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Design and validation of an instrument to measure educational inclusion in higher education institutions

Diseño y validación de un instrumento de medida de la inclusión educativa en instituciones de educación superior

Conceção e validação de um instrumento para medir a inclusão educativa em instituições de ensino superior

高等教育机构中教育包容性测量工具的设计与验证

تصميم وتقييم أداة قياس الإدماج التعليمي في مؤسسات التعليم العالي

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Abstract

Despite growing awareness of the importance of inclusive education, there are few instruments to measure it in higher education. This study analyses the psychometric quality of an instrument designed for institutions to self-assess themselves in terms of educational inclusion. An instrument is validated on a sample of 181 university students based on five dimensions: institutional culture, equitable access, student-centred learning, participation and well-being, and mobility. After testing six models by means of Confirmatory Factor Analysis, the five-factor model was chosen, plus the inclusion of the ordinal estimator ULSMV as a second-order factor, showing adequate fit values. The Average Variance Explained (AVE) has values above .5 and the composite reliability shows values between .71 and .86, indicating that the instrument has high validity and reliability. Bivariate analyses (Pearson correlation and T-Student correlation) were also carried out with the second-order factor. The results revealed statistically significant, negative and moderate intensity differences in the perception of educational inclusion according to age. In addition, those in the afternoon shift show a higher perception towards educational inclusion than those in the morning shift with a low effect size ($d=-.36$). This instrument is useful for universities to evaluate their inclusive practices, identify areas for improvement and develop counselling and guidance programmes in inclusive education.

Keywords: educational inclusion; construct validation; higher education; inclusive education; educational assessment.

Resumen

A pesar de la creciente conciencia sobre la importancia de la educación inclusiva existen pocos instrumentos para medirla en la educación superior. Este estudio analiza la calidad psicométrica de un instrumento diseñado para que las instituciones se autoevalúen en cuanto a inclusión educativa. Se valida un instrumento, en una muestra de 181 estudiantes universitarios, basado en cinco dimensiones: cultura institucional, acceso equitativo, aprendizaje centrado en el alumnado, la participación y el bienestar y la movilidad. Tras probar seis modelos mediante Análisis Factorial Confirmatorio, se optó por el modelo de cinco factores, más la inclusión como factor de segundo orden, mediante el estimador ordinal ULSMV, mostrando unos valores de ajuste adecuados. Por su parte, la Average Variance Explained (AVE) ha tomado valores por encima de .5 y la fiabilidad compuesta muestra valores entre .71 a .86; indicando que el instrumento tiene una alta validez y fiabilidad. Asimismo, se han llevado a cabo análisis bivariados (correlación Pearson y T-Student) con el factor de segundo orden. Los resultados revelaron diferencias estadísticamente significativas, negativas y con una intensidad moderada en la percepción de la inclusión educativa en función de la edad. Además, aquellos del turno de tarde muestran una mayor percepción hacia la inclusión educativa que los del turno de mañana con un tamaño del efecto bajo ($d=-.36$). Este instrumento es útil para que las universidades evalúen sus prácticas inclusivas, identifiquen áreas de mejora y desarrollen programas de asesoramiento y orientación en educación inclusiva.

Palabras clave: inclusión educativa; validación de constructo; educación superior; educación inclusiva; evaluación educativa.

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Resumo

Apesar da crescente consciencialização para a importância da educação inclusiva, existem poucos instrumentos para a medir no ensino superior. Este estudo analisa a qualidade psicométrica de um instrumento concebido para as instituições se autoavaliarem em termos de inclusão educativa. Um instrumento é validado, numa amostra de 181 estudantes universitários, com base em cinco dimensões: cultura institucional, acesso equitativo, aprendizagem centrada nos estudantes, participação, e bem-estar e mobilidade. Após testar seis modelos pela Análise Fatorial Confirmatória, optou-se pelo modelo de cinco fatores, mais a inclusão como fator de segunda ordem, utilizando o estimador ordinal ULSMV, apresentando valores de ajuste adequados ($X^2/gl=1.211$; $CFI=.952$; $TLI=.943$; $RMSEA=.045$). A Average Variance Explained (AVE) recolheu valores superiores a .5 e a fiabilidade composta apresenta valores entre .71 e .86, indicando que o instrumento tem uma validade e fiabilidade elevadas. Foram igualmente realizadas análises bivariadas (correlação de Pearson e T-Student) com o fator de segunda ordem. Os resultados revelaram diferenças estatisticamente significativas, negativas e com uma intensidade moderada na percepção da inclusão educativa em função da idade. Além disso, os trabalhadores do turno da tarde mostram uma percepção mais elevada da inclusão educativa do que os do turno da manhã, com um tamanho de efeito baixo ($d=-.36$). Este instrumento é útil para as universidades avaliarem as suas práticas inclusivas, identificarem áreas a melhorar e desenvolverem programas de assessoria e orientação em matéria de educação inclusiva.

