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Adaptation of the Intellectual Experience Scale to Turkish Culture: A Validity and Reliability Study Among University Students

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Abstract

Intellectual experience is a multifaceted process involving both cognitive and emotional responses of an individual. The Intellectual Experience Scale (IES), developed by Mayer and Caruso (1989), measures this construct across three dimensions: Intellectual Pleasure, Intellectual Absorption, and Intellectual Apathy. This study aimed to adapt the IES into Turkish and evaluate its psychometric properties. Following a rigorous multi-stage translation and cultural adaptation process, the scale was refined to 34 items. The Turkish version was administered to 600 university students, and the dataset was randomly divided into two statistically independent subsamples. The first subsample (n = 300) was used for Exploratory Factor Analysis (EFA), whereas the second subsample (n = 300) was used for Confirmatory Factor Analysis (CFA). The EFA supported the original three-factor structure, with factor loadings ranging from .401 to .795, and the three factors explained 31.86% of the total variance. The CFA confirmed the adequacy of the three-factor model ($\chi^2/df = 2.04$, RMSEA = .059, CFI = .94, NNFI = .93, SRMR = .097, NFI = .89, AGFI = .82). Internal consistency coefficients were satisfactory (Cronbach's $\alpha = .870$ for Intellectual Pleasure, .834 for Intellectual Apathy, .758 for Intellectual Absorption, and .851 for the overall scale). These findings indicate that the Turkish version of the IES is a reliable and valid instrument for assessing intellectual experience among university students.

Anahtar Kelimeler: Intellectual experience, scale adaptation, validity, reliability, higher education.

Entelektüel Deneyim Ölçeği'nin Türk Kültürüne Uyarlanması: Üniversite Öğrencilerinde Geçerlik ve Güvenirlik Çalışması

Özet

Entelektüel deneyim, bireyin bilişsel ve duyuşsal tepkilerini kapsayan çok boyutlu bir yapıdır. Mayer ve Caruso (1989) tarafından geliştirilen Entelektüel Deneyim Ölçeği (EDÖ), bu yapıyı entelektüel haz, entelektüel özümseme ve entelektüel ilgisizlik olmak üzere üç boyutta ölçmektedir. Bu araştırmanın amacı, EDÖ'yü Türkçeye uyarlamak ve psikometrik özelliklerini incelemektir. Çok aşamalı çeviri ve kültürel uyarlama sürecinin ardından ölçek 34 maddeye indirgenmiştir. Ölçek Türkiye'deki 600 üniversite öğrencisine uygulanmış, veri seti rastgele iki bağımsız örnekleme ayrılmıştır. İlk örneklem (n = 300) Açıklayıcı Faktör Analizi (AFA), ikinci örneklem (n = 300) ise Doğrulayıcı Faktör Analizi (DFA) için kullanılmıştır. AFA sonuçları, faktör yüklerinin .401 ile .795 arasında değiştiğini ve üç faktörlü yapının toplam varyansın %31.86'sını açıkladığını göstermiştir. DFA sonuçları ise üç faktörlü modelin kabul edilebilir düzeyde uyum gösterdiğini ortaya koymuştur ($\chi^2/df = 2.04$, RMSEA = .059, CFI = .94, NNFI = .93, SRMR = .097, NFI = .89, AGFI = .82). Ölçeğin iç tutarlılık katsayıları Entelektüel Haz için .870, Entelektüel İlgisizlik için .834, Entelektüel Özümseme için .758, ölçeğin geneli için

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ise .851 olarak bulunmuştur. Bulgular, EDÖ'nün Türkçe formunun üniversite öğrencilerinin entelektüel deneyim düzeylerini belirlemede geçerli ve güvenilir bir ölçme aracı olduğunu göstermektedir.

Keywords: Entelektüel deneyim, ölçek uyarlama, geçerlik, güvenirlik, yükseköğretim.

1. Introduction

Higher education serves as a vital platform for the journey of intellectual growth. During this period, students immerse themselves in cognitive, artistic, cultural, and philosophical discussions within a stimulating academic environment. These exchanges, alongside diverse learning experiences and cultural interactions, weave a rich tapestry of intellectual exploration, shaping their worldview and self-perception. Essentially, higher education provides fertile ground for the cultivation and nurturing of intellectual curiosity, leading to a deeper understanding of oneself and the world. This underscores the transformative power of active engagement and critical thinking inherent in the pursuit of intellectual experience within higher education.

However, not all experiences within higher education are inherently intellectual. Simply attending lectures and passively absorbing information may not lead to significant intellectual growth. What truly distinguishes an intellectual experience is the active engagement with ideas, the critical questioning of assumptions, and the construction of new knowledge through analysis and synthesis. This active approach cultivates critical thinking skills, allowing students to not only acquire information but also evaluate its validity, challenge established perspectives, and generate unique insights (Chickering & Gamson, 1987; King & Kitchener, 1994).

Derived from the Latin "Experientia," "experience" encompasses a set of events and activities where individuals and groups acquire knowledge, ideas, and skills. Active participation, knowledge acquisition, problem-solving, and the development of critical thinking skills are all crucial elements (Sloww, 2021). In contrast, "intellectual experience," echoing the Latin "intellectualis experientia," refers to encounters requiring active thinking, analysis, and the generation of new ideas. It encompasses learning, knowledge acquisition, creativity, and critical thinking (Glosbe, n.d.). While experience can be passive, intellectual experience demands active involvement. While experience provides basic knowledge, intellectual experience fosters a deeper understanding and refined thinking skills. Intellectual experience involves an individual's overall comprehension, background, and mental capacities. Individuals with intellectual experience not only can use technology efficiently, but they also acquire the ability to adjust to shifting circumstances as well as to follow current improvements (Mayer & Caruso, 1989).

Merrill (2002) further refines this understanding by emphasising the paramount importance of active participation in educational experiences. He argues that engaging with the world through questioning, problem-solving, and creative activities fosters not only knowledge and skill acquisition but also critical thinking and meaningful learning. This active engagement distinguishes intellectual experience from passive information consumption.

Intellectual experience encompasses a vast spectrum of activities and encounters. It can manifest in the physical realm through manipulating objects and environments, or in the mental realm through intellectual processes, thoughts, and emotions. Spiritual and religious experiences, often intertwined with personal journeys, add another dimension to this spectrum. Educational experiences, whether formal or self-directed, provide avenues for knowledge acquisition and intellectual growth. Professional experiences, on the other hand, offer opportunities to hone skills and gain real-world knowledge (Brown, 2003; Interaction Foundation Design, 2021; Nowotny, Plaice, & Neville, 1996; Paloutzian & Park, 2015; Popper, Eccles, & John, 1977).

The relationship between intellect and experience is not one of opposition, but rather of mutual reinforcement. As Aristotle believed, experience forms the foundation of knowledge, providing the raw data upon which our reasoning faculties can build (Aristotle, trans. 1984). Plato echoed this sentiment, arguing that true knowledge emerges from synthesising sensory and intellectual experience, where the senses offer the raw materials and the intellect refines and interprets them (Plato, trans. 1997). The work of Descartes and Spinoza further exemplifies this dynamic interplay. While Descartes emphasized innate ideas and clear, distinct notions as the basis for knowledge (Descartes, trans. 1985), Spinoza saw the intellectual experience as a fundamental aspect of human nature, paving the way for understanding and overcoming skepticism (Fine, 2021; Gregorić & Grgić, 2006; Shields, 2022; Spinoza, trans. 1996).

The significance of intellectual experience extends beyond personal growth, finding profound expression in the realm of education. College students, as Chickering & Reisser (1993) point out, embark on a journey of honing three key competencies: intellectual, manual, and interpersonal. Intellectual competence, in particular, equips them with the tools to analyse, synthesise, and dissect complex ideas, shaping their understanding of the

world.

This emphasis on intellectual experience has practical implications for curriculum design and teaching methods. Robledo's (2014) work, for example, offers a treasure trove of strategies and techniques to enhance intellectual capacities and foster innovative problem-solving. By encouraging systems thinking, divergent thinking, and metacognition, educators can empower students to engage with the world in a more nuanced and insightful way.

The term "intellectual experience" itself embraces three dimensions: Intellectual absorption: A state of complete immersion in thought, learning, or exploration, where you feel disconnected from the outside world (Csikszentmihalyi, 1990; Schiefele & Krapp, 2008). Intellectual pleasure: A positive emotional response to an intellectually stimulating and satisfying experience (Ainley et al., 2015; Deci & Ryan, 2000). Intellectual apathy: A lack of interest or enthusiasm towards intellectual pursuits (Marin, 1991; Skaalvik & Skaalvik, 2014). These definitions highlight those intellectual experiences encompass any activities that actively involve our thoughts and provide us with joy, knowledge, and understanding.

