was 0.97. In the study of the validation in Spanish, it was identified that state motivation correlates positively with teaching credibility and with its three subscales (27).

There are also scales that measure motivation and the strategies used by the student to increase this motivation, which is called self-regulation of motivation. In Colombia, the instrument "Self-Regulation of Motivation Strategies Questionnaire" was validated and applied in electronic format. It contained 22 items, concentrated in five factors: regulation of the value of the task (five items), regulation of performance goals (five items), self-consequences (five items), environmental structuring (three items) and regulation of situational interest (four items); they presented a Cronbach alpha of 0.75 to 0.88, this tool can be used in subjects with high levels of school dropout and applied online (25).

There are other questionnaires such as the Motivated Strategies for Learning Questionnaire (MSLQ), which is made up of a motivation section and a learning strategies section; it has been validated in Spanish in Spain, Uruguay, Colombia, Chile and Mexico. In Spain it was validated with a Cronbach's alpha of 0.90 for motivation and 0.92 for learning strategies; obtaining a questionnaire with 66 items and an average response time of 26 minutes (28). In Uruguay, a 37-item version was validated, obtaining a Cronbach's alpha of 0.76 for motivation and 0.75 for self-regulated learning (23). In Colombia, a 37-item version was obtained; a Cronbach's alpha of 0.88 was identified for the total scale, in learning strategies it was 0.92 and in motivation it was 0.57 (29). In Mexico, it was validated under the name of Motivation and Learning Strategies Questionnaire (CMEA), it consists of 31 items on motivation and 44 items on learning strategies, graduates from the Autonomous University of Yucatan participated and the average response time was 20 minutes; the global Cronbach alpha values were 0.88 (20). In Chile, the tool was validated with 73 items contained in nine factors; the internal consistency presented a Cronbach alpha of 0.64 to 0.87 (24).

4. Discussion

School dropout in higher education is 20% in the first semester and increases to 50% in the last semester of studies; the factors of this phenomenon are varied, one of them being the student's motivation; hence the relevance of studying motivation at each of its levels; in 2018, a total of 32 articles related to motivation in students were published, a quarter of the articles were carried out in Spanish-speaking countries, where Spain predominated with the highest number of research on motivation. In order to assess motivation, it is necessary to have contextualized and validated tools in the Spanish language of the different Spanish-speaking countries (14, 31).

There are several scales to assess motivation in higher education students. In this review we included 16 publications, where the main characteristics of each of the contextualized and validated scales in Spanish were described. Some of these scales are not specific to identify academic motivation and can be affected by the other contexts in which the person develops; like the GMS, this has an approach to all areas of the student. The GMS scale is available in French with 28 items, with a Cronbach alpha of 0.75 to 0.91 (32), which was higher than the values obtained in the validation of the Spanish version (19). This scale can be useful to apply at the beginning of the degree, because it assesses motivation at a trait level, which is more stable, long-lasting, is associated with personality characteristics, tends to be constant over time and is little influenced by contextual factors or situations. Therefore, this scale would be useful to predict the student's performance throughout the university career and to identify those with low overall motivation, with the aim of carrying out psychological counseling interventions covering the various areas of life, not only school. In research, this scale has been used to associate motivation with other predictors of academic success or failure such as self-leadership and psychological resilience; in addition, the GMS can be applied in cohort studies, with the aim of monitoring the performance shown by the student upon entering the degree and the result at the end of it; its main limitation is that it does not address only the educational context in motivation; but the totality of the student's contexts (33-34).

Among the scales that determine educational motivation, we find the EME and AMS. The EME was validated in French in 1989 at the University of Quebec in Montreal, Canada and is still in use. It is made up of 28 statements, answered on a 7-point scale, ranging from 1 "I do not agree at all" to 7 "I agree exactly". In its French version, internal consistency reached Cronbach's alpha of 0.80 and in temporal stability a test-retest correlation of 0.75 (35); internal consistency was similar to that reported by Nuñez-Alonso et al., in the validation in university students from Spain and Paraguay with Cronbach's alpha of 0.72 to 0.89; the subscale with the lowest Cronbach's alpha value was the identified regulation subscale (15-16). The AMS arises when translating the EME from French to English by Vallerand et al.; university students from Canada participated and the alpha values were from 0.76 to 0.86, except in the identified regulation subscale which was 0.60 (36). Cokley and Fairchild also validated it in English, but in university students from the United States of America, maintaining similar values. in Cronbach's alpha from 0.70 to 0.90 (37-38). The extended and brief versions validated in Spanish had Cronbach's alpha values between 0.60 and 0.91, which shows an internal consistency similar to the versions validated in English (18,30). Both scales were developed to specifically assess motivation in the educational context; that is, they are contextual motivation scales, which is less stable over time compared to global motivation; however, they are valid to administer periodically throughout the degree and associate with the academic performance shown during training. They can be used in analytical cross-sectional research to establish their association with other variables of academic impact (35-38).