Palavras-chave: inclusão educativa; validação de constructo; ensino superior; educação inclusiva, avaliação educativa

摘要

尽管学界对教育包容性重要性的认识不断提升，但在高等教育领域，用于测量教育包容性的工具仍然相对匮乏。本研究分析了一项用于高等教育机构开展教育包容性自我评估的测量工具的心理测量学质量。该工具在 181 名大学生样本中进行了验证，基于五个维度构建：制度文化、公平获取、以学生为中心的学习、参与与福祉以及流动性。通过验证性因素分析共检验了六种模型，最终采用包含五个一阶因子并将包容性作为二阶因子的模型，使用有序数据的 ULSMV 估计方法，模型拟合指标良好 ($\chi^2/gl = 1.211$; $CFI = .952$; $TLI = .943$; $RMSEA = .045$)。此外，平均方差提取量 (AVE) 均高于 .5，组合信度介于 0.71 至 0.86 之间，表明该工具具有较高的效度与信度。同时，研究还针对二阶因子开展了双变量分析 (Pearson 相关与 t 检验)。结果显示，不同年龄群体在教育包容性感知上存在统计显著的负向差异，效应强度为中等。此外，晚间学习时段的学生相比上午时段学生对教育包容性的感知更高，但效应量较低 ($d = -.36$)。该测量工具有助于高校评估其包容性实践、识别改进领域，并制定教育包容性相关的咨询与指导方案。

关键词: 教育包容性；结构效度；高等教育；包容性教育；教育评估

ملخص

على الرغم من الوعي المتزايد بأهمية التعليم الشامل، لا توجد سوى أدوات قليلة لقياسه في التعليم العالي. تحلل هذه الدراسة الجودة النفسية لأداة مصممة للمؤسسات لتقييم نفسها فيما يتعلق بالشمول التعليمي. تم التحقق من صحة الأداة، في عينة من 181 طالباً جامعياً، استناداً إلى خمسة أبعاد: الثقافة المؤسسية، والوصول العادل، والتعلم المتمركز حول الطالب، والمشاركة والرفاهية، والتنقل. بعد اختبار ستة نماذج باستخدام التحليل العاملي التأكيدي، تم اختيار نموذج الخمسة عوامل، بالإضافة إلى الشمولية كعامل ($X^2/gl=1.211$; $CFI=.952$; $TLI=.943$; $RMSEA=.045$). أظهرت الموثوقية المركبة قيماً (AVE) من ناحية أخرى، اتخذ متوسط التباين المفسر. كما تم إجراء تحليلات ثنائية مع عامل الدرجة الثانية. وكشفت النتائج عن اختلافات ذات دلالة إحصائية، سلبية (T-Student ارتباط بيرسون و) المتغيرات وذات شدة معتدلة في تصور الإدماج التعليمي حسب العمر. بالإضافة إلى ذلك، أظهر طلاب الفترة المسائية تصوراً أكبر للإدماج هذا الأداة مفيدة للجامعات لتقييم ممارساتها الشاملة، وتحديد ($d=-.36$) التعليمي مقارنة بطلاب الفترة الصباحية مع تأثير منخفض مجالات التحسين، وتطوير برامج المشورة والتوجيه في مجال التعليم الشامل

الكلمات المفتاحية: الدمج التعليمي؛ التحقق من صحة البناء؛ التعليم العالي؛ التعليم الشامل، التقييم التعليمي

Introduction

The concept of educational inclusion has evolved significantly over recent decades and has become established as a key focus in universities to promote equal opportunities. The aim of this approach is to ensure that anyone, regardless of their academic, personal or social circumstances, can access, participate and progress on equal terms. Diversity among students has prompted a more active response from universities, highlighting the need to promote inclusive academic spaces that adequately respond to their needs (United Nations Educational, Scientific and Cultural Organisation [UNESCO], 2020).

Several studies have highlighted the advantages of implementing inclusive policies in universities, especially in terms of developing values such as empathy, teamwork and coexistence, which contribute to a more enriching learning experience for students (Moriña, 2017; Pacas & García-Linares, 2024). In addition, several studies show links between inclusion and variables such as academic performance (Ortiz et al., 2025), the emotional health of students with autism spectrum disorders (Villegas et al., 2014), high abilities (Barrenetxea-Mínguez & Martínez-Izaguirre, 2020) or hearing impairment (Cuello, 2014), as well as the well-being of their families (Giné et al., 2023). From this perspective, the most recent definition by UNESCO (2023) emphasises that inclusion involves removing barriers that limit participation, retention and learning.

