

Construct Validity and Reliability Testing of Early Childhood Teacher Calling Scale (ECTCS)

Florence Yulisinta^{1,3)}

Christiany Suwartono^{1,2)}

¹⁾Faculty of Psychology, Atma Jaya Catholic University of Indonesia

²⁾Center for the Study of Sustainable Community, Indonesia

³⁾Department of Early Childhood Education Teacher, Sekolah Tinggi
Pendidikan Holistik Berbasis Karakter, Indonesia

Abstract

Early Childhood Education (ECE) teachers encounter demanding duties, emotional strain, inadequate compensation, and minimal public recognition. Despite these obstacles, a strong “calling” inspires specific individuals to achieve professional excellence. The sense of calling in ECE environments has not been adequately investigated. Therefore, this study aimed to examine the reliability and validity of the Early Childhood Teacher Calling Scale (ECTCS). A cross-sectional, non-experimental design was adopted, and content validity was assessed using five expert judgments ($n=5$). The construct validity and reliability were assessed by 358 Indonesian ECE teachers aged 19 to 60, with a mean and standard deviation of 39.04 and 9.55, respectively. The measurement model was validated using confirmatory factor analysis (CFA), which identified three dimensions: challenge, determination, and meaningfulness. The results indicated a strong construct validity on ECTCS with Cronbach's alpha coefficients of .74, .77, and .73 for each dimension. The model exhibited a better second-order structure compared to the first. Therefore, the score was interpreted using the total score of the measuring instrument with a reliability of $\omega = .84$ ($M = 76.24$, $SD = 8.31$). This study suggested the need to enhance instruments to assess teachers' sense of calling, increase the sample size, and implement a more comprehensive and organized sampling method.

Keywords : *early childhood teacher calling, exploratory factor analysis, confirmatory factor analysis, validity, reliability*

Corresponding author, ¹⁾ florence.yulisinta@gmail.com

Introduction

Early childhood education (ECE) is important for the development of high-quality human resources (Santrock, 2020). In addition, rapid brain development in early childhood can establish a foundation for lifelong learning and future academic and personal success (Batcheler, 2024). When ECE is of low quality, it has an adverse effect on children's social, emotional, cognitive, and behavioral growth (Manning et al., 2019). Teachers have a significant impact on the evolution of education in the 21st century by developing an atmosphere that promotes active engagement, a thirst for knowledge, and self-confidence. Emphasis should also be placed on the qualities of contemporary students in the 21st century, including innovative and critical thinking, communication, and collaboration abilities (Haug & Mork, 2021).

Qualified and competent teachers are essential to improve ECE learning management. ECE teachers need digital, personal, social, pedagogical, and professional competencies to promote optimal child development (Fernández-Bringas et al., 2022; Owusu et al., 2022; Rao et al., 2022). In addition to the primary responsibilities of mastering educational content and child development, ECE teachers are occasionally assigned extra duties, such as such as a wide range of additional administrative and institutional tasks (Adawiah & Romadona, 2021). This condition can result in significant mental health issues and an excessive workload (Siu & Chan, 2020; Yulisinta et al., 2024).

ECE teachers frequently encounter high levels of stress while equipping students with essential competencies and supporting the skills required for successful development (Chirico et al., 2020). Research has shown that elevated stress levels were associated with diminished job satisfaction, increased teacher turnover rates (Grant et al., 2019), and lower work commitment (Totenhagen et al., 2016). The high turnover rate adversely affected children's social-emotional development and contributed to behavioral problems (Kwon et al., 2020).