The EMS was validated in French Canadian university students; it contains 16 items, with a 7-point Likert-type response, where 1 (does not correspond at all or does not agree at all) and 7 (corresponds exactly or completely agrees); with Cronbach alpha values from 0.77 to 0.95 (39). In the validation to Spanish, two items were eliminated, leaving 14 items and improving the Cronbach alpha values (17). These types of scales are situational, they allow to identify why an individual gets involved in a specific activity at a given time. Motivation at this level is unstable because the environmental factors that the person experiences influence it; that is why they are useful to assess motivation in educational institutions, when there are extraordinary events such as the COVID-19

pandemic or natural disasters, to assess whether it affected students and to carry out strategies to improve the aspect of resilience (40).

It is also important to assess state motivation, which refers to how the university student feels in a given class. In the research carried out by Christophel D. in 1990, the State Motivation Scale was used, which was validated and used to establish the association of student motivation with the behaviors shown by teachers in the classroom; identifying that motivation was significantly related to learning. The internal consistency of this instrument in the original version and in the validation in Spanish was the same with a Cronbach alpha of 0.96 (27,41). State motivation scales assess aspects that influence student motivation, such as teachers, educational strategies used and educational material, among other things. The advantage of these surveys is their use to assess each of the subjects in which the student develops and to identify those in which he or she is not motivated, with the purpose of reviewing the teaching process and restructuring it with other strategies to influence student motivation in that subject. Just as situational motivation instruments only measure motivation at one time and in a group with certain conditions, the results cannot therefore be generalised to other students. They would be useful in cross-sectional research, in quasi-experimental studies where students are exposed to some educational intervention and its impact on motivation is assessed, and in case-control studies where there are those exposed and not exposed to a certain educational strategy, technique or tool to measure its impact on motivation (40-41).

Other types of instruments assess achievement motivation, which is the drive to excel in relation to a criterion of excellence or achieving success, such as the Monolini tool built by Berridi in 2001, and where the original version has a focus on children's groups. This tool has 37 distributed items: work (7 items), mastery (10 items), competence (11 items), disinterest (5 items) and failure (4 items), with Likert-type responses; the original version had a Cronbach's coefficient of 0.85; while the version validated in Mexico has 23 items and a global Cronbach's alpha of 0.85 (42). Another questionnaire with an achievement focus is the AGQ-R, which contains 12 items concentrated in four goal subscales: mastery approach, mastery avoidance, performance approach and performance avoidance, and the internal consistency in the original version was 0.84, 0.88, 0.92 and 0.94 in each subscale; in the version validated in Spanish, the mastery approach goal presented a lower Cronbach's alpha, the rest had higher values than the original version (21.43). An advantage of the AGQ-R is that it predicts the performance and achievement of students, because the avoidance domains are related to performance in exams and the approach domains are positive predictors of learning performance. These tools can be predictors of the academic grades to be obtained by students throughout and at the end of university education; but they are also appropriate to assess the achievement of goals in graduates such as job placement. Its application would be in cohort studies, where the association of achievement motivation with professional success is studied (44).

Assessing motivation is important, but so is identifying strategies to motivate oneself towards learning, especially in undergraduate programs with a high demand for activities. The instrument evaluated by Wolters CA and Benzon MB is a reliable and valid method to evaluate six motivational regulation strategies in the university population, which defines the student's efforts to manage their own motivation to maintain consistency and perseverance in academic activities. The original version of Wolters is made up of thirty items, was validated in manual format and has six factors, unlike the validation in Colombia which was in electronic format, made up of 22 items and has five factors. The internal consistency of the original version was: value regulation 0.91, performance goal regulation 0.84, self-consequence 0.91, environmental structuring 0.77, interest regulation 0.88 and mastery goal regulation 0.88; these Cronbach's alpha values are higher than those found in the validation carried out in Spanish in Colombian university students (25, 45). This tool assesses self-regulation of motivation, which is a key component of self-regulated learning; that is, how the university student maintains and elevates his or her motivational states and strives to achieve the task. In the educational field, it can be used to establish the association of self-regulation strategies of motivation with academic performance and school dropout in subjects; this can allow the installation of periods in academic programs to promote these self-regulation strategies through feedback, instruction, digital diary or the flipped classroom (46).