Therefore, implementing inclusive practices at university requires reviewing institutional policies, pedagogical models and organisational cultures. To move forward in this area, it is essential to have tools that enable the accurate and systematic evaluation of inclusive practices at this stage of education,

covering factors such as physical accessibility, institutional climate and preparation for the world of work. Although there are some specific instruments for measuring components of inclusion, such as physical accessibility and inclusive pedagogical practices (Booth & Ainscow, 2000; Elizondo et al., 2023; Lombardi et al., 2011; Loreman et al., 2007; Lorenzo et al., 2024; Sabando et al., 2024; Sharma et al., 2012), these do not always cover all key areas. In this context, the proposal by Márquez et al. (2021) is particularly relevant as it establishes a series of indicators organised around five dimensions: institutional culture, equitable access, student-centred learning, participation and well-being, and mobility. This proposal, validated using the Delphi methodology, allows for an approach to inclusion based on institutional self-assessment (Table 1).

Given that university students have a wide variety of profiles (diverse cultural backgrounds, disabilities, socio-economic or linguistic differences, among others), any assessment tool must reflect this heterogeneity. Loreman et al. (2007) emphasise that cultural and institutional factors are decisive in achieving a truly inclusive environment, while Sharma et al. (2012) highlight the importance of considering the students' perceptions in the assessment processes, as they are the main beneficiaries of these policies. Therefore, to gather all the heterogeneous aspects, it is essential to develop instruments based on solid conceptual foundations that consider both visible aspects (facilities, support) and less tangible ones (perception of an inclusive climate, commitment of teaching staff, etc.). The students' own assessment of inclusive measures provides insight into how they are experienced in practice, thus combining a quantitative approach with a more experiential one.

Table 1. Indicators of educational inclusion

Dimensions	Indicators
Institutional culture	Inclusive regulatory framework Training in equity and inclusion Inclusion support services
Equitable access	Segregated enrolment rates Adapted entrance exams Accessible information Accessible spaces Accessible virtual environments Peer mentoring programme Preparatory training Early detection of support needs Work-life balance support
Student-centred learning	Inclusive teaching materials Inclusive methodologies Flexible assessment Teacher/student ratio Adapted tutoring system Availability of technical support Equitable external placements
Participation and well-being	Equitable representation University associations Participation in physical and/or sporting activities Spaces for religious participation University coexistence Non-academic support resources
Mobility and employability	Mobility programmes Employment guidance Job placement
Academic achievement	Graduation rate Dropout rate

Source: adapted from Márquez et al. (2021)

A well-designed instrument should enable a comprehensive examination of institutional policies, teaching practices and student perceptions. This will enable the development of specific actions to move towards more inclusive university models, in line with the commitments made by education systems within the framework of the 2030 Agenda (United Nations Organisation [ONU], 2015).

Based on this need, the main purpose of this study is to evaluate the psychometric properties of an instrument that allows universities to analyse their degree of inclusion. The specific objectives are:

- a. Design a concise instrument that allows for the evaluation of the context of inclusive education in higher education.
- b. Validate the instrument through a rigorous analysis of its psychometric properties.
- c. Analyse the differences in the perception of educational inclusion among different groups of students based on different contextual variables (age, gender, degree programme, year of study, and morning or afternoon shift).

Method

A validation study has been carried out on a measurement tool that allows higher education institutions to self-assess the conditions they offer their students in relation to educational inclusion, through an analysis of its reliability and validity. Cronbach's alpha internal consistency statistic was used to assess the

reliability of the tool. This test is widely used because it only requires one application of the questionnaire and assumes that all items in the questionnaire measure the same specific trait. To validate the theoretical structure of dimensions assessed by the test, confirmatory factor analysis (CFA) was applied, estimating a measurement model composed of observed variables (items) and latent factors (dimensions).

Participants

The study population consists of students enrolled at the Faculty of Education-Teacher Training Centre of the Complutense University of Madrid, a public institution. Sampling was carried out on an incidental basis, with the voluntary participation of the subjects in the study. This resulted in a final sample of 181 students.

In terms of sociodemographic characteristics, the sample includes 149 women (82.320%) and 27 men (14.917%). Students under the age of 20 represent 82% of the sample, while 18% are between 21 and 36 years old; in addition, 4% of students are 36 years old or older. The sample under study belongs to five different degree programmes: Bachelor's Degree in Social Education (16%), Double Bachelor's Degree in Early Childhood Education and Pedagogy (31%), Bachelor's Degree in Primary Education (47%), Double Bachelor's Degree in Primary Education and Pedagogy (1%) and Bachelor's Degree in Pedagogy (5%). Seventy-seven per cent are in their first year. Finally, in terms of the shift in which they are enrolled, 42% of the sample are in the morning shift, while 58% are in the afternoon shift.

