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Development and psychometric validation of a PERMA-based flourishing scale for university students

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Abstract

This study developed and validated a flourishing scale grounded in the PERMA model, specifically designed for education students. The instrument comprises five core dimensions: Positive Emotion, Engagement, Relationships, Meaning, and Accomplishment, using a Likert scale format. A cross-sectional survey was conducted with 305 students aged 18 to 25, and the Rasch Model was applied to assess the scale's validity and reliability. Results indicated that the scale achieved unidimensionality, demonstrating its effectiveness in measuring the flourishing construct. Item-fit and demographic bias analyses confirmed the validity of most items, while high person and item reliability scores, along with strong internal consistency, supported the instrument's robustness. Analysis of item difficulty revealed that the scale is accessible and suitable for the target student population. The findings emphasize the scale's applicability for assessing multidimensional well-being in higher education contexts. The study also highlights opportunities for further refinement, including the integration of resilience and cross-cultural adaptation dimensions to enhance its comprehensiveness. Overall, the research establishes the PERMA-based flourishing scale as a valid and reliable tool for evaluating student well-being and provides a foundation for interventions aimed at promoting mental health and holistic development in educational settings.

Keywords: Assessment tool; higher education; PERMA model; student well-being; validation study.

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1. INTROUCTION

Over recent decades, scholarly inquiry into happiness and well-being has primarily aimed to elucidate the determinants of individual happiness and thriving. To advance conceptual clarity, two predominant frameworks are frequently examined: hedonic and eudaimonic well-being. The hedonic framework emphasizes life satisfaction and the relative prevalence of positive versus negative affect, whereas the eudaimonic framework centers on meaningful engagement with social roles and the pursuit of life purpose (Ryff & Singer, 2000). Additionally, the eudaimonic approach underscores the significance of self-actualization and the cultivation of constructive social relationships (Ryff, 1989). Contemporary empirical studies employing experience sampling methods indicate that both hedonic and eudaimonic motives independently predict well-being outcomes, underscoring their dynamic interaction in daily life (Van Halem et al., 2024).

Consensus regarding the precise demarcation between hedonic and eudaimonic well-being remains elusive. Hedonic well-being is generally associated with the pursuit of pleasure and avoidance of discomfort, while eudaimonic well-being emphasizes personal growth and self-realization (Ryan & Deci, 2001). Nonetheless, there is broad agreement that both dimensions constitute essential components of overall well-being. Together, they contribute to a more integrative construct of flourishing, which encompasses both subjective happiness and a meaningful existence (Diener et al., 2010). Flourishing is conceptualized as the apex of well-being, integrating elements such as positive affect, engagement, supportive relationships, life purpose, and achievement (Seligman, 2011). Longitudinal evidence suggests that flourishing mental health predicts superior subsequent quality of life, highlighting its role as a distinct and consequential facet of positive functioning (Kim et al., 2025).

From a broader perspective, flourishing also incorporates social and sustainability dimensions, rendering it pertinent to collective well-being (Huppert & So, 2013). Recognizing flourishing as an amalgamation of individual and social well-being is crucial for initiatives aimed at enhancing societal quality of life (Keyes, 2002). Flourishing is synonymous with elevated mental well-being and represents an optimal state of psychological health (Huppert, 2009; Keyes, 2002; Ryff & Singer, 1998). Evidence from cross-sectional, longitudinal, and experimental research consistently demonstrates that high levels of well-being are associated with numerous beneficial outcomes, including enhanced learning, heightened productivity and creativity, positive interpersonal relations, prosocial behaviors, and improved physical health and longevity (Chida & Steptoe, 2008; Dolan et al., 2008; Huppert, 2009; Lyubomirsky et al., 2005; Villieux et al., 2016). Recent investigations among students indicate that educational experiences influence both hedonic and eudaimonic well-being, highlighting their relevance in higher education contexts (Zhao & Hua, 2025).

Individuals who experience flourishing perceive life experiences as inherently meaningful, which motivates the pursuit of personal goals, fosters constructive social relationships, and facilitates societal contributions (Huppert, 2009). Although the pursuit of well-being and the good life has been a longstanding human concern, the utility of systematically measuring well-being, particularly flourishing, has only recently been emphasized (Bohlmeijer et al., 2015). The operationalization of flourishing initially relied on the mental health continuum developed by Keyes (Keyes, 2002). Subsequently, Diener et al. (2010) introduced the Flourishing Scale to quantify well-being, focusing on dimensions such as happiness, mental health, and psychosocial functioning.

Seligman (2011) later expanded this instrument to encompass the five elements of PERMA: positive emotion, engagement, relationships, meaning, and accomplishment, thereby providing a more comprehensive assessment of well-being. The PERMA flourishing scale has been adapted and validated across diverse national contexts, including Saudi Arabia (Lambert D'raven & Pasha-Zaidi, 2016), Portugal (Mendes et al., 2022), China (Yang & Mohd, 2021), Germany (Wammerl et al., 2019), Hong Kong (Lai et al., 2018), Russia (Didino et al., 2019), Malaysia (Shanmugam & Hidayat, 2022), Spain (Checa et al., 2018), Brazil (de Carvalho et al., 2023), and Australia (Ryan et

al., 2019). These studies indicate that the instrument consistently captures the construct of flourishing across cultural contexts while remaining adaptable to local cultural nuances.

Despite the widespread recognition of the PERMA flourishing scale as a tool for assessing individual well-being, its application within the population of education students has been limited. Existing studies predominantly focus on general higher education populations, without considering the specific academic and professional challenges faced by education students (Przybylko et al., 2022). Moreover, few investigations have examined the relationship between PERMA-based flourishing and the development of teacher professional identity, an essential component of educator preparation (Rachmawati & Lidyasari, 2024).

Well-being among education students significantly influences their academic performance and capacity development as future educators (Ly & Nguyen, 2024). This study investigates the empirical construct of flourishing within the context of Indonesian education students, exploring how they experience positive well-being amid the demands of academic life and teacher training. While prior research has examined flourishing among university students generally (Fathi & Derakhshan, 2019), focusing on education students in Indonesia allows for a nuanced understanding of factors affecting their flourishing, including societal expectations of teachers (Kristiawan, 2015), systemic challenges in education (Mulyasa, 2013), and the integration of local wisdom values in teacher preparation.