Intellectual experience is not confined to the walls of academia or the pages of a book. It's a lifelong journey of exploration, discovery, and personal growth. It fuels our curiosity, pushes us to question and challenge assumptions, and broadens our horizons. As we grapple with complex ideas, engage in meaningful discussions, and confront diverse perspectives, we refine our understanding of ourselves and the world around us. Therefore, assessing and understanding the nuanced qualities of intellectual experience requires reliable instruments. However, while various "intellectual experience scales" exist in different languages, (Butcher, Zhang, & Hong, 2012; Mayer et al., 1989; Pascarella & Terenzini, 1991; Perry, 1970), there is currently no validated Turkish version of the widely used scale developed by Mayer & Caruso (1989). This poses a significant challenge for Turkish researchers and educators, hindering their ability to investigate the intellectual development of university students and evaluate the effectiveness of educational interventions that aim to foster deeper learning and critical thinking skills. Addressing this critical gap, this study aims to adapt the IES to Turkish while ensuring both rigorous cultural adaptation and thorough psychometric evaluation. This comprehensive approach will involve (1) meticulously translating the scale items to accurately reflect the nuances of the Turkish culture, and (2) conducting robust psychometric analyses to assess the reliability, validity, and factor structure of the adapted version. By providing a culturally appropriate and psychometrically sound tool, this research aims to answer the question: "Can the IES be effectively adapted into Turkish culture, and what are the psychometric properties of the adapted version?" Ultimately, this research will equip Turkish researchers and educators with a valuable tool for measuring and understanding intellectual experience, leading to more effective educational practices and improved learning outcomes for students.

Intellectual Experience in Higher Education

Higher education goes beyond developing cognitive skills; it also supports students' social and emotional growth. This intellectual experience contributes to preparing individuals with various skills needed in the complex and changing world of the 21st century.

Cognitive Development:

- Development of cognitive skills such as critical thinking, problem-solving, and analytical thinking (World Economic Forum, 2020)
- Acquiring the ability to synthesise, interpret, and evaluate information from new perspectives (Mayer & Caruso, 1989)
- Embracing learning as a lifelong process and being open to acquiring new knowledge (Dewey, 1933)

Social Development:

- Developing social skills such as effective communication, teamwork, adaptation, and leadership (World Economic Forum, 2020).
- Cultivating respect for different cultures and perspectives and developing tolerance (Freire, 1970).
- Taking responsibility, acting ethically, and developing a sense of social responsibility (Sartre, 1943).

Emotional Development:

- Developing emotional skills such as self-awareness, self-confidence, and self-esteem
- Enhancing coping and problem-solving skills
- Developing empathy, emotional intelligence, and communication skills with others

21st Century Skills:

- Creativity and innovation
- Information and communication technology literacy

- Problem-solving and critical thinking
- Collaboration and teamwork
- Adaptability and flexibility
- Leadership and entrepreneurship

Higher education is not just about acquiring knowledge; it's about cultivating intellectual skills that equip students for the ever-evolving future. As the World Economic Forum (2020) highlights, intellectual experience, defined as the ongoing process of learning, understanding, critical thinking, and knowledge development (Biesta, 2012), plays a crucial role in preparing students for the challenges ahead. This experience extends beyond formal education, encompassing informal learning through conversations, life experiences, and self-reflection (Lave & Wenger, 1991). By providing access to fresh insights and transformative learning opportunities, optimal higher education fosters the development of these crucial intellectual skills. Illeris (2018) emphasizes how such experiences empower students to think critically, make sound decisions, and navigate the complexities of their future endeavours.

Intellectual experience is a critical factor influencing various aspects of human development, encompassing learning, understanding, critical thinking, and knowledge cultivation. This journey spans formal education, informal learning through conversations and life experiences, and self-reflection. Influential scholars in education research have provided intriguing insights into the interplay between intellectual experience and education. For instance, John Dewey emphasised the significance of experiences fostering a child's natural development as integral to intellectual experiences (Paul & Feldman, 2009). Jean-Jacques Rousseau similarly believed that childhood experiences are crucial for intellectual development (Guttek, 2013). Dewey, envisioning learning as an active process, asserted that intellectual encounters necessitate active learner participation, advocating for a democratic learning environment to foster the growth of intellectual experience (Dewey, 1938). This idea aligns with the contemporary understanding of education as a collaborative and experiential process.

Clive Staples Lewis underscored the importance of reading in intellectual development, particularly for children, to expose them to diverse perspectives and to train students to acquire skills of criticizing thinking (Lewis, 1969). Howard Gardner's notion of multiple intelligences emphasized the various facets of intellectual experience, highlighting the value of experiences supporting students in developing their diverse intelligences within a specific context (Gardner, 2006).

Bruner posits that experience is the foundation of intellectual development. He identifies three modes of representation: enactive, iconic, and symbolic, and advocates for the implementation of a spiral curriculum that aligns with these modes (Bruner, 1966, 1973). Vygotsky emphasizes the significance of social interaction and cultural tools, introducing the concept of "meaningful intellectual experience," which goes beyond knowledge acquisition and cognitive processes (Vygotsky, 1978, 1987).

Csikszentmihalyi states that in the "flow" state, individuals' intrinsic curiosity for knowledge increases, and learning becomes more efficient (Csikszentmihalyi, 1990, 1997). Rathunde claims that Montessori education nurtures intellectual experience in children by embracing the principles of "optimal experience" such as autonomy, competence, and challenge (Rathunde, 2001, 2004). Maslow identifies intellectual experience as one of the higher-level needs that enable people to reach their full potential (Maslow, 1954, 1970).

Mezirow presents the "transformative learning" model, arguing that experiences transform individuals' worldviews and knowledge structures, explaining this transformation process with a 10-step model (Mezirow, 1991, 2000). Perry studies the changes in university students' perspectives on knowledge and identity, offering a 9-stage model that captures this transformative journey (Perry, 1970, 1981).

While different theories focus on different aspects of intellectual experience, they all agree that it helps individuals realize their potential. Diverging from the conventional usage of the term, where experience is often associated with engaging in specific activities or events and experiencing corresponding emotions, Dewey and Vygotsky offer a distinct perspective. In their frameworks, experience transcends individual actions and emotions; instead, it becomes a comprehensive category of thought and a fundamental unit of analysis. This view challenges the notion that experience is confined within individuals, asserting its extension across space and time, unfolding through societal relations imbued with affect (Vygotsky, 1935/2001, cited in Roth & Jornet, 2014).

While they share common ground in linking activity, learning, and development, Dewey's and Vygotsky's theories diverge in the conceptualization of the relationship between process and goals in education. Dewey champions the process of learning itself, believing that individuals can use their experiences to question and define what truly matters to society, whereas Vygotsky prioritizes both cultural and social circumstances for discovering and adding the value of experience. He views cultural goals and processes as fundamental to

education, requiring integration into the pedagogical framework.

For Vygotsky, culture serves as the raw material of thinking, shaping individuals' cognitive development and influencing how they engage with the world. These contrasting perspectives translate into distinct classroom strategies and curriculum designs. Dewey advocates for student-centred learning, where experiences are prioritized and students actively participate in constructing knowledge through inquiry and exploration. Vygotsky, on the other hand, emphasizes the role of scaffolded learning and guided interaction with mentors and peers, leveraging cultural tools and knowledge to support cognitive development (Glassman, 2001).

John Dewey challenged the notion of isolated experiences in learning, contending that experiences hindering further growth and exploration lack genuine educational value. For Dewey, true learning hinges on the continuous interplay between past, present, and future experiences. Each encounter builds upon its predecessors, enriching and shaping the quality of those to come (Dewey, 1938). This concept transcends individual mental processes, positioning experience as a dynamic dialogue between the human being and their environment. Hohn echoes this holistic view, emphasizing the communicative, historical, and cultural dimensions of experience, rather than isolating it as a purely individual or mental phenomenon (Hohn, 2013).

In this section, we have focused on how higher education contributes to intellectual experience. Higher education not only contributes to the development of cognitive skills but also supports students' social and emotional development. In cognitive development, it is important to develop skills such as critical thinking, problem-solving, and analytical thinking (Mayer & Caruso, 1989; World Economic Forum, 2020). Socially, it is important to acquire skills such as effective communication, teamwork cohesion, and leadership (Freire, 1970; World Economic Forum, 2020). Emotionally, skills such as self-awareness, self-confidence, and self-esteem need to be developed. However, in terms of 21st-century skills, it is also vital to acquire skills such as creativity, problem-solving, cooperation, and flexibility (World Economic Forum, 2020).

The theoretical frameworks discussed in this study emphasize the different perspectives of John Dewey and Lev Vygotsky on the role of experience in education. While Dewey argues that experience is central to learning, Vygotsky emphasizes the importance of cultural and social context. However, both perspectives agree that experience in education, especially intellectual experience, should be used effectively.

In conclusion, intellectual experience in higher education contributes to the cognitive, social, and emotional development of students. The development of an intellectual experience scale can enhance our understanding of its effects and guide future research, contributing to making educational practices more effective.

2. Method

2.1. Participants

This study included 600 university students enrolled in various faculties across state and foundation universities, including Yeditepe, Istanbul Technical, Medipol, Istanbul, Mehmet Akif Ersoy, Dicle, Çukurova, Harran, Mersin, Ankara, Gazi, and Düzce in Turkey, throughout the spring term of the school year 2022 and 2023. ‘The method of convenience sampling has been employed for selecting respondents, where a researcher chooses environments that are easily reachable.’ (Büyüköztürk, 2022, p. 150; Ekiz, 2013, p. 12; Yıldırım & Şimşek, 2016, p. 189). By investigating various aspects of the respondents through the demographic survey, a large amount of data is shown in the next table.