Instruments

To achieve the study's objective, a system of dimensions, sub-dimensions and indicators was designed based on the contributions of prominent authors such as Ainscow (2020), Ainscow and Messiou (2018), Ainscow (2016), Alberta Education (2013), Baltaru (2022), Booth and Ainscow (2000), the European Agency for Development in Special Needs Education (2009), and Fundación Down España (2021). Márquez et al. (2021), Ryan

and Struhs (2004) and UNESCO (2017), whose theories were adapted to the university educational context, although special attention was paid to the indicators established by Márquez et al. (2021). To design an instrument that would be useful to all higher education institutions, the 'academic achievement' dimension was removed, as it was considered that it did not provide sufficient information to measure the level of self-perception regarding the inclusion of a higher education institution. Likewise, the items were developed one by one for each of the indicators, and the response scale was readjusted. The authors established different scales based on the indicators, so that to design a new consistent instrument, a 5-level measurement scale was established in this study. Therefore, an instrument consisting of 40 items was redesigned, each of which was evaluated on a Likert scale from 0 to 10 (where 0 indicates 'Nothing, never' and 10 indicates 'A lot, always'), with an overall scale ranging from 0 to 180. Multiple reference sources were considered in its development, and validation was carried out using the expert judgement technique, in which experts, lecturers and researchers from the Autonomous University of Madrid and the Complutense University of Madrid completed an online questionnaire using a Likert scale from 1 to 6 (where 1 indicates 'strongly disagree' and 6 indicates 'strongly agree') the clarity, accuracy and relevance of each of the items in the assessment questionnaire on inclusion in higher education. Subsequently, a discussion group was convened with these experts with the aim of achieving effective saturation of each dimension using as few items as possible for reasons of efficiency and practical feasibility.

The instrument therefore allows for the measurement of five broad dimensions: institutional culture, equitable access, student-centred learning, participation and well-being, and mobility and employability, whose 17 final items can be seen in the reduced instrument in Appendix I.

Procedure

First, the instrument was designed following the guidelines mentioned in the previous section. Subsequently, the instrument was administered to students at the Faculty of Education-Teacher Training Centre, ensuring the anonymity of the information and requesting informed consent, in accordance with the guidelines of the Helsinki Declaration. As this was an incidental sample, the teaching staff informed the students of the possibility of completing a questionnaire via Google Forms to gather information on their level of self-perception regarding educational inclusion in universities. Those who showed an interest in the subject of the study responded voluntarily.

Data analysis

Following an initial descriptive analysis of the responses, no irregularities were detected in

the variability and central tendency of the items. Next, the reliability of the instrument was evaluated using McDonald's omega, both for the instrument in its complete version and for each of the dimensions independently. In addition, the homogeneity indices (corrected item-total correlation) of the items were analysed to determine the possible elimination of those with values below .2, according to the recommendations of Hair et al. (2009). Subsequently, the goodness of fit of the theoretical factorial model was evaluated using Confirmatory Factor Analysis (CFA), testing a total of six models (see Table 2). This was done because Mardia's assumption of multivariate normality is not met and it is necessary to consider other types of estimates. This analysis was carried out following the criteria established by Tourón et al. (2023): CMIN/DF between 2 and 5, CFI and TLI greater than .9, RMSEA less than .08 and SMRS less than .1.

Table 2. Estimated confirmatory models

Model	Structure	Specification
M1	5 Factors	Original model. Estimation (ULSMV)
M2	5 Factors	Original model. Estimation (MLMV)
M3	1 Factor	One-dimensional model. Estimation (ULSMV)
M4	1 Factor	One-dimensional model. Estimation (MLMV)
M5	5 Factors	+ Second-order factor (Inclusion). Estimation (ULSMV)
M6	5 Factors	+ Second-order factor (Inclusion). Estimation (ULSMV)

Finally, a differential analysis was performed to determine the perception of educational inclusion among different groups of students based on different contextual variables (age, gender, degree, year of study, and morning or afternoon shift). Specifically, Spearman's correlation was used, since the assumption of normality was not met. Student's t-test was also used, as in this case the assumptions of normality and homogeneity of variances were met. For the latter technique, the effect size was evaluated using Cohen's d (1988), which considers a small size to be between $\pm.20$ and $\pm.49$, moderate between $\pm.50$

and $\pm.79$, and large from $\pm.80$ onwards. Once the relevant data were available, the database exported to the R programming language, version 4.4.2, was configured and cleaned. When performing the AFC and bivariate inferential analyses, the lavaan (Rosseel, 2012) and ggstatsplot (Patil, 2021) packages were used, respectively.

Results

Firstly, the descriptive statistics for the items are presented (see Table 3). The total mean is

5.991 (SD = 1.022); all items have scores above 5, except for I3 (*El contenido de la web de la Facultad es fácil de visualizar, leer y escuchar*) and I17 (*¿Crees que las condiciones*

que se ofrecen en los centros de prácticas se ajustan a las necesidades de todo el estudiantado?).