1.1. Literature review

Research on individual self-actualization, life satisfaction, and the constructive dimensions of human behavior continues to attract substantial scholarly attention (Compton & Hoffman, 2019). The concept of flourishing is fundamentally linked to both hedonic and eudaimonic frameworks, which themselves emerge from longstanding philosophical and psychological traditions (Keyes & Haidt, 2003). Within the eudaimonic tradition, well-being is conceptualized as distinct from subjective well-being (Mazza et al., 1996; Ryff et al., 2001) and encompasses both private and public spheres of positive functioning, including psychological and social well-being (Keyes, 2002; Ryff et al., 2001).

Prominent scholars such as Huppert (2009), Keyes (2002), Diener, and Seligman (2011) have each contributed to the theoretical and empirical development of flourishing, emphasizing different facets of the construct (Hone et al., 2014). The term flourishing was introduced by Keyes, who operationalized it through three primary domains: positive relationships, meaning or life purpose, and self-acceptance or self-esteem (Keyes, 2002). Etymologically, the word flourish derives from the Latin flor, meaning flower, and the Indo-European root bhlo, signifying blooming or to bloom. In contemporary usage, flourishing is generally understood as the realization of individual potential across spiritual, developmental, or economic domains, achieving success, or contributing meaningfully to society (Gokcen et al., 2012). According to Seligman (2011), the overarching objective of positive psychology in relation to well-being theory is to promote flourishing within individual lives (Austin, 2017).

The initial operationalization of flourishing emphasized happiness and life satisfaction; however, the construct has since expanded to incorporate emotional, psychological, and social dimensions, as reflected in Keyes's (2002) flourishing scale. This instrument evaluates critical aspects of psychosocial well-being, including life purpose, supportive relationships, engagement and interest in activities, contributions to the welfare of others, competence, self-acceptance, optimism, and social respect (Diener et al., 2009). It aligns with broader subjective well-being approaches that had previously focused primarily on happiness and life satisfaction (Diener et al., 2010). In contrast, Ryff and Singer (2000) proposed a more comprehensive measure of psychological well-being encompassing six dimensions, including autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance.

Building upon these foundations, Seligman (2011) introduced the PERMA model, which operationalizes flourishing through five core dimensions: positive emotion, engagement, relationships, meaning, and

accomplishment. The PERMA flourishing scale has been widely adopted across cultural research, although some critiques have highlighted its limited sensitivity to context-specific cultural factors (Khaw & Kern, 2014).

Empirical studies have demonstrated the applicability and relevance of the PERMA framework in educational contexts. The model serves as a holistic tool for assessing well-being, capturing emotional, social, and existential dimensions (Seligman, 2011). Individuals who fulfill the five PERMA elements are more likely to experience meaningful lives and achieve optimal well-being (Slavin et al., 2014). Butler and Kern further developed the PERMA Profiler, a versatile assessment instrument validated across diverse populations, including university students (Butler & Kern, 2016). Recent research indicates that the PERMA Profiler can be effectively employed within the Indonesian context, with recommendations for cultural adaptation to enhance its relevance and accuracy (Elfida et al., 2021).

1.2. Purpose of study

Consequently, there is a pressing need to develop a PERMA flourishing scale tailored to the specific characteristics and challenges of education students at Universitas Pendidikan Indonesia. Such an instrument would provide a more precise measurement of their well-being while supporting the cultivation of their professional capacities as future educators.

2. METHODS AND MATERIALS

2.1. Research design

This study employs a cross-sectional survey approach to collect data within a specific time frame, allowing for the simultaneous analysis of relationships between variables across different populations (Creswell, 2003). In addition, theoretical reviews and prior research findings were utilized to construct the concept of flourishing, focusing on the integration of relevant concepts from diverse studies (Keyes, 2002; Diener et al., 2010). This approach also incorporates the adoption of best practices from various cultural, social, and individual contexts to ensure that the development of the flourishing instrument is universally applicable and aligned with the participants' backgrounds (Seligman, 2011). Such a strategy strengthens the theoretical and practical validity of comprehensively understanding and measuring the dimensions of flourishing.

2.2. Instrument development

The PERMA flourishing scale represents a widely utilized instrument within psychological assessment. The standardization of psychological measures is critical for ensuring that researchers, even when conducting independent investigations, can generate results that are comparable or at least functionally equivalent (Urbina, 2014). The development of the PERMA flourishing scale encompasses several key stages, including the conceptual definition of operational constructs, item generation, expert review of items, readability evaluation, item selection, assessment of psychometric properties, and the finalization of the instrument. Each of these stages is outlined in detail below.

2.2.1. Defining operational constructs

In the present study, flourishing is operationally conceptualized as the optimal condition of happiness and well-being among students, encompassing five primary dimensions as delineated by the PERMA model. Positive Emotion refers to the experience of sustained positive affect, including feelings of happiness, gratitude, and optimism. Engagement denotes the extent to which students are fully absorbed in activities that correspond to their strengths and interests, generating intrinsic satisfaction and a sense of flow. Relationships reflect the quality of interpersonal connections, encompassing social support, trust, and a sense of belonging, which collectively contribute to social well-being. Meaning pertains to the perception of life purpose, arising from alignment with broader goals, personal values, or contributions to societal welfare. Achievement encompasses the attainment of goals through focused and productive effort, fostering self-efficacy, confidence, and self-appreciation.

2.2.2. Item drafting

The instrument was developed using a Likert scale format, selected due to its widespread use across multiple research disciplines, including sociology, psychology, information systems, political science, and economics. The Likert scale continues to be one of the most prevalent and widely endorsed methodologies in social science research (Taherdoost, 2019). For the purposes of this study, a semantic differential Likert scale with a response range from 0 to 10, representing "strongly disagree" to "strongly agree," was employed. While there is no universally prescribed standard for the number of scale points, this flexibility does not undermine the psychometric integrity of the instrument, permitting researchers to adjust response options as appropriate (Menold & Bogner, 2016).

The scale consists of 55 items, constructed with careful attention to readability, clarity, contextual relevance, and the exclusion of content knowledge, social bias, or social desirability influences. Examples of items reflecting the five dimensions of flourishing are presented below.

Table 1

Example of item formulation

Dimension	No item	Statement
Positive Emotion	1	How important is it for you to feel happy when attending in-person lectures?
Engagement	22	How often do you take the initiative to look for reference books for courses you plan to enroll in?
Relationship	24	How often do your parents inquire about the GPA you achieve?
Meaning	21	How often do you feel that final exams are meaningful for strengthening your commitment as a student?
Accomplishment	5	How often do you achieve your goals in completing independent assignments?