Table 1. Demographic Characteristics of the Exploratory and Confirmatory Factor Analysis Samples

Variable	Category	EFA (n = 300)		CFA (n = 300)	
		n	%	n	%
Gender	Female	159	53.0	159	53.0
	Male	141	47.0	141	47.0
Grade Level	First Year	69	23.0	70	23.3
	Second Year	68	22.7	68	22.7
	Third Year	79	26.3	80	26.7
	Fourth Year	84	28.0	82	27.3
Department Preference	First Preference	146	48.7	146	48.7
	2nd–5th Preference	85	28.3	84	28.0
	6th–10th Preference	35	11.7	35	11.7
	Above 10th Preference	34	11.3	35	11.6

Variable	Category	EFA (n = 300)		CFA (n = 300)	
GPA	Below 1.00	8	2.7	7	2.3
	1.00–2.00	21	7.0	20	6.7
	2.01–3.00	129	43.0	130	43.3
	3.01–4.00	142	47.3	143	47.7
Faculty	25 Faculties	300	100	300	100

The demographic characteristics of the participants included in the exploratory and confirmatory validation samples are presented in Table 1. Following data screening, the full sample of 600 university students was randomly divided into two statistically independent subsamples of equal size. The first subsample (n = 300) was used to conduct the Exploratory Factor Analysis (EFA), whereas the second independent subsample (n = 300) was reserved for the Confirmatory Factor Analysis (CFA). The distributions of demographic characteristics, including gender, grade level, department preference, grade point average (GPA), and faculty representation, were similar across the two subsamples, indicating that the random assignment procedure produced comparable participant groups. The use of independent samples for EFA and CFA is recommended in psychometric validation studies because it minimizes capitalization on chance, reduces sample-specific bias, and provides stronger evidence for the construct validity and cross-validation of the proposed measurement model (Worthington & Whittaker, 2006; Brown, 2015; Kline, 2016).

2.2. Research instrument

This study aimed to adapt the Intellectual Experience Scale developed by Mayer & Caruso (1989) into Turkish and examine its psychometric properties. The scale, initially designed to explore intelligence and intelligence-related personality traits (Mayer et al., 1989), measures individuals' intellectual experiences across three dimensions: Intellectual Absorption, Intellectual Apathy, and Intellectual Pleasure.

The scale is administered using a 5-point Likert-type scale, ranging from "Strongly Disagree" to "Strongly Agree" for each item. The scale scores are calculated by summing the participants' responses for each subscale. There are a total of 51 items, with some items being assigned to multiple subscales. The psychometric properties of the scale were assessed in terms of validity, reliability, and factor structure. The psychometric properties of the original scale were analysed by Mayer et al. (1989).

The scale's internal consistency, assessed using Cronbach's alpha coefficient for each subscale, was evaluated. According to Mayer & Caruso's (1989) study, acceptable internal consistency coefficients were obtained for each subscale. For instance, the alpha values were reported as 0.78 for the Intellectual Absorption dimension, 0.80 for the Intellectual Apathy dimension, 0.78 for the Intellectual Pleasure dimension, and 0.80 for the total score. Based on this information, it can be said that the scale is quite reliable in terms of internal consistency. In the original study, Mayer and Caruso (1989) reported that a three-factor solution obtained using Principal Components Analysis (PCA) explained 52% of the total variance. In the present study, Principal Axis Factoring (PAF) was employed as the extraction method, resulting in a lower explained variance (31.86%), which is expected because PAF estimates only the common variance among observed variables while preserving the original three-factor structure. In the present Turkish adaptation, the original three-factor structure was retained; however, the final version consisted of 34 items following the psychometric analyses.

The Turkish adaptation of the scale was conducted through a multi-stage translation and adaptation process. Following a pilot study, the scale was reduced to 34 items. The adapted scale was then administered to 600 university students in Turkey during the spring semester of 2022-2023.

Findings suggest that the Turkish version of the Intellectual Experience Scale is a reliable and valid instrument for measuring intellectual experience among Turkish university students. This scale could be utilised in future research to investigate the relationship between intellectual experience and various factors.

2.3. Procedure

The Intellectual Experience Scale (IES) was selected for assessing university students' intellectual experience skills after a comprehensive review of existing literature, including studies by Mayer et al. (1989), Mayer & Caruso (1989), Gonyea et al. (2003), and Mandeville et al. (2018). Mayer & Caruso (1989) highlighted the suitability of the IES for college students following an examination of various scales. The researcher who carried out the study granted permission to utilise the scale. Necessary consents were obtained for adapting the scale into Turkish. The scale items, guidelines, and response alternatives were translated into Turkish to account for cultural and linguistic differences. To create a culturally and linguistically suitable version, this procedure followed the stages indicated by Sinaiko & Brislin (1973), Hambleton & Patsula (1999), and Kılınç, Büyüköztürk,

& Akbaba-Altun (2014). The adaptation process involved ensuring that the concept measured by the scale is culturally relevant and meaningful for comparison between the two countries.

The adaptation process consisted of three key stages. First, a group of experts from Istanbul Technical University's School of Foreign Languages English Preparatory Program, proficient in both languages and culturally aware, translated the scale into the target language. This group, skilled in the linguistic and cultural nuances of both languages, accurately translated the scale items, scoring guidelines, and response options. Initially, the researchers attempted to consolidate the translated versions into a single form. Then, the translations were compared to identify similarities and differences. This comparative analysis laid the foundation for a unified Turkish version of the scale, ensuring its cultural and linguistic appropriateness for the target audience. (Hambleton & Patsula, 1999)

After creating the Turkish version, a back-translation process was conducted. In this step, a different set of experts, who were unaware of the original English version, retranslated the Turkish version back into English. This reverse translation was compared with the original English version to check for any discrepancies or meaning shifts, ensuring that the Turkish version conveyed the same concepts and intent as the original. This process helped verify the accuracy and consistency of the translated scale. (Hambleton & Patsula, 1999).

To ensure the translation's accuracy and cultural relevance, a pivotal meeting was convened, bringing together three subject matter experts. Before the meeting, experts received both the original scale and its translated adaptations, allowing for a comprehensive review. Additionally, a crafted document highlighting similarities and differences between translations was provided, guiding the experts' deliberations. During this intensive session, the original scale, translated forms, the combined translation, and a form showcasing additional items were thoroughly examined. Each item and response option underwent rigorous scrutiny to select the most optimal translation. Discrepancies in translation choices were openly discussed, with the overarching goal of achieving clarity and consistency. Expert opinions took centre stage in this collaborative process, ultimately leading to the finalisation of the translation form (Yalcin, 2021).

The second stage delved deeper into linguistic equivalence through a carefully constructed expert opinion study. This logic-driven approach aimed to assess the translated scale's equivalence on four key levels: semantic, idiomatic, conceptual, and experiential. To facilitate this, an 'Expert Evaluation Form for Equivalence' was distributed to four seasoned field experts. After consulting an expert, the Scope Validity Ratio was calculated in order to make the decision to remove the items from the scale. Since the opinions of the experts we consulted to ensure scope validity were subjective, different methods were developed in the literature to obtain more reliable results. The most widely known and used of these methods is the Lawshe method (Ayre & Scally, 2014). After calculating the scope validity ratio and scope validity index, it was compared with the criteria and it was decided whether the items would continue to be included in the scale. Having received the translated scale, these experts were tasked with identifying potential inaccuracies and suggesting improvements, ensuring every item aligned with the original in meaning, idiom, concept, and experience while considering the target audience's specific characteristics. Although no formal statistical analysis was conducted on the expert ratings, the expert evaluation form was a crucial tool for ensuring the conceptual and experiential equivalence of the translated scale. By soliciting expert opinions from individuals deeply knowledgeable in the field, we were able to identify and address potential issues that might have been overlooked by a purely statistical approach. The experts' insights provided a valuable qualitative assessment of the scale's equivalence, complementing any quantitative analysis that may have been conducted (Campbell et al., 2013; Kline, 2013). Following a thorough review of the experts' feedback detailed in the Equivalence Tally Sheet, the analysis revealed overall semantic, idiomatic, conceptual, and experiential consistency with the original scale, albeit with some recommended corrective measures. Over three collaborative sessions, the researchers integrated the experts' valuable insights, finalising the scale with 51 items, mirroring the original version. Before initiating the implementation process, the revised scale, including its instructions, was presented to two additional field experts (outside the thesis monitoring committee) for their final evaluation. Using a rigorous two-pronged expert opinion approach, insights from Sinaiko & Brislin (1973), Hambleton & Patsula (1999), and Kılınç, Büyüköztürk, & Akbaba Altun (2014) have been combined to ensure the language proficiency and cultural suitability of the translated scale for the target audience.

The third stage focused on evaluating the psychometric properties of the Turkish version of the Intellectual Experience Scale through pilot testing and subsequent validity and reliability analyses. Prior to the main study, a pilot study was conducted with 155 university students who were not included in either the Exploratory Factor Analysis (EFA) or Confirmatory Factor Analysis (CFA) samples. Consistent with the commonly recommended guideline of including at least five participants per item for preliminary instrument evaluation, the pilot sample

was considered adequate for assessing the clarity, comprehensibility, and cultural appropriateness of the translated instrument. Feedback obtained during the pilot administration indicated that the items were generally understandable; therefore, only minor linguistic refinements were made before the main data collection.