Table 3. Descriptive statistics for the items

Items	Mean	Median	SD	Minimum	Maximum	p
I1	7.723	8	1.865	0	10	<.001
I2	7.226	8	2.334	0	10	<.001
I3	4.994	5	2.648	0	10	<.001
I4	6.282	6	2.296	0	10	<.001
I5	5.403	5	2.540	0	10	<.001
I6	6.099	6	2.534	0	10	<.001
I7	6.193	7	2.527	0	10	<.001
I8	6.320	7	2.471	0	10	<.001
I9	5.475	6	2.952	0	10	<.001
I10	7.575	8	2.092	0	10	<.001
I11	7.022	8	2.460	0	10	<.001
I12	5.038	5	2.749	0	10	<.001
I13	5.535	5	2.529	0	10	<.001
I14	5.906	6	2.462	0	10	<.001
I15	5.602	6	2.480	0	10	<.001
I16	5.801	6	2.374	0	10	<.001
I17	3.654	5	3.248	0	10	<.001

After testing six models (see Table 4) using CFA, the five-factor model was chosen, plus the inclusion as a second-order factor, using the ordinal ULSMV estimator, showing more accurate fit values ($X^2/df=1.211$; CFI=.952; TLI=.943; RMSEA=.045). The Average Variance Explained (AVE) took values above

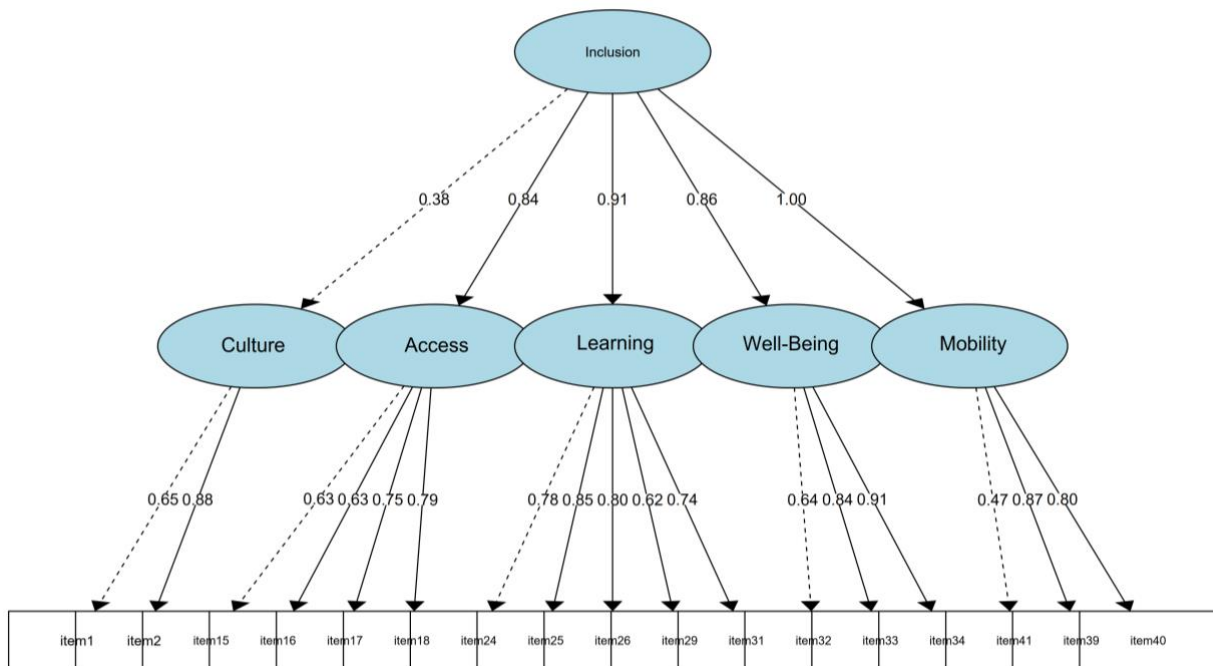
.5, and the composite reliability showed values between .71 and .86, indicating that the instrument has validity and reliability.

The model with accurate fit indices is presented below (Figure 1).

Table 4. AFC adjustment index

	M1	M2	M3	M4	M5	M6
X^2/df	1.266	1.482	2.403	1.561	1.211	7.055
RMSEA	0.051	0.067	0.115	0.073	0.045	0.066
RMSEA (LI)	0.017	0.045	0.099	0.052	0.000	0.045
RMSEA (LS)	0.074	0.087	0.130	0.092	0.070	0.086
SRMR	0.059	0.071	0.083	0.082	0.045	0.073
CFI	0.941	0.936	0.797	0.873	0.952	0.935
TLI	0.933	0.920	0.768	0.855	0.943	0.922