2.2.3. Rational validation

Rational validation was performed by three experts with specialized knowledge in flourishing assessment and education to examine the clarity and content relevance of each item. In addition, a readability evaluation was conducted with five pre-service students representing five distinct study programs to assess linguistic clarity and alignment with the intended behavioral content. Findings from both expert and student validation indicated that all 55 items were appropriate for subsequent testing, with only minor modifications implemented to refine phrasing, sentence structure, and contextual alignment with the behaviors described.

2.3. Participants

The study sample consisted of 305 students enrolled in education programs, selected using a non-probability sampling technique, specifically convenience sampling. This approach was chosen for its practicality and voluntary participation, while also ensuring that the participant-to-item ratio met the recommended minimum of five to ten times the number of items under development (Crocker, 2015). Participants were in the emerging adulthood stage, aged 18 to 25 years, a period representing the transitional phase from adolescence to full adulthood (Arnett, 2000). The sample size satisfied the criteria necessary to maintain stable item calibration for Rasch model analysis (Linacre, 1994). At a 95% confidence level, stable calibration within a ±0.5 logit range requires 64 to 144 respondents, with an optimal target of approximately 100 participants (Linacre, 1994; Sumintono, 2015).

The survey was administered via Google Forms and disseminated through department heads, student WhatsApp groups, and flyers posted across various programs. After an initial two-week period, the minimum

required sample size had not been attained. Consequently, the data collection period was extended by one week. By the conclusion of the extended period, the target sample size was achieved, comprising 305 eligible participants, including 224 females and 81 males.

2.4. Data analysis

Item difficulty and item fit are central to evaluating the extent to which an instrument generates accurate and reliable data. A widely employed method for analyzing such measurement tools is the Rasch model, which offers detailed information on unidimensionality, item-person mapping (Wright maps), and comprehensive item analyses, including difficulty parameters and item fit.

The Rasch model, applied using software such as Winsteps version 4.4.5, facilitates a rigorous assessment of the alignment between individual items and respondents' abilities. This approach provides critical insights into rating scale functioning and individual performance, enabling a thorough evaluation of the instrument's psychometric properties (Bond & Fox, 2013). By employing this methodology, researchers can ensure that the instrument measures the intended construct accurately and without bias, thereby enhancing both the validity and reliability of the resulting data.

3. RESULTS

Within the Rasch model framework, an effective measurement instrument must demonstrate robust evidence of both validity and reliability. Validity can be assessed through indicators such as scale accuracy, unidimensionality, item difficulty, item fit, and potential item bias. Reliability encompasses the evaluation of the consistency of items, the consistency of respondents, and the correspondence between items and respondents. In this study, item analysis was conducted using Winsteps software version 4.4.8. The results of the psychometric evaluation of the pre-service teacher professional identity scale are presented below.

3.1. Scale accuracy analysis

A scale accuracy assessment was conducted to evaluate the appropriateness of the instrument and to ensure that respondents were not confused when providing answers. Rating scale analysis serves as a validity check to determine whether the response options presented in the instrument are clear and interpretable for participants (Sumintono, 2015). The original instrument employed a 0–10 scale; however, inconsistencies were observed in certain response categories, resulting in Andrich Threshold values that did not progress in the expected order from negative to positive. Consequently, a recoding procedure was implemented: scale 0 remained unchanged, scales 1 and 2 were combined into 1, scales 3 and 4 into 2, scales 5 and 6 into 3, scales 7 and 8 into 4, and scales 9 and 10 into 5. This recoding yielded a revised 0–5 scale, which was subsequently reanalyzed to assess the accuracy of the adjusted scale. The results of the scale accuracy evaluation for both the original 0–10 scale and the recoded 0–5 scale are presented in the table below.

Table 2

Results of the scale accuracy

Skala	*Observed Count*	*Observed Average*	*Andrich Threshold*
0	598	-0.13	NONE
1	1146	-0.06	-0.90
2	1775	0.08	-0.41
3	3613	0.42	-0.37
4	5782	0.89	0.21
5	3861	1.33	1.48

The findings of the scale accuracy (rating scale) assessment indicate a progressive increase in logit values across the response categories. The average logit values began at -0.13 for scale 0, increased to -0.06 for scale 1, 0.08 for scale 2, 0.42 for scale 3, 0.89 for scale 4, and 0.64 for scale 5. These observations correspond with the Andrich Threshold values, which followed the expected sequence of None, -0.90, -0.41, -0.37, 0.21, and 1.48. This pattern confirms that the revised 0–5 rating scale for the Flourishing Scale is psychometrically appropriate. Conceptually, Andrich Threshold values should progress from none to negative and subsequently to positive values (26;27).

3.2. Unidimensionality analysis

Unidimensionality analysis was performed to assess the construct validity of the developed instrument, with a focus on measuring the flourishing construct (Sumintono, 2015). According to psychometric standards, the minimum acceptable threshold for unidimensionality is that the measures explain at least 20% of the raw variance. Values above 40% are considered indicative of good measurement quality, while those exceeding 60% represent exceptional quality. The results of this unidimensionality evaluation are presented below.

Figure 1

Unidimensionality test

	Eigenvalue	Observed		Expected
Total raw variance in observations =	86.1291	100.0%		100.0%
Raw variance explained by measures =	31.1291	36.1%		39.1%
Raw variance explained by persons =	6.2213	7.2%		7.8%
Raw Variance explained by items =	24.9079	28.9%		31.3%
Raw unexplained variance (total) =	55.0000	63.9%	100.0%	60.9%
Unexplned variance in 1st contrast =	6.4125	7.4%	11.7%	
Unexplned variance in 2nd contrast =	4.1762	4.8%	7.6%	
Unexplned variance in 3rd contrast =	3.0191	3.5%	5.5%	
Unexplned variance in 4th contrast =	2.8135	3.3%	5.1%	
Unexplned variance in 5th contrast =	2.4047	2.8%	4.4%	

The unidimensionality analysis revealed that the raw variance explained by the measures was 36.1%, indicating that the PERMA flourishing scale effectively captures the flourishing construct among prospective teacher students, accounting for 37.4% of the observed variance. Furthermore, the unexplained variance associated with the first through fifth contrasts remained below the recommended threshold of 15%, with values of 12.2%, 8.1%, 5.6%, 5.2%, and 4.3%, respectively. These results confirm that the instrument accurately measures the intended flourishing construct within this population.