In the case of the short MSLQ, it is composed of 44 items and the long one of 81 items, its response scale is Likert type ranging from 1 to 7, where 1 corresponds to "it is not true at all about me" and 7 "very true about me" (47). The short scale of 44 items, has 22 items for motivation and another 22 for learning strategies and was validated by Pintrich and de Groot in 1990. In motivation, the Cronbach alphas were: Self-efficacy of 0.89, intrinsic value of 0.87 and anxiety of 0.75; in educational strategies: cognitive strategies of 0.83 and self-regulation of 0.74. The approximate time of application of the questionnaire is 25 minutes (48). The validations carried out in Spanish of this instrument have had lower values in the Cronbach alpha compared to the original version. In the validation carried out in Mexico, the lowest values were found in search for help and regulation of effort; in Uruguay, the lowest internal consistency was in self-efficacy; in Chile, search for help; in Spain, control beliefs; and in Colombia, time and resource management (20,23-24,28-29). This instrument is the most widely used in the literature; by 2016, the original article where the MSLQ was introduced had been cited 2228 times in Google Scholar. The advantage of this instrument is that it perceives the student as an active subject, who uses different strategies and has a variable motivation for each course (49). It can be considered to be the most complete when assessing motivation and learning strategies; the latter has a section on self-regulation to metacognition, self-regulation to effort, and resource management strategies, among others (29). The above allows its use in cross-sectional research focused on certain subjects and time periods, or in quasi-experimental studies where the impact of teaching strategies on motivation or learning strategies in students is evaluated (50).

The strength of this research is that it collects and presents eleven tools that are useful in Spanish to assess motivation in university students. This is useful for teachers and educational authorities who want to establish motivation in students in the educational centers where they work, in order to address this aspect that can affect academic performance and school dropout. These scales are useful depending on the aspect of motivation to be studied. The description of them allows the most appropriate one to be selected for what is intended to be measured. These scales can be applied before and after interventions in educational centers and assess the impact on motivation. In addition, having a scale in Spanish can be useful for other researchers with a line of research on motivation in higher education students. This article can provide guidance on existing tools based on the objective of the study.

Among the limitations of the study, we found that it included questionnaires validated in Spanish, which could exclude relevant tools available in other languages; in addition, there was a small number of publications included on motivational instruments in Spanish that followed a process for their formation and validation. A large part of the instruments described established reliability with Cronbach's alpha, instead of using McDonald's omega coefficient, which has the advantage of not requiring the correlation of errors, nor that the items present a high correlation between them, it is not related to the number of items and is useful for ordinal, binary or interval scales. Also, the publications collected do not present the questionnaire with an introduction, instructions, data from the respondent and final acknowledgment, they only contain the items and in some the possible answers; which can alter the reproducibility of the tool. Ten of the articles presented in this research have been published for more than 5 years, so it is necessary to validate these instruments at the current moment that university students live in; In addition, nine of them do not mention the degree of these university students, which would result in an unreliable instrument for other contexts where it was validated. Two of the questionnaires included in this research were validated in electronic formats for online application, in the rest the validation was carried out in printed format, which represents a limitation in the identified instruments, because currently, a large part of the researchers apply the surveys through electronic formats; also, these tools do not consider current aspects present in education and other contexts that involve the student, since the versions in the original languages were validated more than a decade ago.

This last point opens the door to carry out other studies to validate tools in the current context, where an important factor in education is information and communication technologies; or, where appropriate, to carry out research in specific university contexts. It also allows us to keep these surveys in mind, in order to build our own based on our academic environments and settings. Existing tools can be used in research where one of the variables to be studied is the student's motivation and its relationship with other aspects of academic life.

5. Conclusions

- The existing tools in Spanish for assessing motivation are limited and their use will depend on the objective or the aspect to be assessed, such as global, contextual and situational motivation; or motivation and its relationship with other aspects that influence the academic performance of students.
- Assessing motivation is an aspect that should be measured on a recurring basis in students, because it can vary based on the current school conditions and this can be useful to apply educational strategies that impact on improving motivation and indirectly on other aspects such as: academic performance and mental health of students.
- With the description of each of the tools contained in this article, the teacher or researcher can access validated tools, having the confidence that the data collected are accurate and therefore useful for making decisions that will be relevant to the academic success of the university student. However, as with any measurement instrument, it is advisable to validate it in the context in which it is used, prior to its application.

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Table 1. Scales to assess the motivation of university students.