Literature Review

Jain and Kaur (2021) reported that teachers' productivity could be increased by showing a strong dedication to the profession. Strong dedication is closely linked to a sense of calling, as perceiving teaching as a meaningful vocation fosters sustained commitment and responsibility toward professional roles. Teachers with a strong sense of calling will demonstrate greater professional dedication. Working with a sense of calling is related to various positive outcomes in an organization, such as increased productivity, job satisfaction, career growth, work engagement and fulfillment (Cain et al., 2018; Pangesti & Riasnugrahani, 2022; Willemse & Deacon, 2015), and a more substantial commitment to the organization (Duffy et al., 2019). Work as Calling Theory suggests that, over time, calling and meaningful work are interdependent. This condition implies that engaging in a call will result in high work significance, thereby improving both calling and well-being (Duffy et al., 2016, 2018). Consequently, analyzing teachers' behavior concerning the psychological state and the perception of their calling in teaching is essential.

The concept of calling was initially proposed by Wrzesniewski et al. (1997) and defined as one of three possible work orientations that could be assessed using the Work Orientation Scale. Bunderson and Thompson (2009) devised the Neoclassical Calling Scale, an instrument used to assess zookeepers' interpretations of calling. Dobrow and Tosti-Kharas (2011) created the 12-Calling scale to assess the sense of purpose and fulfillment experienced by musicians. Other measuring instruments include the Brief Calling Scale, a four-item scale created by Dik et al. (2012); the Living One's Calling Scale, which assesses the extent of an individual's expression to calling in professional work (Duffy et al., 2012), and the Multi-dimensional Calling Measurement developed by Hagmaier and Abele (2012). These measuring instruments assessed calling as a multi-dimensional concept, including different careers.

Contemporary measurement instruments often face limitations in fully capturing the multi-dimensional essence of an individual's sense of calling, particularly across diverse cultural contexts. Most measurement instruments are unidimensional, while the concept of calling is multidimensional. For instance, instruments such as the 12-Calling Scale (Dobrow & Tosti-Kharas, 2011) provided valuable insights. Still, the unidimensional nature and Western cultural roots might not fully include the complexities associated with an individual's life

calling. By conceptualizing calling as a single latent construct encompassing urgency, identity, and passion, such measures may oversimplify the multifaceted processes through which calling develops and is sustained over time.

Empirical critiques further indicate that unidimensional approaches are insufficient for capturing the diverse manifestations of calling. Praskova et al. (2015) argued that unidimensional methods failed to adequately capture the complex ways in which individuals manifest or encounter the sense of calling. This limitation is particularly evident in cultural contexts emphasizing collective well-being over individual meaning. In collectivist cultures, calling is often expressed through long-term commitment, acceptance of hardship, and responsibility toward others, dimensions that are not adequately represented in unidimensional instruments.

Cross-cultural research further demonstrates that the meaning and expression of calling vary systematically across cultural settings. Dik and Duffy (2009) reported that the emphasis on meaning and prosocial characteristics differed across cultures, with individualistic prioritizing meaningfulness of life and collectivist focusing on contributing to the community. Similarly, Zhang et al. (2015) found that in collectivist Chinese culture, personal meaning is primarily derived from active engagement in work that benefits others and fulfills social obligations. However, most available calling measures were developed within Western cultural frameworks, raising concerns regarding their cross-cultural validity and applicability (Ahn et al., 2021; Duffy et al., 2019).

Contemporary calling theory conceptualizes calling as a complex, multidimensional construct that integrates purpose, identity, and commitment to work that is perceived as meaningful and socially significant (Dik & Duffy, 2009; Duffy et al., 2018). Within the Work as a Calling Theory, calling is not merely an internal sense of personal fulfillment but a dynamic process shaped by contextual, cultural, and occupational conditions. Importantly, this framework also acknowledges the “dark side” of calling, in which individuals may experience sacrifice, burden, and structural constraints alongside meaning and purpose (Duffy et al., 2016). Thus, both the structure and expression of calling may vary substantially across professions and sociocultural contexts.