3.3. Content validity analysis

Within the Rasch model framework, items that do not conform to the expected measurement pattern are identified as misfit. Item fit is typically evaluated using three criteria: Outfit mean square (MNSQ), Outfit Z-standardized (ZSTD), and point-measure correlation (Pt-Measure Corr), with specified thresholds for acceptable values:

1) 0.5 < Outfit MNSQ < 1.5

2) -2.0 < Outfit ZSTD < +2.0

3) 0.4 < Pt-Measure Corr < 0.85 (26; 27).

An item is considered invalid, or misfitting, only if it fails to meet the criteria across all three indicators (Aziz, 2010). The following table summarizes the misfit items identified within each dimension of the Flourishing Scale based on these three evaluation criteria.

Table 3

Summary of misfit items based on item fit order

Criteria Item *Fit*	Item *Misfit*					
	P	**N**	**E**	**R**	**M**	**A**
0.5 < *Outfit MNSQ* < 1.5	-	~~3, 22, 40~~	~~2~~	~~18, 24~~	-	~~23~~
-2.0 < *Outfit ZSTD* < +2.0	10, 20, 26, 44, 48	~~3,~~ 6, 13, 16, ~~22, 40,~~ 52	~~2,~~ 4, 9, 15, 19, 36, 38	7, 14, ~~18, 24,~~ 28, 45,47, 50	12, 21, 29, 35, 37, 42, 54	5, 17, ~~23,~~ 27, 33, 34, 51
0.4 < *Pt-Measure Corr* < 0.85	1	~~3,~~ 6, 11, 13, 16, ~~22,~~ 31, ~~40,~~ 52	~~2,~~ 4, 15, 19	~~18, 24~~	12, 54	~~23,~~ 55
Total item *misfit*	0 item	3 item	1 item	2 item	0 item	1 item

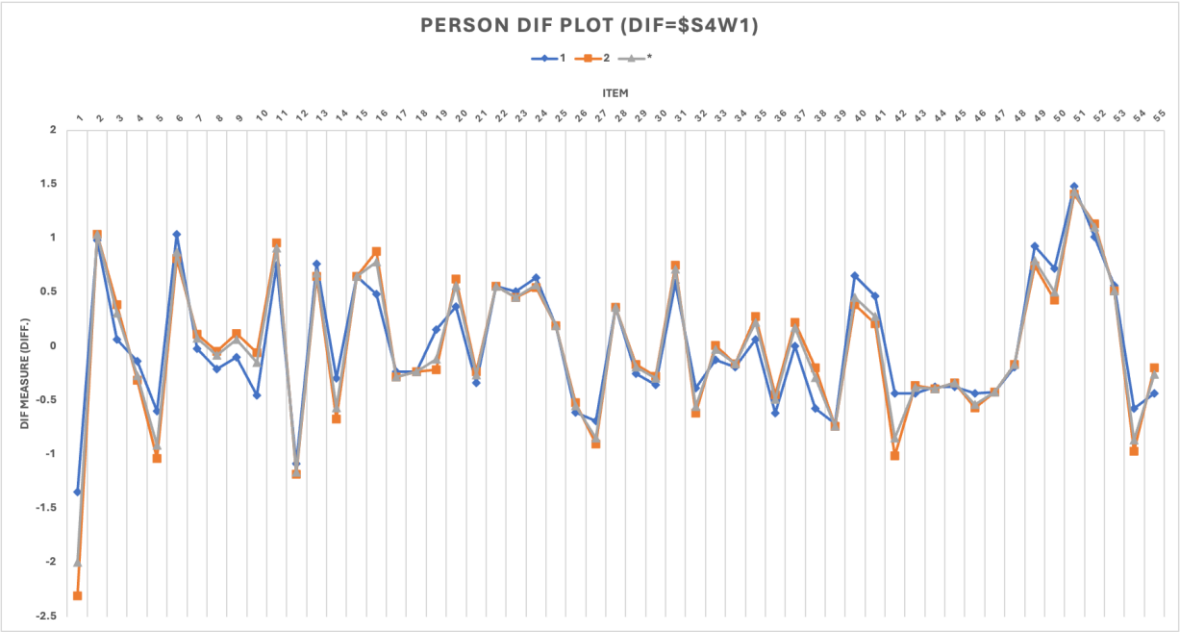
The items that were discarded are those identified as misfit across all three criteria. The validity analysis revealed 7 misfit (invalid) items, specifically: item numbers 3, 22, and 40 under the Negative Emotion (N) indicator; item numbers 18 and 24 under the Relationship (R) indicator; and item number 23 under the Accomplishment (A) indicator.

3.4. Item bias analysis

Item bias analysis was conducted considering respondent demographics, specifically gender and semester. Differential item functioning (DIF) analysis based on gender identified 15 items exhibiting significant bias, as indicated by probability values below 0.05 (prob < 0.05). The table below summarizes the items demonstrating gender-related bias at this threshold. The corresponding figure visualizes item bias by gender, highlighting significant differences across the three measurement points for each item on the Flourishing Scale.

Figure 2

Item bias by gender



Across the five stages of instrument evaluation, seven items were identified as misfitting, fifteen items exhibited gender-based bias, and three items demonstrated semester-related bias. Consequently, the finalized instrument comprises 35 valid items suitable for measuring flourishing among prospective teachers. Overall, 63.36% of the original 55 items were retained as valid, ensuring the scale's suitability for assessing the intended construct.