Following the pilot study, the revised Turkish version of the scale was administered to 600 university students from 12 Turkish universities using an online questionnaire. After data screening, the total sample was randomly divided into two statistically independent subsamples of equal size ($n = 300$ each). The first subsample was used exclusively for Exploratory Factor Analysis (EFA), whereas the second subsample was reserved for Confirmatory Factor Analysis (CFA) to provide cross-validation of the factor structure.

During the exploratory factor analysis, item retention and deletion decisions were based on both statistical and theoretical considerations rather than solely on numerical criteria. Items with factor loadings below the commonly accepted minimum threshold of .30, items exhibiting substantial cross-loadings on multiple factors, and items that failed to contribute meaningfully to the conceptual structure of the scale were identified as candidates for removal. Each candidate item was subsequently evaluated with respect to its conceptual relevance to the original Intellectual Experience Scale. Consequently, only items demonstrating inadequate psychometric performance together with conceptual redundancy were excluded, whereas items that contributed to preserving the theoretical integrity and content coverage of the original instrument were retained despite showing relatively modest statistical indicators. This iterative evaluation process resulted in the removal of 17 items, yielding a final Turkish version consisting of 34 items while preserving the original three-factor structure.

The final 34-item version was subsequently validated through confirmatory factor analysis using the second independent subsample. This sequential validation procedure provided empirical evidence supporting the construct validity and internal consistency of the Turkish adaptation of the Intellectual Experience Scale.

2.4. Data Analysis

Prior to the psychometric analyses, the complete dataset ($N = 600$) was randomly divided into two statistically independent subsamples of equal size ($n = 300$ each). The first subsample was used for Exploratory Factor Analysis (EFA), whereas the second independent subsample was reserved for Confirmatory Factor Analysis (CFA). Employing independent samples for EFA and CFA is recommended in psychometric validation studies because it minimizes capitalization on chance and provides stronger evidence for construct validity (Worthington & Whittaker, 2006; Brown, 2015; Kline, 2016).

Descriptive statistics, item analyses, and reliability analyses were conducted using IBM SPSS Statistics 24 (IBM Corp., 2016), whereas confirmatory factor analysis was performed using LISREL 8.80 (Jöreskog & Sörbom, 2006).

Prior to factor extraction, the suitability of the data for factor analysis was evaluated using the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity. Exploratory Factor Analysis was conducted using Principal Axis Factoring (PAF) because this extraction method is recommended for identifying latent constructs by estimating the common variance shared among observed variables (Fabrigar et al., 1999). Since the dimensions of intellectual experience were theoretically expected to correlate, Promax rotation with Kaiser normalization was employed.

The number of retained factors was determined by considering eigenvalues greater than one, examination of the scree plot, the interpretability of the factor solution, and the theoretical structure of the original scale. Item retention decisions were based on both statistical and theoretical considerations. Items with factor loadings below .30, substantial cross-loadings, or conceptual redundancy were considered for removal during the exploratory factor analysis.

Subsequently, the factor structure identified through EFA was cross-validated using Confirmatory Factor Analysis (CFA) on the second independent subsample. Model fit was evaluated using χ^2/df , RMSEA, GFI, CFI, NNFI (TLI), SRMR, NFI, and AGFI. Internal consistency and convergent validity were evaluated using Cronbach's alpha, McDonald's omega, Composite Reliability (CR), and Average Variance Extracted (AVE).

2.5. Research Ethics

This study was conducted under ethical standards and guidelines for research involving human participants. Informed consent was obtained from all participants before data collection, ensuring voluntary participation and confidentiality. The research design and procedures adhered to the principles of respect, privacy, and protection of participant rights. Approval from the relevant ethics committee was obtained, and the specific details of the approval will be provided after the manuscript is accepted.

3. Findings

3.1. Psychometric Properties of the Intellectual Experience Scale

The psychometric properties of the Turkish version of the Intellectual Experience Scale (IES) were evaluated through a two-stage validation procedure involving Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). To ensure methodological rigor, the complete dataset was randomly divided into two statistically independent subsamples. The first subsample ($n = 300$) was used to explore the latent factor structure of the scale through EFA, whereas the second independent subsample ($n = 300$) was used to verify the obtained factor structure by CFA.

3.2. Exploratory Factor Analysis

Exploratory Factor Analysis was conducted on the first independent subsample ($n = 300$). Prior to factor extraction, the suitability of the data for factor analysis was evaluated using the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy and Bartlett’s Test of Sphericity. The KMO value was .878, indicating good sampling adequacy, while Bartlett’s Test of Sphericity was statistically significant ($\chi^2 = 5770.41$, $df = 1275$, $p < .001$), demonstrating that the correlation matrix was appropriate for factor analysis.

Because the purpose of the analysis was to identify the latent structure underlying the observed variables, Principal Axis Factoring (PAF) was selected as the extraction method. Since the dimensions of intellectual experience were theoretically expected to be correlated, Promax rotation with Kaiser normalization was employed.

Item retention and deletion decisions were based on both statistical and theoretical considerations rather than solely on numerical criteria. During the exploratory factor analysis, items with factor loadings below the commonly accepted minimum threshold of .30, items exhibiting substantial cross-loadings on multiple factors, and items that failed to contribute meaningfully to the conceptual structure of the scale were identified as candidates for removal. Each candidate item was subsequently evaluated with respect to its conceptual relevance to the original Intellectual Experience Scale. Consequently, only items demonstrating inadequate psychometric performance together with conceptual redundancy were excluded from the Turkish version, whereas items that contributed to preserving the theoretical integrity and content coverage of the original instrument were retained, even when their statistical indicators were comparatively modest. This iterative evaluation process resulted in the removal of 17 items, yielding a final 34-item scale while preserving the original three-factor structure.

Three factors with eigenvalues greater than one were extracted. Examination of the scree plot together with the theoretical framework of the original instrument supported the retention of a three-factor solution. The three factors jointly explained 31.86% of the total variance. Specifically, the first factor explained 16.99%, the second factor 11.63%, and the third factor 3.23% of the total variance. Figure 1 presents the scree plot obtained from the exploratory factor analysis.

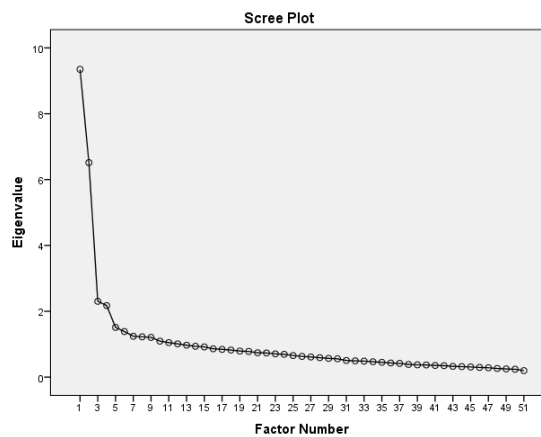


Figure 1. IES Scree Plot

The factor analysis revealed three factors with eigenvalues greater than one, indicating a three-factor structure for the Intellectual Experience Scale. Together, these three factors explained 31.86% of the total variance. Although this percentage is relatively modest, explained variance between 30% and 40% is generally considered acceptable for multidimensional psychological constructs measured using exploratory factor analysis (Hair et al., 2019).

Table 2. Exploratory Factor Analysis and Reliability Results for IES

Sub-dimensions	Number of Items	KMO	Bartlett's χ^2	Variance Explained (%)	Lowest	Highest	Cronbach's Alpha
IES Overall	34	.878	5770.41, $p < .001$	31.86	.401	.795	.851
Intellectual Pleasure	17			16.99	.401	.739	.870
Intellectual Apathy	10			11.63	.405	.795	.834
Intellectual Absorption	7			3.23	.421	.663	.758

*** $p < .001$.

The exploratory factor analysis was conducted on the first independent subsample ($n = 300$) using Principal Axis Factoring (PAF) with Promax rotation. Prior to factor extraction, the suitability of the initial 51-item pool for factor analysis was evaluated using the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity. The KMO value was .878, indicating good sampling adequacy, while Bartlett's Test of Sphericity was statistically significant ($\chi^2 = 5770.41$, $df = 1275$, $p < .001$), confirming that the correlation matrix was appropriate for factor analysis. Following the exploratory factor analysis, 17 items were removed based on statistical and theoretical criteria, resulting in the final 34-item Turkish version of the scale.

The exploratory factor analysis yielded a three-factor solution consisting of 34 items. Together, these three factors explained 31.86% of the total variance. Specifically, the first factor (Intellectual Pleasure) explained 16.99% of the total variance, the second factor (Intellectual Apathy) explained 11.63%, and the third factor (Intellectual Absorption) accounted for 3.23% of the variance.

Table 2 summarizes the exploratory factor analysis and reliability results. Factor loadings ranged from .401 to .795 across the three dimensions. Specifically, factor loadings ranged between .401 and .739 for Intellectual Pleasure, .405 and .795 for Intellectual Apathy, and .421 and .663 for Intellectual Absorption. According to Hair et al. (2019), standardized factor loadings of .40 or higher indicate acceptable item-factor relationships, suggesting that all retained items made meaningful contributions to their respective latent constructs.