Figure 1. Representation of the M5

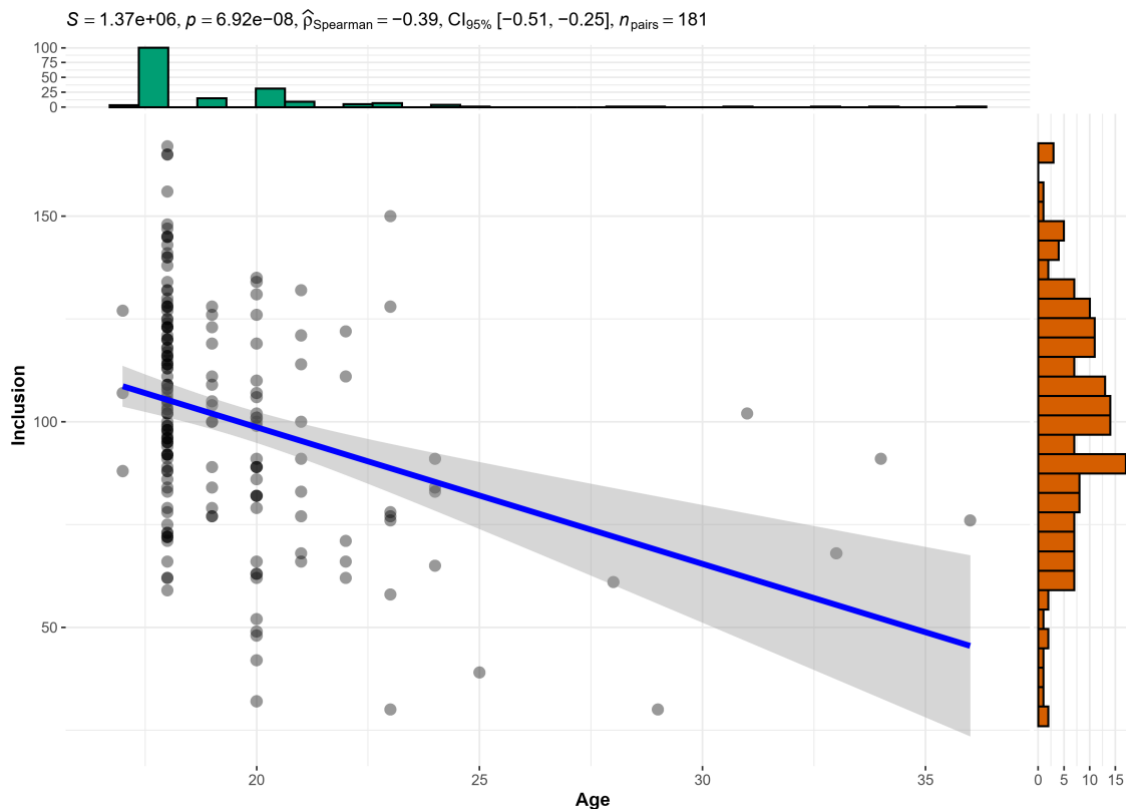


Likewise, bivariate analyses (Pearson correlation and Student's t-test) were performed with the second-order factor. Figure 2 illustrates the relationship between age and the perception of educational inclusion, with an analysis based on Spearman's correlation. The data show a moderate negative association ($\rho = -.39$) between the age variable and the perception of educational inclusion, suggesting that the latter decreases progressively as the age of the students increases. The statistical analysis shows a very low p-value ($p=6.92 \times 10^{-8} = 6.92$), confirming that the relationship is statistically significant. This suggests that the probability of this correlation occurring by chance is extremely low. Furthermore, the

95% confidence interval for Spearman's correlation (95% CI: [-.51, -.25]) shows that the true value of the correlation is negative and statistically significant.

In the graph, a blue regression line can be seen marking this downward trend, accompanied by a grey band delimiting the confidence interval of the analysis. This visually reinforces the conclusion that the perception of inclusion decreases with age. In addition, the histograms accompanying the figure show the distribution of the age and inclusion variables, suggesting that most of the data are concentrated at younger ages and higher levels of inclusion.

Figure 2. Relationship between age and perception of educational inclusion



On the contrary, no statistically significant differences were found in the perception of educational inclusion based on gender, academic qualifications or the course in which the participants were enrolled. This suggests that these variables do not have a significant influence on the perception of inclusion within the context analysed.