3.5. Reliability analysis

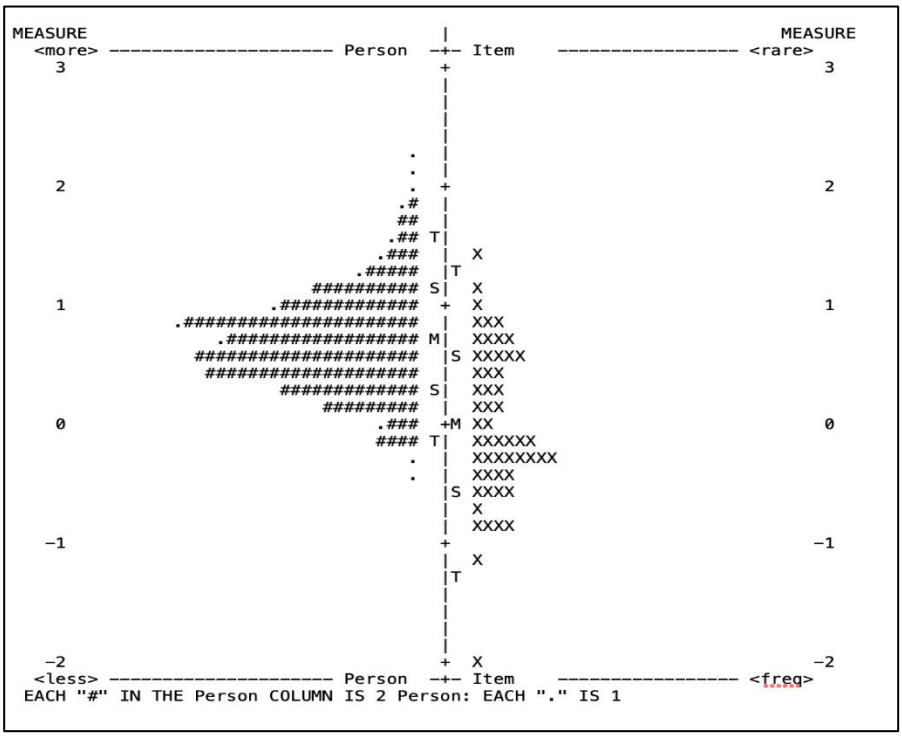
Reliability analysis using the Rasch model produced the following results: (1) the consistency of respondents' answers on the Flourishing Scale, as indicated by a person reliability of 0.87, was classified as good; (2) the quality of the instrument, based on item reliability, was 0.99, reflecting excellent measurement precision; (3) the interaction between respondents and items, assessed via Cronbach's alpha, was 0.90, indicating very good internal consistency; (4) the Flourishing Scale effectively differentiated the sample into four respondent groups, with a person separation index of 2.59 and a strata separation value of H = 3.78 (rounded to four respondent strata). Furthermore, the instrument's item difficulty spanned 14 levels, as indicated by an item separation index of 10.01 and a strata separation value of H = 13.68 (rounded to fourteen difficulty strata).

3.6. Wright map analysis (person-item map)

The abilities of the prospective teachers spanned from -0.37 logits to +2.23 logits, with a mean of +0.70 logits, surpassing the average item difficulty of 0.00 logits. This indicates that, on average, the prospective teachers demonstrate higher ability levels than the average difficulty of the Flourishing Scale items. The item difficulties themselves ranged from -2.00 logits to +1.43 logits, with a mean of 0.00 logits. Consequently, the Flourishing Scale items are generally easy for the prospective teachers to endorse. The distributions of respondent abilities and item difficulties are illustrated in the following Wright map.

Figure 3

Wright map analysis



4. DISCUSSION

The primary objective of this study was to adapt the Flourishing Scale PERMA, as developed by Seligman (2011), to reflect the characteristics and specific challenges of students enrolled in education programs at Universitas Pendidikan Indonesia. The PERMA framework, widely regarded as a universal construct within positive psychology, measures essential aspects of human well-being (Seligman, 2011) and has been extensively applied in international research to assess student well-being (Butler & Kern, 2016). However, its implementation with diverse populations requires careful adaptation and validation to maintain relevance across varying cultural and social contexts (Butler & Kern, 2016; Hone et al., 2015).

Using the Rasch model, the instrument achieved unidimensionality of 36.1%, demonstrating its effectiveness in capturing the flourishing construct among students. This level of unidimensionality indicates that each dimension of PERMA is interrelated and collectively contributes to a holistic understanding of well-being. These results are consistent with psychometric standards outlined by Linacre (1994) and Bond & Fox (2013), which consider unidimensionality above 20% as evidence of adequate construct validity. Validity is further reinforced by the practical implications of measurement, such as its influence on the learning experiences of prospective teachers (Slavin et al., 2014). Rasch analysis, supported by Winsteps software, provided empirical validation and confirmed the instrument's applicability in educational contexts (Butler & Kern, 2016). Therefore, the 36.1% unidimensionality demonstrates the consistency of the instrument in measuring flourishing and ensures that all PERMA dimensions are meaningful in higher education settings.

Content and construct validity were evaluated by experts in psychology and education to ensure that the items accurately represented the constructs. This aligns with prior research emphasizing that construct representation must reflect the cultural and social context of respondents. Item fit analysis, using Outfit MNSQ and Outfit ZSTD criteria, identified seven misfitting items that required revision to enhance measurement precision, corroborating previous findings that misfit items reduce instrument accuracy and introduce bias (Wright & Stone, 1979). Through expert judgment, content validity was strengthened, ensuring that the items reflected the five PERMA components and accurately measured the intended construct, in accordance with AERA and APA standards. Following revisions, the instrument was reduced from 55 to 35 items, each reflecting real-life student experiences, thereby reinforcing the link between the items and the PERMA framework and improving measurement accuracy.

Reliability analyses indicated that the instrument exhibited very high internal consistency, with a Cronbach's alpha of 0.90 (George & Mallery, 2016). Person reliability was 0.87, indicating consistent responses from participants, while item reliability was 0.99, reflecting strong internal consistency among items in measuring flourishing. The separation indices further confirmed the instrument's sensitivity, differentiating respondents' levels of flourishing and capturing a range of item difficulties, consistent with the principles of Rasch theory (Wright & Stone, 1979). These findings support the use of the instrument as a reliable and consistent tool for assessing student well-being across multiple contexts.

The instrument demonstrated robust validity and reliability while accounting for demographic biases, including gender and semester. Bias analysis is critical in psychometrics to ensure that the instrument measures the intended construct without distortion from irrelevant variables (Wright & Stone, 1979). Nonetheless, broader applications would require additional validation across variables such as socioeconomic status, educational background, and culture to maintain measurement accuracy.

A key adjustment involved recoding the original 0–10 response scale to a 0–5 scale to enhance measurement accuracy and ease of response. Research indicates that smaller scales reduce confusion and facilitate respondent decision-making, improving data quality (Taherdoost, 2019; Sumintono, 2015). From a Rasch analysis perspective, simplifying the scale addresses disordered Andrich thresholds that can undermine scale validity (Bond & Fox,

2013; Menold & Bogner, 2016). The 0–5 scale also accommodates populations prone to extreme responses without reducing sensitivity to variation in flourishing levels (Huppert & So, 2013).