The internal consistency analyses also supported the reliability of the Turkish version of the scale. Cronbach's alpha coefficient was .851 for the overall scale, indicating good internal consistency. The reliability coefficients for the subdimensions were .870 for Intellectual Pleasure, .834 for Intellectual Apathy, and .758 for Intellectual Absorption, all of which exceeded the recommended minimum threshold of .70 (Hair et al., 2019; Kline, 2016). Overall, the findings provide evidence that the Turkish adaptation of the Intellectual Experience Scale possesses an interpretable three-factor structure together with satisfactory construct validity and internal consistency.

Confirmatory Factor Analysis (CFA) was conducted using the second independent subsample ($n = 300$) to validate the three-factor structure identified through the Exploratory Factor Analysis. The CFA was performed on an independent validation sample to provide cross-validation of the measurement model and to reduce the risk of sample-specific solutions. Model fit was evaluated using multiple goodness-of-fit indices, including the chi-square statistic (χ^2), chi-square/degrees of freedom ratio (χ^2/df), Root Mean Square Error of Approximation (RMSEA), Goodness-of-Fit Index (GFI), Comparative Fit Index (CFI), Non-Normed Fit Index (NNFI/TLI), Standardized Root Mean Square Residual (SRMR), Normed Fit Index (NFI), and Adjusted Goodness-of-Fit Index (AGFI).

Table 3. CFA Results of the IES

χ^2	df	χ^2/df	RMSEA	GFI	CFI	NNFI (TLI)	SRMR	NFI	AGFI
(865.81)	(425)	2.04	.059	.84	.94	.93	.097	.89	.82

The confirmatory factor analysis supported the three-factor structure identified in the exploratory phase. The proposed measurement model yielded a chi-square value of 865.81 with 425 degrees of freedom, resulting in a χ^2/df ratio of 2.04, which indicates a good overall model fit. According to Kline (2016), χ^2/df values below 3.00 generally reflect an acceptable fit between the hypothesized model and the observed data.

The approximate fit indices also supported the adequacy of the measurement model. The RMSEA value (.059) indicated a good approximation of the model to the population covariance matrix, remaining below the recommended threshold of .08 (Brown, 2015; Hu & Bentler, 1999). Incremental fit indices further demonstrated satisfactory model fit, with CFI (.94) and NNFI (.93) exceeding the recommended criterion of .90. Similarly, the GFI (.84), AGFI (.82), and NFI (.89) values indicated acceptable model fit for a multidimensional measurement instrument. The SRMR value (.097) was below the recommended upper limit of .10, suggesting an acceptable

level of residual error.

Overall, the goodness-of-fit indices demonstrated that the proposed three-factor model adequately represented the observed data. These findings provide empirical support for the construct validity of the Turkish version of the Intellectual Experience Scale and confirm that the factor structure identified through the exploratory analysis was successfully replicated in an independent validation sample.

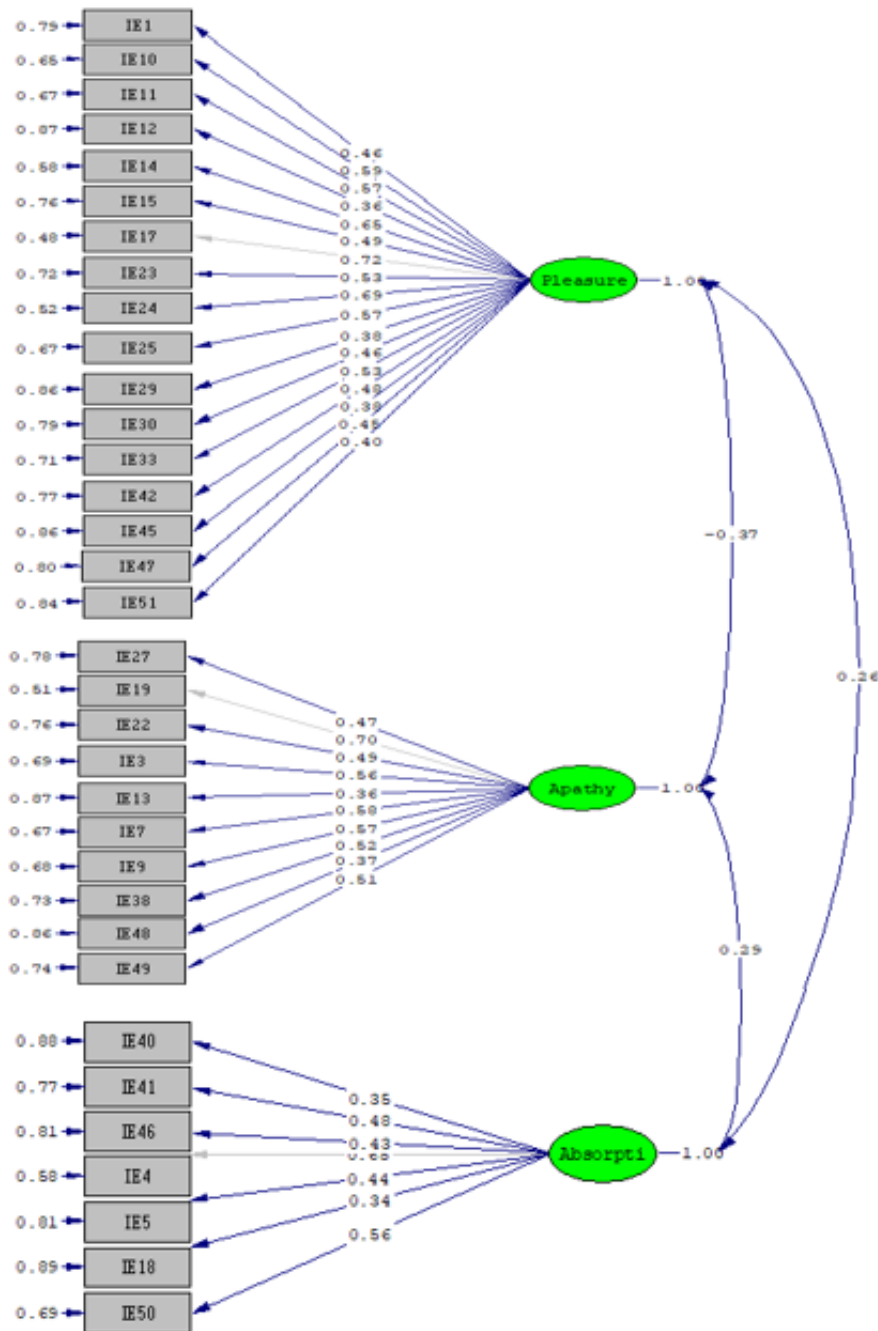


Figure 2. CFA results for the Path Diagram of the IES: Path analysis

Figure 2 presents the standardized measurement model obtained from the confirmatory factor analysis. All retained items loaded significantly on their respective latent constructs, and the standardized factor loadings supported the three-factor structure identified through the exploratory factor analysis. The covariance estimates among the latent variables further confirmed that the three dimensions represent related but distinct components of intellectual experience.

Item discrimination analysis was conducted to evaluate the extent to which each item contributed to the measurement of the overall construct. Corrected item-total correlation coefficients were calculated for each item retained in the final Turkish version of the Intellectual Experience Scale. The results are presented in Table 4.

Table 4. Item Discrimination Table for the IES

Item	Corrected Item-Total Correlation
ED3	,360
ED7	,288
ED9	,377
ED13	,379
ED19	,481
ED21	,494
ED22	,430
ED27	,412
ED28	,355
ED32	,346
ED38	,413
ED39	,495
ED49	,465
ED10	,379
ED11	,362
ED14	,249
ED16	,383
ED17	,267
ED23	,323
ED24	,195
ED25	,215
ED33	,296
ED51	,228
ED6	,280
ED18	,383
ED26	,309
ED34	,395
ED36	,415
ED40	,424
ED46	,438
ED47	,361

Item discrimination analysis was performed to examine the extent to which each retained item contributed to the overall construct measured by the Turkish version of the Intellectual Experience Scale. Corrected item–total correlation coefficients for the 34 retained items are presented in Table 4.

As shown in Table 4, the corrected item–total correlation coefficients ranged from .195 to .495. According to Büyüköztürk (2022), coefficients of .30 or higher indicate acceptable item discrimination, whereas values above .40 reflect good discrimination. In the present study, 17 items exceeded the recommended threshold of .30, and 8 of these items demonstrated strong discrimination with coefficients greater than .40. Several items yielded corrected item–total correlations below .30, ranging from .195 to .296. Although these items showed relatively lower discrimination, they were retained because they demonstrated acceptable factor loadings in the exploratory and confirmatory factor analyses and contributed to preserving the theoretical content coverage of the original instrument. Overall, the corrected item–total correlation results provide additional evidence supporting the internal consistency of the Turkish version of the Intellectual Experience Scale.

This section presents the descriptive statistics for the Turkish version of the Intellectual Experience Scale and its sub-dimensions.

Table 5. Descriptive Statistics of The Scale and Its Sub-Dimensions

Subdimension	N	Minimum	Maximum	Mean	SD	Skewness	Kurtosis
Intellectual Apathy	300	1	5.00	3.01	0.75	0.203	-0.409
Intellectual Pleasure	300	1	5.00	4.08	0.62	-1.042	1.199
Intellectual Absorption	300	1	5.00	3.35	0.69	-0.141	-0.006
IES Overall	300	1	5.00	3.44	0.48	0.381	1.117

Table 5 presents the descriptive statistics for the Turkish version of the Intellectual Experience Scale and its three subdimensions. The overall mean score for the scale was 3.44 (SD = 0.48), indicating that participants generally reported a moderately high level of intellectual experience.