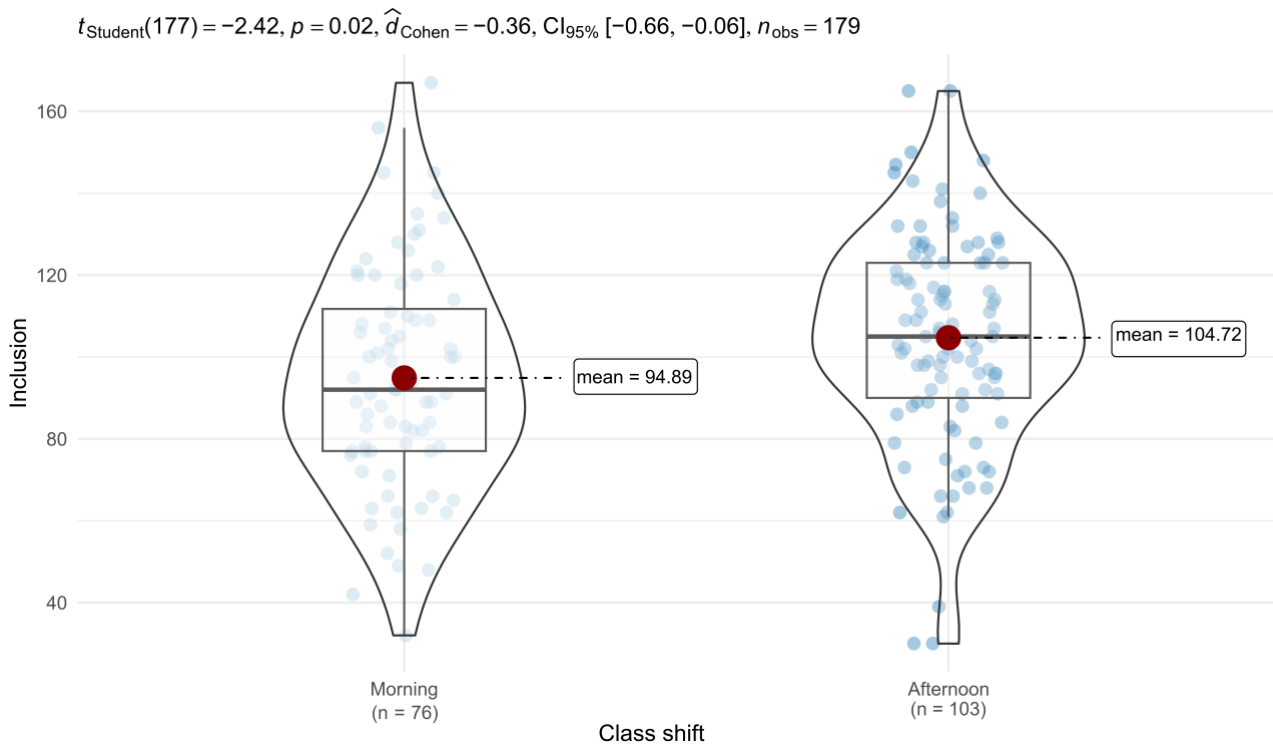
Figure 3 presents an analysis of the perception of educational inclusion based on shift (morning and afternoon), using a violin diagram that shows both the distribution of the data and the mean and dispersion.

The results reveal that afternoon shift students report a higher perception of inclusion

(mean = 104.72) compared to morning shift students (mean = 94.89). This result is statistically significant, as indicated by the Student's t -value (177) = -2.42, $p=.02$, suggesting that it is unlikely that this difference occurred by chance.

Furthermore, the effect size ($d = -.36$) indicates a low magnitude of this difference between the two shifts, which means that, although significant, the difference is not extremely large. The 95% confidence interval (95% CI: [-.66, -.06]) reinforces that the difference is real and not due to chance, although within a range of small effects.

Figure 3. Relationship between class shift and perception of educational inclusion



Discussion and conclusions

The overall purpose of this study was to examine the psychometric properties of a measurement instrument designed to assess, from the institution's own perspective, the degree of educational inclusion in the university setting. The relevance of this objective lies in the growing demand for instruments that enable universities to systematically assess their commitment to equity, beyond good intentions or formal declarations.

A first conclusion relates to the first specific objective, the design of a reduced instrument to assess the context of inclusive education in higher education; this study developed a tool that measures five key dimensions, thus providing a particular view of inclusion in the university environment. Unlike other studies that focus solely on the theoretical creation of the instrument without applying it empirically, this work includes a practical application and an analysis of its functioning in a specific sample of students. Previous literature includes various tools focused on specific aspects of inclusion, such as institutional profile (Sabando et al., 2024), general diagnosis (Elizondo et al., 2023),

digital accessibility in the university environment (Lorenzo et al., 2024) or the analysis of inclusive practices at different educational levels (Lombardi et al., 2011; Sharma et al., 2012; Loreman et al., 2007). However, few of them contemplate a comprehensive approach that encompasses different dimensions at the same time, as proposed in this case.

The second conclusion relates to the statistical validity of the tool. The analyses carried out show that the instrument has a clear and coherent structure, with adequate indices of both fit and internal reliability. These results support its relevance as an assessment resource in the university context, providing a solid empirical basis that justifies its use in identifying strengths and weaknesses in inclusive policies.

About the third objective, which aimed to explore differences between groups, significant variations were observed in the perception of inclusion according to the age of the students. Specifically, younger students expressed a more positive perception of the inclusive conditions of their academic environment. These findings are consistent with previous research that points

to a higher valuation of inclusion among younger students or those in the early years of their studies, both in university contexts (Tigrero, 2016) and at earlier levels of the education system (Kyttälä et al., 2023). Kyttälä et al. (2023) conclude that there are significant differences in the perception of inclusion among secondary school students, with it being higher in the early years of secondary education than in the later years, where it is more unfavourable. This finding has important implications, as it suggests that as students get older, they perceive less educational inclusion, which could be key to the design of policies or interventions in the field of education. At the same time, the results of this study reveal that afternoon shift students report a greater perception of inclusion compared to morning shift students. Regarding the study shift, some studies (Brunner et al. 2021; Witkowsky et al., 2016) claim that afternoon shift students tend to have a more favourable perception of inclusion than morning shift students. Some of the students in this shift, sometimes referred to as non-traditional students (they are working, have family responsibilities, etc.), have a higher level of perception of inclusion than morning shift students, as the afternoon schedule fits in with their schedules, allowing them to balance their studies with other tasks. Following the findings of the study on significant differences in the perception of inclusion, being more favourable in the afternoon shift and among younger students than in the morning shift and among older students, it is essential to design more inclusive and flexible policies, such as intergenerational mentoring policies between younger and older students, expansion of academic and psychological support services, teacher training in inclusive strategies, and any other measures that minimise these significant differences between these groups.