Overall, the instrument presents a robust framework for measuring flourishing. While its current application is specific to students at Universitas Pendidikan Indonesia, additional validation is required for other populations to ensure consistent reliability and validity (Butler, 2016; Wright & Stone, 1979). The instrument aligns with the theoretical foundations of flourishing, particularly Seligman's PERMA model, which defines well-being as a multidimensional state encompassing positive emotion, engagement, relationships, meaning, and accomplishment (Seligman, 2011). Each dimension was contextualized within students' academic and social activities, including lectures, group assignments, discussions, and extracurricular engagement, demonstrating sensitivity to the higher education environment in Indonesia.

This research highlights that flourishing encompasses both hedonic and eudaimonic aspects of well-being, combining subjective happiness with meaningful engagement and life purpose (Keyes & Haidt, 2003). The instrument captures these dimensions, measuring not only positive emotions but also engagement and meaning, which are essential for students' learning experiences. Some critiques of PERMA note the absence of resilience, a key factor in higher education contexts with high academic and social pressures (Hone et al., 2014). Incorporating resilience in future iterations could further strengthen the instrument by capturing students' capacity to cope with challenges and maintain well-being (Schotanus et al., 2017).

In conclusion, this study successfully developed an instrument that aligns with Seligman's (2011) PERMA theory while providing valid, reliable, and contextually relevant measures of student flourishing in Indonesia. The Flourishing Scale PERMA offers a comprehensive tool for assessing well-being, integrating both hedonic and eudaimonic dimensions, and demonstrating applicability in higher education research and practice.

5. CONCLUSION

With strong validity and reliability support, the developed instrument has the potential to be an effective tool for mapping and intervening in student well-being in higher education. However, the integration of additional elements such as resilience and cross-cultural adjustments would be strategic steps to enhance the scope and application of this instrument in the future, thus accommodating a variety of needs in promoting optimal mental well-being across a wider population.

Although the flourishing measurement instrument developed in this study demonstrates several significant strengths, there are several limitations that need to be considered. First, this instrument does not include the dimension of resilience, which is a crucial element of student well-being, particularly in facing high academic and emotional challenges. Without this dimension, the instrument may not provide a complete picture of students' ability to cope with stress and difficulties. Second, while the instrument has been adapted for the Indonesian context, the PERMA model originates from a positive psychology tradition that is more focused on the individualistic Western culture. In collectivist cultures like Indonesia, dimensions of social well-being, such as community involvement and family values, tend to be more dominant, but these aspects may be underrepresented in the PERMA model. This could lead to cultural bias in measuring well-being, which may not fully reflect locally relevant values. Third, there are limitations in the Negative Emotion dimension, where some items were deemed invalid or misfitting. This indicates that the measurement of negative emotions, such as academic anxiety and stress, may not be sensitive enough to the experiences of students in Indonesia. Finally, although this instrument has been validated for students at Universitas Pendidikan Indonesia (UPI), there is a possibility that it may not be generalizable to students in other universities or study programs with different characteristics and contexts.

To address these limitations, several steps for instrument development are necessary. First, incorporating a resilience dimension into the instrument would provide a more holistic view of student well-being, especially in

terms of overcoming challenges and stress during their studies. Adding items that focus on self-resilience could help measure students' ability to adapt and cope with difficulties. Second, cross-cultural validation of this instrument should be conducted by involving populations from diverse cultural and social backgrounds to ensure its relevance and acceptance. Adaptation or modification of some items may be necessary to better reflect wellbeing dimensions that are prevalent in collectivist cultures, such as the value of togetherness and stronger social support. Third, the Negative Emotion dimension can be revised by adding more specific items about academic anxiety, stress related to assignments, and other challenges faced by students in Indonesia. This adjustment is expected to improve the accuracy of measuring negative emotions in the higher education context. Finally, to enhance the instrument's generalizability, further validation should be carried out on student populations from different universities or study programs to ensure that this instrument can be broadly applied in more diverse higher education contexts.

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REFERENCES

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American psychologist*, *55*(5), 469. https://psycnet.apa.org/fulltext/2000-15413-004.html

Austin, D. S. (2017). Positive legal education: Flourishing law students and thriving law schools. *Md. L. Rev.*, *77*, 649. https://heinonline.org/hol-cgi-bin/get_pdf.cgi?handle=hein.journals/mllr77&section=28

Bohlmeijer, E. T., Lamers, S. M., & Fledderus, M. (2015). Flourishing in people with depressive symptomatology increases with acceptance and commitment therapy. Post-hoc analyses of a randomized controlled trial. *Behaviour research and therapy*, *65*, 101-106. https://www.sciencedirect.com/science/article/pii/S0005796714002137

Bond, T. G., & Fox, C. M. (2013). *Applying the Rasch model: Fundamental measurement in the human sciences*. Psychology Press. https://api.taylorfrancis.com/content/books/mono/download?identifierName=doi&identifierValue=10.4324/9781410614575&type=googlepdf

Butler, J., & Kern, M. L. (2016). The PERMA-Profiler: A brief multidimensional measure of flourishing. *International journal of wellbeing*, *6*(3). https://www.internationaljournalofwellbeing.org/index.php/ijow/article/view/526

Checa, I., Perales, J., & Espejo, B. (2018). Spanish validation of the flourishing scale in the general population. *Current Psychology*, *37*(4), 949-956. https://link.springer.com/article/10.1007/s12144-017-9581-0

Chida, Y., & Steptoe, A. (2008). Positive psychological well-being and mortality: a quantitative review of prospective observational studies. *Biopsychosocial Science and Medicine*, *70*(7), 741-756. https://journals.lww.com/bsam/fulltext/2008/09000/positive_psychological_well_being_and_mortality__a.1.aspx

Compton, W. C., & Hoffman, E. (2019). *Positive psychology: The science of happiness and flourishing*. Sage Publications.

Creswell, J. (2003). *Research design: Qualitative, quantitative and mixed methods*. Sage Publications..