These theoretical considerations are particularly salient for ECE. Early childhood teachers engage in emotionally intensive and relational work under conditions that often involve limited material rewards, high moral expectations, and strong responsibility for children’s

foundational development (Kwon et al., 2022; Yulindrasari & Adrian, 2023; Zinsser et al., 2016). While multidimensional instruments such as the Multidimensional Calling Measure (MCM; Hagmaier & Abele, 2012) and the Teacher Sense of Calling Scale (TSCS; Jain & Kaur, 2021) represent important advancements, they were developed primarily in Western contexts and for general or non-ECE-specific teaching populations. As a result, they may not fully capture profession-specific dimensions of calling among early childhood teachers, particularly in collectivist societies such as Indonesia.

In Indonesia, early childhood teachers occupy a socially significant role within a collectivist culture where contributing to children's development is closely linked to communal values and moral responsibility (Yulisinta et al., 2023a). Previous studies in Indonesia have largely examined calling using instruments developed for non-ECE or general occupational contexts (Firmansyah & Riasnugrahani, 2022; Oktovani & Riasnugrahani, 2022; Pangesti & Riasnugrahani, 2022; Riasnugrahani et al., 2019), potentially overlooking profession-specific sources of motivation, endurance, and meaning inherent in early childhood education.

Therefore, the development of the Early Childhood Teacher Calling Scale (ECTCS) was theoretically and empirically warranted. Grounded in Work as a Calling Theory and informed by collectivist cultural perspectives, the ECTCS was designed to operationalize three interrelated dimensions of calling that are particularly salient for early childhood teachers: challenge, reflecting the acceptance of emotional and structural demands; determination, representing sustained vocational commitment and identity integration; and meaningfulness, capturing moral purpose and perceived contribution to children and society. By integrating calling theory with occupational specificity and cultural context, the ECTCS offers a more comprehensive and theoretically coherent assessment of calling among early childhood educators in Indonesia.

This current study examined the validity and reliability of ECTCS. The general hypothesis was, "The ECTCS instrument is valid and reliable for assessing an early childhood teacher's sense of calling." This main hypothesis was supported by specific hypotheses that showed sufficient content validity (H1), construct validity (H2), and reliability through internal consistency (H3).

Method

The initial phase of this study includes the development of ECTCS and assessing face and content validity through a panel of experts for review. Phase two consisted of a pilot study to assess the project's feasibility from the viewpoint of ECE teachers. A field test was conducted in the final stage to gather empirical data on supplementary psychometric attributes.

Participants

ECE teachers were selected using convenience sampling from various regions of Indonesia. Every participant fulfilled the following inclusion criteria: (a) aged between 19 and 60 years, (b) currently working as an ECE teacher, and (3) agree to give written informed consent regarding participation. This study included 358 teachers, with a mean age of 39.04 and a standard deviation of 9.55. The sample size exceeded the suggested threshold of 10 participants per item for psychometric analyses (Fernández-Bringas et al., 2022) due to the 15 ECTCS items.

Participants in this study were 358 Indonesian teachers working with children aged 0-6 ($M = 39.04$, $SD = 9.55$). The age group of 41-50 years had the most significant number of participants, with a total of 115 (32.12%), followed by 31-40 years with 110 (30.73%). This study also collected gender, teaching experience, educational and family background (whether a family member is a teacher), and demographic information. According to the demographic distribution data, the majority of participants, accounting for 97.49%, were female. The majority of participants were female (97.49%). Teaching experience was categorized into three groups (≤ 10 years, 11–20 years, and ≥ 21 years), with teachers having 10 years or less of experience representing the largest proportion of the sample (51.40%). Regarding educational background, most participants held a bachelor's degree, either with an early childhood education (ECE) professional qualification (34.36%) or a non-ECE professional qualification (34.36%). Most participants held a Bachelor's degree (S1), with 34.36% having a Bachelor's level and an ECE professional degree. Similarly, 34.36% have a bachelor's degree with a non-ECE professional degree. Table 1 shows the distribution of participants' demographic information.