This study has some methodological limitations that should be considered when interpreting the results and planning further research. First, the sample consisted of 181 students from a single university, which limits the ability to generalise the findings to other institutional or geographical contexts.

Additionally, the study design was cross-sectional, meaning that data were collected at a single point in time, which prevents examination of possible changes in student perceptions over time. Furthermore, although some relevant contextual variables were included, additional variables could be included to provide a more in-depth profile of the students.

Based on these limitations, several lines of future research are proposed. One of them is to expand the sample size and include students from different faculties and universities nationwide. This expansion would allow us to verify whether the psychometric structure of the instrument remains stable in different contexts and institutional realities, which would reinforce its usefulness and applicability on a large scale. It would also be useful to design longitudinal studies to observe how students' perceptions of educational inclusion change throughout their university career. This approach would make it possible to identify critical moments, evaluate the impact of implemented policies, and adapt institutional strategies with greater precision. Another interesting line of inquiry would be to use this tool as part of the evaluation of specific programmes or plans related to inclusion in the university setting. In this way, their effects could be analysed objectively, and evidence-based good practices could be identified.

In terms of practical implications, this work makes a significant contribution to the field of inclusion in higher education. The validation of a psychometric instrument adapted to the university environment provides a robust tool for institutions to diagnose and improve their inclusive practices. This approach promotes continuous assessment that is sensitive to student diversity and capable of guiding pedagogical, organisational and policy decisions towards fairer and more accessible models.

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Appendix I

INSTRUMENTO DE MEDIDA DE LA INCLUSIÓN EDUCATIVA EN INSTITUCIONES DE EDUCACIÓN SUPERIOR

Por favor, indique los siguientes datos sobre su persona:

Sexo: Hombre Mujer

Edad: 20 años o menos Entre 21 y 36 años 36 años o más

Titulación en la que se encuentra matriculado/a:

Curso en el que se encuentra matriculado/a:

Turno en el que se encuentra matriculado/a: Turno de mañana Turno de tarde

A continuación, encontrará una serie de afirmaciones que tienen como objetivo evaluar su percepción sobre las prácticas de inclusión en su institución de educación superior. Para cada enunciado, indique en qué medida está de acuerdo en una escala de 0 a 10, donde:

0 = "Nada, nunca"

10 = "Mucho, siempre"

Seleccione el valor que mejor refleje su experiencia o percepción en relación con cada afirmación.

	0	1	2	3	4	5	6	7	8	9	10
1. Los planes de estudio de nuestra Facultad incluyen contenidos sobre equidad y/o inclusión.											
2. Existen actividades de formación complementaria (jornadas, ponencias, cursos...) que incluyen contenidos sobre equidad y/o inclusión.											
3. El contenido de la web de la Facultad es fácil de visualizar, leer y/o escuchar.											
4. Conozco el programa de voluntariado para acompañamiento a personas con diversidad.											
5. Participo o he participado en el programa de voluntariado para acompañamiento a personas con diversidad de la universidad.											
6. Estoy satisfecho/a con el programa de voluntariado para acompañamiento a personas con diversidad.											
7. El profesorado utiliza metodologías inclusivas para atender las necesidades de todo el estudiantado.											
8. El profesorado utiliza diferentes modalidades de evaluación para atender a las necesidades de todo el estudiantado.											
9. El tamaño del grupo en las clases teóricas permite al docente atender adecuadamente al estudiantado.											
10. Las tutorías permiten que el profesorado me pueda conocer y atender mis necesidades.											
11. Las actividades deportivas que se ofertan son adecuadas para todas las personas.											
12. En la Facultad existen espacios multiconfesionales que favorecen la inclusión sociocultural.											

13. Las políticas de inclusión desarrolladas permiten la participación de toda la comunidad.																				
14. Me siento incluida/o/e en la Facultad.																				
15. Los programas de movilidad se ajustan a las diversas necesidades (culturales, económicas, funcionales...) de todo el estudiantado.																				
16. La formación para el empleo y el emprendimiento es adecuada para las necesidades de todo el estudiantado.																				
17. En el caso de haber realizado las prácticas externas, las condiciones ofrecidas en los centros de prácticas se ajustan a las necesidades de todo el estudiantado.																				


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