Ref	Year	Elaborate scale	Country	Sample size and degree	Aim	Contextualization process	# Items	Internal consistency
15	2005	Educational Motivation Scale in Spanish (EME-E)	Spain	Two samples. First: 636 for validation. Second: 53 for temporal stability.	1. To translate the EME into Spanish through appropriate cross-cultural procedures. 2. To replicate the seven-factor structure of the EME through confirmatory factor analysis. 3. To assess construct validity based on correlations between the seven subscales of the Educational Motivation Scale in Spanish (EME-E). 4. To assess the reliability of the seven factors, specifically, internal consistency and temporal stability. 5. To assess gender differences based on the means obtained in each of the factors.	Cross-cultural translation. Parallel reverse translation. Evaluation by a committee of experts. Pilot test.	28	Cronbach's alpha: Amotivation 0.76 External regulation 0.80 Introjected regulation 0.84 Identified regulation 0.67 MI to knowledge 0.82 MI to achievement 0.82 MI to stimulating experiences 0.81
16	2006	Educational Motivation Scale	Paraguay	411	1. Evaluate the construct validity of the EME. 2. Evaluate internal consistency. 3. Evaluate gender differences in each of the factors.	A previously validated scale in Spanish was used. The scale was assessed by a committee of experts.	28	Cronbach's alpha: Amotivation 0.72 External regulation 0.74 Introjected regulation 0.79 Identified regulation 0.68 MI to knowledge 0.76 MI to achievement 0.73 MI to stimulating experiences 0.78

17	2009	Situational Motivation Scale	Spain	373	1. Translate the SIMS into Spanish using appropriate cross-cultural procedures. 2. Analyze its construct validity. 3. Analyze its concurrent validity. 4. Analyze its discriminant validity based on gender. 5. Analyze its predictive validity.	Cross-cultural translation. Parallel back-translation. Evaluation by a committee of experts. The concurrent validity of the EMSI was evaluated with the Spanish version of the "Educational Motivation Scale."	14	Cronbach's alpha: Amotivation 0.81 External regulation 0.87 Identified regulation 0.82 Intrinsic motivation 0.84
18	2012	Academic Motivation Scale (EMA)	Argentina	393 secondary school students and 330 university students	To make available to researchers and practitioners two versions of the AMS that guarantee the standards of reliability and validity typically required for all measures.	Parallel reverse translation. Each educational level had a version. Pilot test. Evaluation by committee of experts.	27	Cronbach's alpha: Amotivation 0.77 External regulation 0.77 Introjected regulation 0.61 Identified regulation 0.62 MI to knowledge 0.80 MI to achievement 0.78 MI to stimulating experiences 0.71

19	2013	Global Motivation Scale	Spain	237	1. To determine the construct validity of the Spanish version of the EMG. 2. To test the presence of associations based on self-determination theory by analyzing the correlations between the seven subscales. 3. To evaluate the internal consistency of the seven EMG subscales.	Parallel reverse translation. Evaluation by a committee of experts. Content validity.	28	Cronbach's alpha: Amotivation 0.79 External regulation 0.72 Introjected regulation 0.80 Identified regulation 0.72 MI to knowledge 0.90 MI to achievement 0.70 MI to stimulating experiences 0.80
20	2013	Motivation and Learning Strategies Questionnaire (CMEA)	Mexico	1140. Exact sciences and engineering, social sciences and humanities, health sciences, economic-administrative and habitat design.	Translate, adapt and validate the MSLQ to the Mexican educational context	Parallel reverse translation. Evaluation by a committee of experts. Content validity. Pilot test.	40	Cronbach's alpha Global motivation 0.88 Intrinsic goal orientation 0.65 Extrinsic goal orientation 0.65 Task value 0.87 Control beliefs 0.52 Learning self-efficacy 0.85 Test anxiety 0.88 Learning strategies Global 0.90 Repetition 0.71 Elaboration 0.72 Organization 0.72 Critical thinking 0.76 Metacognitive self-regulation 0.77 Time and environmental management 0.65 Effort regulation 0.48 Peer learning 0.56 Help seeking 0.43

21	2015	Argentine Achievement Goals Questionnaire	Argentina	335. Various	1. To examine the factorial and dimensional structure. 2. To obtain internal consistency data for each scale. 3. To provide criterion-test evidence of a Spanish version of the AGQ-R (Elliot and Murayama, 2008) adapted in a sample of Argentine university students.	Direct translation from English to Spanish.	12	Mastery-approach goals 0.81 Mastery-avoidance goals 0.91 Performance-approach goals 0.92 Performance-avoidance goals 0.98
22	2017	Short Monolini	Mexico	198	To obtain the reliability and validity of a reduced version of the Monolini instrument in a sample of young university students.	Selection of 32 items from the 42 contained in the original tool by experts.	23	Cronbach's alpha Work and commitment 0.83 Mastery 0.86 Competence 0.83 Hope of success 0.61 Fear of failure 0.73
23	2017	Motivated Strategies for Learning Questionnaire (MSLQ-UY)	Uruguay	318. Psychology	To have a Spanish validation of the abbreviated version of this instrument for the Uruguayan context.	Reverse translation of the tool. Pilot study.	37	Cronbach's alpha Motivational component 0.76 Intrinsic value 0.83 Self-efficacy 0.63 Test anxiety 0.67 Self-regulated learning component 0.75 General learning strategies 0.71 Self-regulation 0.64