Construct Validity and Reliability Testing of Early Childhood Teacher Calling Scale (ECTCS)

Table 1. *Demographic profile of research participants (N=358)*

Demographic Characteristics	Frequency	Percentage
Gender		
Male	9	2.51
Female	349	97.49
Age		
19 – 29 years	150	41.90
31 – 42 years	152	42.46
43 – 60 years	56	15.64
Teaching duration		
≤10 years	184	51.40
11 – 20 years	135	37.71
21 – 30 years	33	9.22
≥30 years	6	1.68
Education Level		
Non-degree level	90	25.14
Bachelor level with ECE professional degree	123	34.36
Bachelor level with non-ECE professional degree	122	34.08
Master and Doctoral level	23	6.42
Total	358	100

Sources: Personal data (2022).

Instruments

Early Childhood Teacher Calling Scale (ECTCS) was used to assess subjective perceptions of calling. This instrument is a self-report questionnaire with 15 items and 6 responses ranging from 1 (strong disagreement) to 6 (strong agreement). The final score was calculated by adding the responses of each participant. ECTCS comprises three dimensions, namely challenge, determination, and meaningfulness. These dimensions were established through the application of various calling theories, as proposed by Dik and Duffy (2009), Dobrow and Tosti-Kharas (2011), and Jain and Kaur (2021). Table 2 shows the blueprint of the ECTCS measuring instrument.

Table 2. *The blueprint of ECTCS*

Dimension	Description	Items	Sample Responses
Challenge	The perspectives held by ECE teachers pertain to their calling of educating young children despite the obstacles they encounter.	6	I became an early childhood teacher because it was my only path.
Determination	ECE teachers possess the will, passion, and strong enthusiasm to choose and execute their profession as ECE teachers.	5	I have never considered leaving the profession of early childhood teacher.
Meaningfulness	The perspectives of ECE teachers regarding their work as having essential value contribute to a sense of purpose and being worthy of a life goal.	4	I am confident my teaching can positively impact the lives of early childhood learners.

Sources: Personal data (2022).

Previous studies established a correlation between calling and work engagement (Jain & Kaur, 2021; Xie et al., 2016). Utrecht Work Engagement Scale (UWES), developed by Schaufeli et al. (2006), to assess work engagement was used to evaluate external construct validity. Kristiana et al. (2019) adapted this model into Indonesian. They reported an internal consistency value of .85. UWES is a self-report questionnaire with 9 questions and 7 response options, ranging from 1 (never) to 7 (always). The final score was determined by adding the scores for each participant's response, with a total score ranging from 9 to 54.

Procedure

The procedures for developing ECTCS include (a) a literature review for the formulation of constructs, definitions, and behavioral domains of the measuring instrument, (b) the development of scale items, (c) expert judgment for item revision and readability, (d) sample determination, (e) data collection, and (f) psychometric tests. This process produced 15 ECTCS items, which were tested for validity and reliability. The procedure for testing the validity and reliability of the ECTCS consists of (a) content validity (face and content), (b) construct validity (internal and external), and (c) reliability tests.

This study was conducted from October to November 2022 with 358 Indonesian ECE

teachers aged 19 - 60 years. Participants were asked to grant informed consent online before completing the questionnaire, guaranteeing the confidentiality of the information and that the gathered data would be used exclusively for study objectives and the dissemination of results. Furthermore, participants were permitted to withdraw without incurring any adverse consequences. After obtaining the written consent, participants were instructed to complete two self-reported questionnaires, UWES and ECTCS. The questionnaire was distributed using social media platforms such as WhatsApp, Facebook, and Instagram.