Among the three dimensions, Intellectual Pleasure had the highest mean score ($M = 4.08$, $SD = 0.62$), suggesting that participants generally experienced enjoyment and satisfaction during intellectually stimulating activities. Intellectual Absorption yielded a mean score of 3.35 ($SD = 0.69$), indicating a moderate tendency to become deeply engaged in intellectual activities. Intellectual Apathy had the lowest mean score ($M = 3.01$, $SD = 0.75$), reflecting a comparatively lower level of indifference toward intellectual experiences.

The observed skewness values ranged from -1.042 to $.381$, whereas kurtosis values ranged from -0.409 to 1.199 . These values fall within the commonly accepted ranges for univariate normality (Hair et al., 2019; Kline, 2016), indicating that the distributions of the scale scores did not substantially deviate from normality.

Overall, the descriptive statistics suggest that the Turkish version of the Intellectual Experience Scale exhibits an appropriate distribution of scores and provides sufficient variability for subsequent psychometric analyses.

To provide additional evidence for the reliability and convergent validity of the Turkish version of the Intellectual Experience Scale, Composite Reliability (CR), Average Variance Extracted (AVE), and McDonald's omega (ω) coefficients were calculated based on the confirmatory factor analysis results. Composite Reliability evaluates the internal consistency of each latent construct, whereas AVE reflects the proportion of variance captured by the construct relative to measurement error (Fornell & Larcker, 1981).

Table 6. Composite Reliability, Average Variance Extracted, and McDonald's Omega for the Turkish Version of the Intellectual Experience Scale

Construct	Items	Cronbach's α	McDonald's ω	Composite Reliability (CR)	Average Variance Extracted (AVE)
Intellectual Pleasure	17	.870	.895	.867	.345
Intellectual Apathy	10	.834	.871	.846	.366
Intellectual Absorption	7	.758	.826	.761	.289
IES Overall	34	.851	.831	—	—

Note. CR = Composite Reliability; AVE = Average Variance Extracted; ω = McDonald's Omega.

As presented in Table 6, the Composite Reliability coefficients ranged from .761 to .867, exceeding the recommended threshold of .70 and indicating satisfactory construct reliability (Hair et al., 2019). McDonald's omega coefficients also demonstrated acceptable to good internal consistency, ranging from .826 to .895 across the three latent constructs.

The AVE values ranged from .289 to .366, remaining below the conventional criterion of .50. Although these findings indicate that the constructs explain less than half of the variance of their indicators, the satisfactory Composite Reliability coefficients suggest that the latent constructs possess acceptable reliability despite relatively low convergent validity. As noted by Fornell and Larcker, convergent validity may still be considered acceptable when Composite Reliability exceeds .60, even if AVE is below .50. Therefore, the overall pattern of results provides additional support for the psychometric adequacy of the Turkish version of the Intellectual Experience Scale.

4. Discussion and Conclusion

The findings of this study provide evidence for the validity and reliability of the Turkish version of the Intellectual Experience Scale (IES) as a measure of intellectual experience in university students. The scale has been shown to be an appropriate scale, including acceptable levels of normality, construct validity, and reliability. The findings also suggest that university students in Turkey generally report high levels of intellectual experience, which is characterised by absorption, pleasure, and apathy. The scale's internal consistency was assessed using Cronbach's alpha coefficient for each subscale. According to Mayer & Caruso's (1989) study, acceptable internal consistency coefficients were obtained for each subscale. For instance, the alpha values were reported as 0.78 for the Intellectual Absorption dimension, 0.8 for the Intellectual Apathy dimension, 0.78 for the Intellectual Pleasure dimension, and Cronbach's alpha for the total score was reported as $\alpha = 0.81$. Based on this information, it can be said that the scale is quite reliable regarding internal consistency. In the original study, Mayer and Caruso (1989) reported that the three-factor solution explained 52% of the total variance, indicating that the scale captures intellectual experience across three distinct dimensions. In the present Turkish adaptation, the exploratory factor analysis also supported the same three-factor structure; however, the explained variance was 31.86%.

The Turkish adaptation of the scale was conducted through a multi-stage translation and adaptation process.

Following a pilot study, the scale was reduced to 34 items. The adapted scale was then administered to 600 university students in Turkey during the spring semester of 2022-2023. The results supported a three-factor structure consistent with the original scale. Both exploratory and confirmatory factor analyses indicated an acceptable model fit. Internal consistency values also demonstrated that the scale possesses adequate reliability across its subdimensions as well as overall.

Findings suggest that the Turkish version of the Intellectual Experience Scale is a reliable and valid instrument for measuring intellectual experience among Turkish university students. This scale could be utilised in future research to investigate the relationship between intellectual experience and various factors.

These findings contribute to research indicating that intellectual experiences play a crucial role in student achievement and personal development. There is evidence to suggest that intellectual experience can help students become more engaged in their learning, achieve higher levels of academic achievement, and have a more satisfying college experience (Astin, 1993; Baxter Magolda, 2004; Kuh, 2001).

The findings of this study provide valuable insights into the assessment and understanding of intellectual experience among university students, particularly in the Turkish context. By establishing the validity and reliability of the Turkish version of the Intellectual Experience Scale (IES), this research not only contributes to the field of psychology and education but also informs educational practices and interventions aimed at enhancing students' intellectual engagement and development (Jackson & Leffingwell, 1999).

This study's emphasis on the psychometric properties of the IES underscores the importance of rigorous measurement tools in educational research (Cronbach and Meehl, 1955; DeVellis, 2016). Valid and reliable instruments like the IES are crucial for accurately assessing complex constructs such as intellectual experience, facilitating more nuanced investigations into their correlates and outcomes.

Moreover, the observed high levels of intellectual experience among Turkish university students highlight the significance of fostering an intellectually stimulating environment within educational institutions. Recognising and promoting intellectual engagement can not only enhance students' academic performance but also contribute to their overall personal and cognitive development (Baxter Magolda, 2004; Chick & Karis, 2016).

However, as with any research endeavour, it is essential to acknowledge the limitations of this study. The restricted sample of university students in Turkey calls for caution when generalising the findings to broader populations. Future research efforts should aim to replicate these findings across diverse cultural and demographic contexts to ascertain the robustness and universality of the observed patterns (Duran & Extremera, 2016; Hayes & Coutts, 2020).

Furthermore, while this study establishes the groundwork for understanding intellectual experience, there remains a need for more comprehensive investigations into its implications for student success and well-being. Exploring the interplay between intellectual experience and variables such as cognitive ability, personality traits, and academic achievement can offer deeper insights into the mechanisms underlying student development and performance (Ackerman & Heggestad, 1997; Richardson et al., 2012).

Longitudinal studies are particularly valuable in elucidating the trajectory of intellectual experience over time and identifying the factors that influence its evolution. Such research can inform targeted interventions and educational strategies aimed at fostering a conducive environment for intellectual growth and engagement throughout students' educational journeys (Alexander et al., 2017; Vansteenkiste et al., 2012).

The findings of this study also suggest that the Turkish version of the IES is a valuable tool that can be used to research intellectual experience in Turkish-speaking countries. The scale can help researchers and educators better understand and develop students' intellectual experiences.

In light of the findings of this study, future research is recommended to:

1. Examine the validity and reliability of the IES in other populations, such as high school students or adults.
2. Investigate the relationship of intellectual experience with other relevant variables, such as student success, cognitive ability, and personality traits.
3. Conduct longitudinal studies that examine how intellectual experience changes over time and what factors contribute to these changes.
4. Additionally, it is suggested that the IES can be used to help educators develop interventions that will help students develop their intellectual experiences.

This study demonstrates that the Turkish version of the IES is a valid and reliable instrument for measuring intellectual experience in university students. The findings suggest that intellectual experience may play an important role in student success and personal development. Future research will help us better understand how

intellectual experience manifests itself in other populations and how it affects student success and personal development.

In conclusion, the findings of this study underscore the importance of intellectual experience in shaping students' educational experiences and outcomes. By establishing the validity and reliability of the Turkish version of the IES, this research opens avenues for further inquiry and intervention, ultimately contributing to the enhancement of student learning and development on a global scale.

Limitations

This study has a few limitations to consider. First, since the research was conducted exclusively with university students in Turkey, the findings may not be fully generalizable to other age groups or cultural settings. Additionally, the use of self-reported data means there is a possibility of response bias from participants. Finally, due to the cross-sectional design, it is not possible to make definitive conclusions about cause-and-effect relationships. Future studies could overcome these limitations by including more diverse samples and employing longitudinal designs.

Declarations

Author Contributions: A.E. contributed to the literature review, data collection, and writing of the original draft. Y.D.C. performed the statistical analyses, interpreted the results, and revised the manuscript critically. Both authors reviewed and approved the final version.

Conflict of Interest: The authors declare no conflict of interest.

Ethics Approval: This study was conducted in full compliance with the ethical principles of the publication process. Key values such as honesty, transparency, and respect for participants' rights were carefully upheld throughout the research.