Crocker, M. M. (2015). Out-of-control sexual behavior as a symptom of insecure attachment in men. *Journal of Social Work Practice in the Addictions*, *15*(4), 373-393. https://www.tandfonline.com/doi/abs/10.1080/1533256X.2015.1091000

de Carvalho, T. F., de Aquino, S. D., & Natividade, J. C. (2023). Flourishing in the Brazilian context: Evidence of the validity of the PERMA-profiler scale: PERMA-profiler Brazil. *Current Psychology*, *42*(3), 1828-1840. https://link.springer.com/article/10.1007/s12144-021-01587-w

Didino, D., Taran, E. A., Barysheva, G. A., & Casati, F. (2019). Psychometric evaluation of the Russian version of the flourishing scale in a sample of older adults living in Siberia. *Health and Quality of Life Outcomes*, *17*(1), 34. https://link.springer.com/article/10.1186/s12955-019-1100-6

Diener, E., Wirtz, D., Biswas-Diener, R., Tov, W., Kim-Prieto, C., Choi, D. W., & Oishi, S. (2009). New measures of well-being. In *Assessing well-being: The collected works of Ed Diener* (pp. 247-266). Dordrecht: Springer Netherlands. https://link.springer.com/chapter/10.1007/978-90-481-2354-4_12

Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D. W., Oishi, S., & Biswas-Diener, R. (2010). New well-being measures: Short scales to assess flourishing and positive and negative feelings. *Social indicators research*, *97*(2), 143-156. https://link.springer.com/article/10.1007/s11205-009-9493-y

Dolan, P., Peasgood, T., & White, M. (2008). Do we really know what makes us happy? A review of the economic literature on the factors associated with subjective well-being. *Journal of Economic Psychology*, *29*(1), 94-122. https://www.sciencedirect.com/science/article/pii/S0167487007000694

Elfida, D., Milla, M. N., Mansoer, W. W. D., & Takwin, B. (2021). Adaptasi dan uji properti psikometrik The PERMA-Profiler pada orang Indonesia. *Persona: Jurnal Psikologi Indonesia*, *10*(1), 81-103. https://www.peggykern.org/uploads/5/6/6/7/56678211/artikel_1_-_adaptasi_dan_uji_properti_psikometrik_the_perma-profiler_pada_orang_indonesia.pdf

Fathi, J., & Derakhshan, A. (2019). Teacher self-efficacy and emotional regulation as predictors of teaching stress: An investigation of Iranian English language teachers. https://www.sid.ir/en/VEWSSID/J_pdf/107720190206.pdf

George, D., & Mallery, P. (2016). Frequencies. In *IBM SPSS Statistics 23 step by step* (pp. 115-125). Routledge. https://www.taylorfrancis.com/chapters/edit/10.4324/9781315545899-12/frequencies

Gokcen, N., Hefferon, K., & Attree, E. (2012). University students' constructions of 'flourishing' in British higher education: An inductive content analysis. *International Journal of Wellbeing*, *2*(1). https://internationaljournalofwellbeing.org/index.php/ijow/article/view/84

Hone, L. C., Jarden, A., Duncan, S., & Schofield, G. M. (2015). Flourishing in New Zealand workers: Associations with lifestyle behaviors, physical health, psychosocial, and work-related indicators. *Journal of Occupational and Environmental Medicine*, *57*(9), 973-983. https://journals.lww.com/joem/FullText/2015/09000/Flourishing_in_New_Zealand_Workers__Associations.7.aspx

Hone, L., Jarden, A., & Schofield, G. (2014). Psychometric properties of the Flourishing Scale in a New Zealand sample. *Social indicators research*, *119*(2), 1031-1045. https://link.springer.com/article/10.1007/s11205-013-0501-x

Huppert, F. A. (2009). What percentage of people in Europe are flourishing, and what characterizes them?. https://acuresearchbank.acu.edu.au/items/d5473729-2a81-47dd-842e-02812192292f

Huppert, F. A., & So, T. T. (2013). Flourishing across Europe: Application of a new conceptual framework for defining well-being. *Social indicators research*, *110*(3), 837-861. https://link.springer.com/article/10.1007/s11205-011-9966-7

Keyes, C. L. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of health and social behavior*, 207-222. https://www.jstor.org/stable/3090197

Keyes, C. L., & Haidt, J. E. (2003). *Flourishing: Positive psychology and the life well-lived* (pp. xx-335). American Psychological Association. https://psycnet.apa.org/books/TOC/10594

Khaw, D., & Kern, M. (2014). A cross-cultural comparison of the PERMA model of well-being. *Undergraduate Journal of Psychology at Berkeley, University of California*, *8*(1), 10-23.

https://www.peggykern.org/uploads/5/6/6/7/56678211/khaw___kern_2015_-_a_cross-cultural_comparison_of_the_perma_model_of_well-being.pdf

Kim, E. T., Lee, B. H. J., & Proeschold-Bell, R. J. (2025). Does Flourishing Mental Health Improve Perceived Quality of Life?. *Journal of Happiness Studies*, *26*(6), 95. https://link.springer.com/article/10.1007/s10902-025-00929-w

Kristiawan, M. (2015). A Model of Educational Character in High School Al-Istiqamah Simpang Empat, West Pasaman, West Sumatera. *Research Journal of Education*, *1*(2), 15-20. https://ideas.repec.org/a/arp/rjearp/2015p15-20.html

Lai, M. K., Leung, C., Kwok, S. Y., Hui, A. N., Lo, H. H., Leung, J. T., & Tam, C. H. (2018). A multidimensional PERMA-H positive education model, general satisfaction of school life, and character strengths use in Hong Kong senior primary school students: Confirmatory factor analysis and path analysis using the APASO-II. *Frontiers in psychology*, *9*, 1090. https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2018.01090/full

Lambert D'raven, L., & Pasha-Zaidi, N. (2016). Using the PERMA model in the United Arab Emirates. *Social indicators research*, *125*(3), 905-933. https://link.springer.com/article/10.1007/s11205-015-0866-0

Linacre, E. T. (1994). Estimating US Class A pan evaporation from a few climate data. *Water International*, *19*(1), 5-14. https://www.tandfonline.com/doi/abs/10.1080/02508069408686189

Ly, T. M. T., & Nguyen, H. B. (2024). The Influence of the PERMA model on EMP students' English speaking performance. *International Journal of Learning, Teaching and Educational Research*, *23*(9), 1-22. https://www.researchgate.net/profile/Fatima-Belkhir/publication/389041988_Vol_23_No_9_September_2024/links/67b211cf4c479b26c9e2fbc9/Vol-23-No-9-September-2024.pdf#page=8

Lyubomirsky, S., Sheldon, K. M., & Schkade, D. (2005). Pursuing happiness: The architecture of sustainable change. *Review of general psychology*, *9*(2), 111-131. https://onlinelibrary.wiley.com/doi/abs/10.5694/j.1326-5377.1996.tb94101.x https://journals.sagepub.com/doi/abs/10.1037/1089-2680.9.2.111

Mazza, D., Dennerstein, L., & Ryan, V. (1996). Physical, sexual, and emotional violence against women: a general practice-based prevalence study. *Medical Journal of Australia*, *164*(1), 14-17. https://onlinelibrary.wiley.com/doi/abs/10.5694/j.1326-5377.1996.tb94101.x

Mendes, J., Medeiros, T., Silva, O., Tomás, L., Silva, L., & Ferreira, J. A. (2022). PERMA model of well-being applied to Portuguese senior tourists: A confirmatory factor analysis. *Sustainability*, *14*(13), 7538. https://www.mdpi.com/2071-1050/14/13/7538

Menold, N., & Bogner, K. (2016). Design of rating scales in questionnaires. *GESIS survey guidelines*, *4*(2). https://www.gesis.org/fileadmin/admin/Dateikatalog/pdf/guidelines/design_rating_scales_questionnaires_menold_bogner_2016.pdf

Mulyasa, E. (2013). Uji kompetensi dan penilaian kinerja guru. *Bandung: PT Remaja Rosdakarya*, *40*.