Data Analysis

The development and validation of the measurement instrument followed established procedures for content validity and construct validity (Cohen & Swerdlik, 2018). Content validity consisted of face validity and expert judgment-based content validity (Cohen & Swerdlik, 2018; Hair et al., 2021). Three quantitative techniques were employed to support content validity decisions: Aiken's V, the Content Validity Index (I-CVI, S-CVI/Ave, and S-CVI/UA), and the Content Validity Ratio (CVR) (Aiken, 1985; Lawshe, 1975; Lynn, 1986). Item selection and reduction were not based solely on qualitative expert judgment. In addition to expert feedback, item retention was determined using established quantitative content validity criteria. For five raters using a four-point rating scale, items were retained only if they met recommended cut-off values (Aiken's $V \geq .87$; CVI $\geq .83$; CVR $\geq .99$). This combined qualitative-quantitative approach ensured that item elimination decisions were systematic and empirically grounded.

Internal construct validity was examined using Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) (Urbina, 2014). EFA was conducted to explore the underlying factor structure of the instrument, followed by CFA to evaluate model fit and factorial validity. Throughout the item reduction process, psychometric criteria guided item elimination, including (a) factor loadings below .30, (b) corrected item-total correlations below .40, and (c) substantial cross-loadings exceeding .40 on multiple factors. In addition to statistical considerations, theoretical relevance was consistently applied to ensure that retained items meaningfully represented the conceptual domains of calling as articulated

within Work as a Calling Theory.

The Utrecht Work Engagement Scale (UWES) (Schaufeli et al., 2006), which measures work engagement, determines external validity. Kristiana et al. (2019) adapted UWES into Indonesian, achieving an internal consistency value of .85. An acceptable model is determined by meeting five out of seven goodness-of-fit criteria and having the smallest AIC. The criteria for assessing the goodness-of-fit are displayed in Table 3.

Table 3. *Goodness of fit criteria*

Model Fit Indices	Recommended Guidelines
<i>nilai-p</i>	$p > .05$
χ^2/df	$0 \leq \chi^2/\text{df} \leq 2$; good $2 \leq \chi^2/\text{df} \leq 3$; acceptable
CFI	$\geq .90 \leq \text{CFI} \leq 1.00$; good $.90 \leq \text{CFI} < .97$; acceptable
TLI	$\geq .97 \leq \text{CFI} \leq 1.00$; good $.90 \leq \text{CFI} < .97$; acceptable
NFI	$\geq .95 \leq \text{CFI} \leq 1.00$; good $.90 \leq \text{CFI} < .95$; acceptable
RMSEA	$0 < \text{RMSEA} \leq .05$; good $.05 < \text{RMSEA} \leq .08$; acceptable
SRMR	$0 < \text{RMSEA} \leq .08$
GFI	$\geq .95 \leq \text{CFI} \leq 1.00$; good $.90 \leq \text{CFI} < .95$; acceptable

Source: Schermelleh-engel et al. (2003), Hu & Bentler (1999)

The number of factors that needed to be extracted was determined using the visual scree plot test in conjunction with the Kaiser criterion for eigenvalues (Loehlin & Beaujean, 2017). Using Cronbach's coefficient alpha, the dimensionality of each extracted factor was evaluated to determine the degree of internal consistency. Hair et al. (2021) stated that an internal reliability value of .70 or higher was considered satisfactory. Correlations between the three subscales were also investigated using Spearman correlations.

Results

Face and Content Validity

Five experts were selected based on expertise and experience in education and psychology. The expert panel consisted of two academics in educational psychology and early childhood education, one researcher with specific expertise in calling and vocational psychology, and two early childhood education practitioners actively engaged in preschool settings. All academic experts had prior experience in instrument development and psychometric validation, while the practitioners possessed more than eight years of professional experience in early childhood education.

To ensure that item retention was not based solely on qualitative judgment, quantitative evidence of content validity was examined using Aiken's V, the Content Validity Index (I-CVI, S-CVI/Ave, and S-CVI/UA), and the Content Validity Ratio (CVR). For five raters using a four-point rating scale, items were considered acceptable if they met established cut-off values. The expert evaluation yielded an Aiken's V index of .96, exceeding the recommended criterion ($\geq .87$) (Aiken, 1985) and indicating a high level of agreement regarding item relevance. In addition, the average content validity scores based on I-CVI, S-CVI/Ave, and S-CVI/UA were 1.00, surpassing the preferred criterion of .83 for five raters (Lynn, 1986). Furthermore, the item was valid according to CVR, with the value results of the analysis being $\geq .99$ (Lawshe, 1975). This expert judgement process reduced the initial item pool from 60 to 36 items. Collectively, these indices provide strong quantitative evidence that item selection and reduction were guided by rigorous validity criteria rather than subjective judgment alone.