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Entelektüel Deneyim Ölçeği'nin Türk Kültürüne Uyarlanması: Üniversite Öğrencilerinde Geçerlik ve Güvenirlik Çalışması

Giriş

Entelektüel deneyim, bireylerin bilişsel ve duyuşsal tepkilerini kapsayan çok boyutlu bir yapıdır. Bireylerin fikirlerle aktif etkileşime girmesini, varsayımları sorgulamasını ve analiz ile sentez yoluyla yeni bilgiler inşa etmesini içerir. Yükseköğretimde entelektüel deneyim, öğrencilerin bilişsel, sosyal ve duygusal gelişiminde kritik rol oynar. Mayer ve Caruso (1989) tarafından geliştirilen Entelektüel Deneyim Ölçeği (EDÖ), bu yapıyı Entelektüel Haz, Entelektüel Özümseme ve Entelektüel İlgisizlik olmak üzere üç boyutta ölçmektedir.

Entelektüel Haz, bireylerin entelektüel uyarıcı etkinliklere katıldıklarında deneyimledikleri olumlu duygusal tepkileri ifade eder. Bu boyut, bireylerin yeni fikirler keşfettiğinde, karmaşık problemleri çözdüğünde veya derinlemesine düşünme süreçlerine katıldığında hissettikleri memnuniyet ve keyfi kapsamaktadır. Entelektüel Özümseme, düşünce veya öğrenme sürecinde tamamen kendini kaptırma durumudur (Csikszentmihalyi, 1990). Bu durumda bireyler zamanın nasıl geçtiğini fark etmezler ve dış dünyayla bağlantılarını kaybederler. Entelektüel İlgisizlik ise entelektüel uğraşlara yönelik ilgi eksikliğini yansıtır (Marin, 1991). Bu boyut, bireylerin düşünmeyi gerektiren etkinliklerden kaçınma eğilimini ve bu tür etkinliklere karşı duyarsızlığını ölçer. Bu üç boyut, bireylerin entelektüel etkinlikleri nasıl deneyimlediğini anlamak için kapsamlı bir çerçeve sunmaktadır.

EDÖ çeşitli kültürlerde kullanılmasına rağmen Türkçeye uyarlanmış versiyonu bulunmamaktaydı. Bu eksiklik, Türk araştırmacıların üniversite öğrencilerinin entelektüel gelişimini incelemesini ve bu alanda yapılacak çalışmaları sınırlandırmaktaydı. Türk kültüründe entelektüel deneyimin nasıl algılandığı ve hangi boyutların öne çıktığı konusunda yapılmış kapsamlı bir çalışma bulunmamaktadır. Bu nedenle, bu çalışma EDÖ'yü Türk kültürüne uyarlamayı ve psikometrik özelliklerini incelemeyi amaçlamıştır.

Yöntem

Katılımcılar: Araştırmaya 2022-2023 bahar döneminde 12 Türk üniversitesinde öğrenim gören 600 öğrenci katılmıştır. Uygun örnekleme yöntemi kullanılmıştır (Büyüköztürk, 2022). Veri taraması sonrası örneklem iki eşit alt örnekleme (n=300) bölünmüştür. İlk alt örneklem Açıklayıcı Faktör Analizi (AFA), ikinci alt örneklem ise Doğrulamalı Faktör Analizi (DFA) için kullanılmıştır. Bu yaklaşım, örnekleme özgü yanlılıkları azaltmak ve ölçüm modelinin çapraz geçerliliğini sağlamak amacıyla psikometrik çalışmalarda önerilmektedir (Worthington & Whittaker, 2006; Brown, 2015; Kline, 2016). Demografik özellikler her iki örnekleme benzerdir: Katılımcıların %53'ü kadın, sınıf düzeyi dağılımı %23 ile %28 arasında değişmekte ve not ortalaması çoğunlukla 2,01-4,00 aralığında bulunmaktadır.

Ölçme Aracı: EDÖ, 51 madde ve 5'li Likert tipi derecelendirmeden oluşmaktadır. Orijinal ölçek Cronbach alfa değerlerini .78 ile .80 arasında göstermiş ve üç faktörlü yapı toplam varyansın %52'sini açıklamıştır (Mayer & Caruso, 1989).

İşlem: Uyarlama süreci, Sinaiko ve Brislin (1973), Hambleton ve Patsula (1999) ile Kılınç ve arkadaşları (2014) tarafından önerilen aşamalar izlenerek üç aşamada yürütülmüştür. Birinci aşamada, dil ve kültür uzmanları tarafından çeviri ve geri çeviri işlemleri gerçekleştirilmiştir. İkinci aşamada dört alan uzmanı ile Lawshe yöntemi kullanılarak kapsam geçerliği değerlendirilmiştir (Ayre & Scally, 2014). Üçüncü aşamada 155 öğrenciyle pilot çalışma yapılmış ve ölçeğin anlaşılabilirliği ile kültürel uygunluğu test edilmiştir. Pilot çalışmanın ardından ölçek 600 öğrenciye çevrimiçi olarak uygulanmıştır.

Veri Analizi: AFA, Promax döndürme ile Temel Eksen Faktörlemesi kullanılarak gerçekleştirilmiştir (Fabrigar vd., 1999). DFA, LISREL 8.80 programı ile yapılmıştır (Jöreskog & Sörbom, 2006). Model uyumu χ^2/sd , RMSEA, CFI, NNFI ve SRMR indeksleri ile değerlendirilmiştir (Brown, 2015; Hu & Bentler, 1999; Kline, 2016). Güvenirlik analizleri Cronbach alfa, McDonald omega, Bileşik Güvenirlik (CR) ve Ortalama Açıklanan Varyans (AVE) ile incelenmiştir (Fornell & Larcker, 1981; Hair vd., 2019).

Bulgular

AFA: Kaiser-Meyer-Olkin (KMO) ölçüsü .878 ve Bartlett küresellik testi anlamlıdır ($p < .001$). Üç faktörlü yapı doğrulanmış, faktör yükleri .401 ile .795 arasında değişmektedir. Toplam varyansın %31,86'sı açıklanmıştır (Entelektüel Haz %16,99; Entelektüel İlgisizlik %11,63; Entelektüel Özümseme %3,23). İstatistiksel ve teorik kriterlere dayanarak 17 madde çıkarılmış, nihai ölçek 34 madde olarak belirlenmiştir.

DFA: Model uyumu iyi düzeydedir ($\chi^2/sd=2,04$; RMSEA=.059; CFI=.94; NNFI=.93; SRMR=.097; GFI=.84; AGFI=.82; NFI=.89). Tüm maddeler ilgili gizil yapılarına anlamlı düzeyde yüklenmiştir. Bu bulgular,

üç faktörlü modelin gözlenen verilerle yeterli düzeyde uyum gösterdiğini ve Türkçe versiyonun yapı geçerliğini desteklemektedir.

Güvenirlilik: Cronbach alfa katsayısı ölçeğin geneli için .851 olarak hesaplanmıştır. Alt boyutlara ilişkin güvenirlik katsayıları Entelektüel Haz için .870, Entelektüel İlgisizlik için .834 ve Entelektüel Özümseme için .758 olarak bulunmuştur. McDonald omega katsayıları .826 ile .895 arasında, Bileşik Güvenirlik değerleri .761 ile .867 arasında değişmektedir. AVE değerleri .289 ile .366 arasındadır.

Betimsel: Genel ortalama puan 3,44 (SS=,48) olarak bulunmuştur. En yüksek ortalama Entelektüel Haz boyutunda (Ort.=4,08, SS=,62), ardından Entelektüel Özümseme (Ort.=3,35, SS=,69) ve Entelektüel İlgisizlik (Ort.=3,01, SS=,75) gelmektedir. Çarpıklık ve basıklık değerleri, ölçek puanlarının dağılımının normal dağılımdan anlamlı düzeyde sapmadığını göstermektedir.

Tartışma ve Sonuç

Bulgular, EDÖ'nün Türkçe versiyonunun üniversite öğrencilerinin entelektüel deneyim düzeylerini belirlemede geçerli ve güvenilir bir ölçme aracı olduğunu göstermektedir. Üç faktörlü yapı başarıyla korunmuş, iç tutarlılık katsayıları kabul edilebilir düzeyde bulunmuştur. Açıklanan varyansın orijinal çalışmaya göre daha düşük olması, bu çalışmada Temel Eksen Faktörlemesi yönteminin kullanılması ve kültürel farklılıklar nedeniyle bazı maddelerin farklı işlev göstermesiyle açıklanabilir. Tüm uyum indeksleri kabul edilebilir düzeydedir (Hu & Bentler, 1999; Kline, 2016).

Katılımcıların en yüksek puanı Entelektüel Haz boyutunda alması, Türk üniversite öğrencilerinin entelektüel etkinliklerden zevk aldığını ve bu tür etkinliklere olumlu duygusal tepkiler verdiğini göstermektedir. Entelektüel İlgisizlik boyutunun en düşük ortalama sahip olması, öğrencilerin entelektüel uğraşlara karşı kayıtsız olmadığını ve genel olarak entelektüel deneyime açık olduklarını düşündürmektedir. Bu bulgular, Türk yükseköğretim sisteminde entelektüel deneyimin olumlu bir şekilde yaşandığını göstermektedir (Astin, 1993; Kuh, 2001).