Przybylko, G., Morton, D. P., Morton, J. K., Renfrew, M. E., & Hinze, J. (2022). An interdisciplinary mental well-being intervention for increasing flourishing: two experimental studies. *The Journal of Positive Psychology*, *17*(4), 573-588. https://www.tandfonline.com/doi/abs/10.1080/17439760.2021.1897868

Rachmawati, I., & Lidyasari, A. T. (2024). Psychological well-being of pre-service training teachers. *Jurnal Kajian Bimbingan dan Konseling*, *8*(3), 12. https://citeus.um.ac.id/jkbk/vol8/iss3/12/

Ryan, J., Curtis, R., Olds, T., Edney, S., Vandelanotte, C., Plotnikoff, R., & Maher, C. (2019). Psychometric properties of the PERMA Profiler for measuring wellbeing in Australian adults. *PloS one*, *14*(12), e0225932. https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0225932

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual review of psychology*, *52*(1), 141-166. https://www.annualreviews.org/content/journals/10.1146/annurev.psych.52.1.141

Ryff, C. D., & Singer, B. (1998). The contours of positive human health. *Psychological inquiry*, *9*(1), 1-28. https://www.tandfonline.com/doi/abs/10.1207/s15327965pli0901_1

Ryff, C. D., & Singer, B. (2000). Interpersonal flourishing: A positive health agenda for the new millennium. *Personality and social psychology review*, *4*(1), 30-44. https://journals.sagepub.com/doi/abs/10.1207/s15327957pspr0401_4

Ryff, C., Kwan, C., & Singer, B. (2001). Personality and aging. Flourishing agendas and future challenges. Julkaisussa: Birren J, Schaie K, eds. Handbook of the psychology of aging.

Schotanus-Dijkstra, M., Ten Have, M., Lamers, S. M., de Graaf, R., & Bohlmeijer, E. T. (2017). The longitudinal relationship between flourishing mental health and incident mood, anxiety, and substance use disorders. *The European Journal of Public Health*, *27*(3), 563-568. https://academic.oup.com/eurpub/article-abstract/27/3/563/2452354

Seligman, M. E. (2011). *Flourish: A visionary new understanding of happiness and well-being*. Simon and Schuster. https://books.google.com/books?hl=en&lr=&id=ng7RJW-udoQC&oi=fnd&pg=PA5&dq=Seligman,+M.+(2011).+Flourish.&ots=XSSusMlTOo&sig=ErwRytnOgtp41bolb3mZwwTjG20

Shanmugam, P., & Hidayat, R. (2022). Assessing grit and well-being of Malaysian ESL teachers: Application of the Perma Model. *Malaysian Journal of Learning and Instruction (MJLI)*, *19*(2), 153-181. https://repo.uum.edu.my/id/eprint/28880/

Slavin, S. J., Schindler, D. L., & Chibnall, J. T. (2014). Medical student mental health 3.0: improving student wellness through curricular changes. *Academic Medicine*, *89*(4), 573-577. https://academic.oup.com/academicmedicine/article-abstract/89/4/573/8351717

Sumintono, B. (2015). Aplikasi pemodelan rasch pada assessment pendidikan. https://www.academia.edu/download/39079672/Sampel_buku_rasch_asesmen_pendiddikan.pdf

Taherdoost, H. (2019). What is the best response scale for survey and questionnaire design, review of different lengths of rating scale/attitude scale/Likert scale. *International Journal of Academic Research in Management (IJARM)*, *8*. https://hal.science/hal-02557308/

Urbina, S. (2014). *Essentials of Psychological Testing*. John Wiley & Sons. https://books.google.com/books?hl=en&lr=&id=UnHrAwAAQBAJ&oi=fnd&pg=PR9&dq=Urbina,+S.+(2014).+Essentials+of+psychological+testing,+2nd+ed.+In+Essentials+of+psychological+testing,+2nd+ed.&ots=VfB7nFb4op&sig=DWyfRf8TbKkO6jKliJLRzGVg37U

Van Halem, S., van Roekel, E., & Denissen, J. (2024). Understanding the dynamics of hedonic and eudaimonic motives on daily well-being: Insights from experience sampling data. *Journal of Happiness Studies*, *25*(7), 107. https://link.springer.com/article/10.1007/s10902-024-00812-0

Villieux, A., Sovet, L., Jung, S. C., & Guilbert, L. (2016). Psychological flourishing: Validation of the French version of the Flourishing Scale and exploration of its relationships with personality traits. *Personality and Individual Differences*, *88*, 1-5. https://www.sciencedirect.com/science/article/pii/S0191886915005322

Wammerl, M., Jaunig, J., Mairunteregger, T., & Streit, P. (2019). The German version of the PERMA-Profiler: Evidence for construct and convergent validity of the PERMA theory of well-being in German-speaking countries. *Journal of Well-Being Assessment*, *3*(2), 75-96. https://link.springer.com/article/10.1007/s41543-019-00021-0

Wright, B. D., & Stone, M. H. (1979). Best test design. https://research.acer.edu.au/measurement/1/

Yang, L., & Mohd, R. B. S. (2021). Exploratory and Confirmatory Factor Analysis of PERMA for Chinese University EFL Students in Higher Education. *International Journal of Language Education*, *5*(2), 51-62. https://eric.ed.gov/?id=EJ1313258

Zhao, Y., & Hua, Y. (2025). The prediction of student well-being and flourishing from university learning experiences. *Frontiers in Psychology*, *16*, 1585058. https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2025.1585058/full