24	2018	Motivation and Learning Strategies Questionnaire (MSLQ)	Chili	409. Speech therapy, environmental engineering, nutrition and dietetics, obstetrics and childcare, and medical technology.	To explore the psychometric properties of the MSLQ in university students in a specific subject, specifically its validity based on its factorial structure, and its reliability, measured through its internal consistency.	Direct translation into Spanish of the original tool. Judgement of experts who evaluated the adequacy, wording and fidelity.	73	Cronbach's alpha: Task value 0.87 Organization 0.79 Expectations 0.83 Self-regulation 0.78 Critical thinking 0.73 Strategic learning 0.78 Time management and study environment 0.69 Anxiety 0.67 Help seeking 0.64
25	2019	Questionnaire on Self-Regulation Strategies of Motivation	Colombia	315 Engineering, economic and administrative sciences, and humanities.	To adapt the instrument designed by Wolters and Benzon and evaluate its psychometric properties (divergent and discriminant validity and internal consistency) in a sample of Colombian university students, through an exploratory factor analysis and a correspondence factor analysis.	Reverse translation of the tool. Pilot study.	22	Cronbach's alpha Task value regulation 0.84 Performance goal regulation 0.79 Self-consequences 0.88 Environmental structuring 0.75 Situational interest regulation 0.84
26	2020	Academic Situational Motivation Scale	Argentina	364	1. Develop a situational motivation scale applicable to the contingencies of university academic life . 2. Analyze its psychometric properties, evidence of content, facies, construct and concurrent validity.	Design of reagents. Content validity by experts. Pilot test for facies validity and linguistic adequacy.	27	Ordinal alpha: Extrinsic motivation: 0.84 Amotivation: 0.95 Intrinsic motivation: 0.94
27	2021	State	Spain	344.	Christophel's State Motivation Scale (1990)	Reverse	12	Cronbach's alpha

		Motivation Scale		Pedagogy, Primary Education, Psychology and Labor Relations and Human Resources	into Spanish in a sample of university students.	translation of the tool. Pilot study.		Scale 0.96 Omega McDonald Scale 0.97
28	2022	Spanish version MSLQ	Spain	428	1. To adapt the MSLQ to Spanish for Spain and validate its scoring for use with university students. 2. To assess the suitability of the MSLQ in Spanish for both men and women in order to analyse possible gender differences in SRL.	Reverse translation of the tool. Pilot study.	66	Cronbach's alpha Motivation Intrinsic goal orientation 0.71 Value given to the task 0.84 Control beliefs 0.64 Self-efficacy 0.83 Learning strategies Material organization 0.79 Deep learning 0.87 Meta-cognitive self-regulation 0.80 Time-Resource management 0.83 Peer help 0.71 Extrinsic goal orientation 0.70 Anxiety 0.75

29	2024	Motivation and Learning Strategies Questionnaire Short Form – MSLQ SF	Colombia	258 Technicians, technologists, undergraduate and graduate.	To analyze the internal structure of the Motivation and Learning Strategies Questionnaire in university students taking into account the reliability analysis and content validity.	Content validation by experts of a version previously validated in Spanish.	37	Cronbach's alpha: Elaboration 0.76 Organization 0.79 Metacognitive and behavioral self-regulation 0.79 Intrinsic orientation goals 0.70 Time and resource management 0.50 Effort self-regulation 0.76 Anxiety 0.63 Task appraisal 0.37
30	2024	Peruvian version of SAMS-S	Peru	268	To evaluate the psychometric properties of a Spanish version of the Short Academic Motivation Scale among Peruvian medical students.	Parallel reverse translation. Evaluation by expert committee. Pilot test.	14	Cronbach's Alpha: Amotivation 0.91 External Regulation 0.73 Introjected Regulation 0.67; Identified Regulation 0.72; MI to Knowledge 0.76; MI to Achievement 0.71; MI to Stimulating Exp. 0.71 McDonald's Omega: Amotivation 0.92 External Regulation 0.75 Introjected Regulation 0.69 Identified Regulation 0.72 MI to Knowledge 0.76 MI to Achievement 0.71 MI to Stimulating Exp. 0.74