Sınırlılıklar: Araştırma yalnızca üniversite öğrencileriyle yürütülmüştür; bu nedenle bulgular diğer yaş gruplarına veya farklı kültürel ortamlara genellenemez. Öz bildirime dayalı veriler, katılımcıların yanıt verme eğilimlerinden kaynaklanan olası yanlılıkları içerebilir. Kesitsel tasarım nedeniyle entelektüel deneyim ile diğer değişkenler arasında nedensel ilişkiler hakkında kesin çıkarımlar yapılamamaktadır.

Öneriler: Gelecek araştırmalarda EDÖ'nün lise öğrencileri, yetişkinler veya farklı meslek grupları gibi diğer popülasyonlarda da geçerlik ve güvenirliğinin incelenmesi önerilmektedir. Entelektüel deneyimin akademik başarı, bilişsel yetenek ve kişilik özellikleri ile ilişkisi araştırılmalıdır. Ayrıca, entelektüel deneyimin zaman içindeki değişimini inceleyen boylamsal çalışmalar yapılmalıdır.

Sonuç olarak, EDÖ'nün Türkçe versiyonu, üniversite öğrencilerinin entelektüel deneyimini ölçmede geçerli ve güvenilir bir araçtır. Bu çalışma Türk yükseköğretiminde entelektüel deneyim alanındaki önemli bir boşluğu doldurmuş, araştırmacılar ve eğitimciler için değerli bir ölçme aracı sunmuştur.

Anahtar Kelimeler: entelektüel deneyim, ölçek uyarlama, geçerlik, güvenirlik, yükseköğretim

Ek 1. Entelektüel Deneyim Ölçeği Uygulama Formu

Aşağıda düşünme, problem çözme, yeni fikirler geliştirme, entelektüel etkinliklerden hoşlanma ve düşünsel deneyimlerinize ilişkin çeşitli ifadeler yer almaktadır. Lütfen her bir ifadeyi dikkatlice okuyarak sizi en iyi yansıtan seçeneği işaretleyiniz. Her ifade için yalnızca bir seçeneği işaretleyiniz.

Ölçek 5'li Likert tipindedir: Kesinlikle Katılmıyorum (1), Katılmıyorum (2), Ne Katılıyorum Ne Katılmıyorum (3), Katılıyorum (4), Kesinlikle Katılıyorum (5). Kaynak formda toplam 34 madde bulunmaktadır.

No	Madde	1	2	3	4	5
1	Bazen bir sorun üzerinde çalışırken kendimi “Bundan hoşlandım” ya da “Bu gerçekten eğlenceli” derken bulurum.	☐	☐	☐	☐	☐
2	“Entelektüel” düşünme sadece bir angaryadır; hayatta ondan daha önemli şeyler vardır.	☐	☐	☐	☐	☐
3	Fazla enerji harcamadan bir konuya kolayca odaklanabilirim.	☐	☐	☐	☐	☐
4	Bir konuya yoğunlaştığımda, dikkatimi tamamen oraya veririm.	☐	☐	☐	☐	☐
5	Entelektüel sorun çözme konusunda çok iyi değilimdir.	☐	☐	☐	☐	☐
6	Soyut entelektüel tartışmalarla ilgilenmem.	☐	☐	☐	☐	☐
7	Bazen bir sorunu çözerken zihnim tamamen kendi iradesiyle doğru yöne yönelir.	☐	☐	☐	☐	☐
8	Bir fikir beni çok heyecanlandırırken diğer insanlar genellikle heyecanımı anlar.	☐	☐	☐	☐	☐
9	Odaklandığımda, bazen sanki diğer insanlar yokmuş gibi hissedirim.	☐	☐	☐	☐	☐
10	Tarihteki büyük düşünürlerin üzerinde çalıştıkları şeye olan ilgilerini nasıl kaybetmediklerini anlamakta zorlanırım.	☐	☐	☐	☐	☐
11	Zor bir problemi kavradıktan sonra kendimi çok iyi hissedirim.	☐	☐	☐	☐	☐
12	Bazen bir sorunu o kadar canlı hayal ederim ki neredeyse sorunun tam ortasında yaşıyormuşum gibi hissedirim.	☐	☐	☐	☐	☐
13	Yeni fikirler edinmek beni heyecanlandırır.	☐	☐	☐	☐	☐
14	Çoğu entelektüel sorunu başka insanlardan daha iyi ve daha hızlı çözebilirim.	☐	☐	☐	☐	☐
15	Entelektüel tartışmalar hiçbir zaman hiçbir şeyi çözmez, sıkıcı ve zaman kaybedirler.	☐	☐	☐	☐	☐
16	Entelektüel açıdan kendime nadiren güvenirim.	☐	☐	☐	☐	☐
17	Bazen bir sorun üzerinden çalışırken, onu çözmek değil anlamak bile mutlu eder.	☐	☐	☐	☐	☐
18	Gerçekten ilgilendiğim bir konuda düşünmek çok hoşuma gider.	☐	☐	☐	☐	☐
19	Bir konu ilgimi çektiğinde, zaman çok hızlı akar.	☐	☐	☐	☐	☐
20	Bir konuyu hayatının amacı haline getirmek veya onun üzerine bir kişilik imajı inşa etmek anlamsızdır.	☐	☐	☐	☐	☐
21	Bir konu ilgimi çektiğinde o konuyla ilgili her şeyi okumak ihtiyacı hissedirim.	☐	☐	☐	☐	☐
22	Bir sorunu çözdükten sonra, geri dönüp problemi nasıl bir mantıkla çözdüğümü bulurum.	☐	☐	☐	☐	☐
23	Çalıştığım şeyi anlamam hem konuyu hem de kendimi daha derinden anlamamı sağlar.	☐	☐	☐	☐	☐
24	Fikirlerimi yazmak ya da başkalarına anlatmak için zahmete girmem.	☐	☐	☐	☐	☐
25	Bazen nefesim kesilir ve aniden yeni bir fikir keşfettiğimi ve bir konuyla gerçekten ilgilendiğimi fark ederim.	☐	☐	☐	☐	☐
26	Bazen odaklanmayı çaba gerektirmeyen bir enerji akışı gibi hissedirim.	☐	☐	☐	☐	☐
27	Eğer bir konuyla ilgili yeni bir düşünme tarzı geliştirsem kendimi çok iyi hissedirim.	☐	☐	☐	☐	☐
28	Elimden gelenin en iyisini yapabilmek için bir şeyi mükemmel bir şekilde yapana kadar bir konunun üzerinde çalışmak hoşuma gider.	☐	☐	☐	☐	☐
29	Bir sorun üzerinde çalışmak benim için sadece entelektüel bir şeydir ve bu konuyla ilgili hayal kırıklığı yaşamam ya da mutluluk hissetmem.	☐	☐	☐	☐	☐
30	İlgimi çeken konular üzerine düşünmek için belirli zaman dilimleri ayırmaya çalışırım.	☐	☐	☐	☐	☐
31	Hayat amaçlarım ve gelecek ile ilgili planlarım benim için pek açık değil.	☐	☐	☐	☐	☐
32	Bir iş insanı ve mühendis toplum için bir sanatçı ya da bilim insanından daha önemlidir.	☐	☐	☐	☐	☐
33	Şu an ne yaptığıma o kadar çok odaklanırım ki bazen geçmiş ya da gelecek ile ilgili pek düşünmem.	☐	☐	☐	☐	☐
34	Hayat üzerine düşünmek çok önemlidir.	☐	☐	☐	☐	☐

Ölçeğin Boyutları ve Maddeleri:

- ❖ Entelektüel Haz (17 madde): 1, 5, 8, 11, 13, 15, 17, 18, 19, 21, 23, 25, 27, 28, 30, 33, 34. Maddeler;
- ❖ Entelektüel İlgisizlik (10 madde): 2, 6, 10, 14, 16, 20, 22, 24, 29, 31. Maddeler;
- ❖ Entelektüel Özümseme (7 madde): 3, 4, 7, 9, 12, 26, 32. maddelerden oluşmaktadır.
- ❖ Ölçek 5'li Likert tipindedir ve Entelektüel İlgisizlik alt boyutundaki maddeler ters puanlanmaktadır.

- ❖ Güvenirlik: Ölçeğin Türkçeye uyarlanmasına ilişkin yapılan geçerlik-güvenirlik çalışmasında (n=600) elde edilen iç tutarlılık katsayıları şu şekildedir.
 - Entelektüel Haz: Cronbach $\alpha = .870$, McDonald $\omega = .895$, CR = .867;
 - Entelektüel İlgisizlik: $\alpha = .834$, $\omega = .871$, CR = .846;
 - Entelektüel Özümseme: $\alpha = .758$, $\omega = .826$, CR = .761;
 - Ölçek geneli: $\alpha = .851$, $\omega = .831$.
- ❖ Doğrulayıcı Faktör Analizi sonuçları üç faktörlü yapıyı desteklemektedir ($\chi^2/sd = 2.04$; RMSEA = .059; CFI = .94; NNFI = .93; SRMR = .097).

NOT: Bu ölçek bilimsel çalışmalarda kaynak gösterilerek izin alınmaksızın kullanılabilir.