Construct Validity Test (EFA dan CFA)

ECTCS construct validity was evaluated by implementing EFA and the oblique promax rotation method. Promax rotation was chosen as the rotational method due to the possibility of correlation between the components. A rotated factor matrix was constructed to determine the relationship between the subscales and a specific factor (Loehlin & Beaujean, 2017). EFA was carried out after examining the intercorrelations between variables in the study. Among

the 36 items provided, the corrected item-total correlations ranged from .19 to .62. Item numbers 33 and 36 have a coefficient $< .03$, showing the necessity for elimination (Cristobal et al., 2007). Multiple EFA model tests were then carried out using these 34 items. The exclusion criteria were items that have factor loadings $< .30$, correlations with a total score $< .40$, or significant loadings on multiple factors $> .40$ (Clark & Watson, 2019).

Parallel analysis showed that the model consists of three factors by examining factors with real data factor eigenvalues more than one and more significant than the simulated data mean eigenvalues. Model 1 consists of 34 items in 3 dimensions, resulting in a total of 25. Model 2 was developed to determine the better version between the shortened scale and others. Bartlett's test of sphericity and Kaiser-Meyer-Olkin (KMO) were implemented, and the results showed that both models produced satisfactory outcomes. KMO analysis of Model 1 had a value of .92, while Model 2 was .91. Bartlett's Test of Sphericity also had a significant result of $p < .001$ (p-value less than .05), showing a significant correlation between the items in the instrument (Hair et al., 2019).

The most optimal model was identified by comparing the results of the CFA test to the fitted criterion value listed in Table 4. Contrary to the preceding EFA method, the objective of CFA analysis was to authenticate the construct-measuring validity of the factor grouping outcomes. Model 2 was found to be superior based on the comparison results and had a lower AIC value than Model 1. The total score of the measuring instrument was used to interpret the score (Figure 1), as the second order of Model 2 had better results than the first.

Table 4. *Internal validation test results*

Internal Validation Test	χ^2/df	Chi-Square	CFI	TLI	NFI	RMSEA	SRMR	GFI	AIC
Model 1									
Factor 1	3.07	$< .001$	.92*	.89	.88	.08*	.05*	.94*	
Factor 2	2.94*	$< .001$	.95*	.93*	.93*	.07*	.04*	.96*	
Factor 3	3.82	3.77×10^{-3}	.97*	.95*	.95*	.07*	.04*	.98*	
First Order Model 1	2.01*	$< .001$	.90*	.89	.89	.05*	.05*	.90*	14676.59
Second Order Model 1	not formed due to a lack of convergence								

Construct Validity and Reliability Testing of Early Childhood Teacher Calling Scale (ECTCS)

Internal Validation Test	χ^2/df	Chi-Square	CFI	TLI	NFI	RMSEA	SRMR	GFI	AIC
Model 2									
Factor 1	.84*	.52*	1.00*	1.01	.99*	.00*	.02*	1.00*	
Factor 2	2.63	.02	.98*	.96*	.97*	.07*	.03*	.99*	
Factor 3	5.02	6.63x10 ⁻³	.97*	.91*	.97*	.11*	.03*	.99*	
First Order Model 2	1.19*	.11*	.99*	.98*	.93*	.02*	.04*	.96*	13565.24
Second Order Model 2	1.19*	.11*	.99*	.98*	.93*	.02*	.03*	1.00*	13595.24

Sources: Personal data (2022).

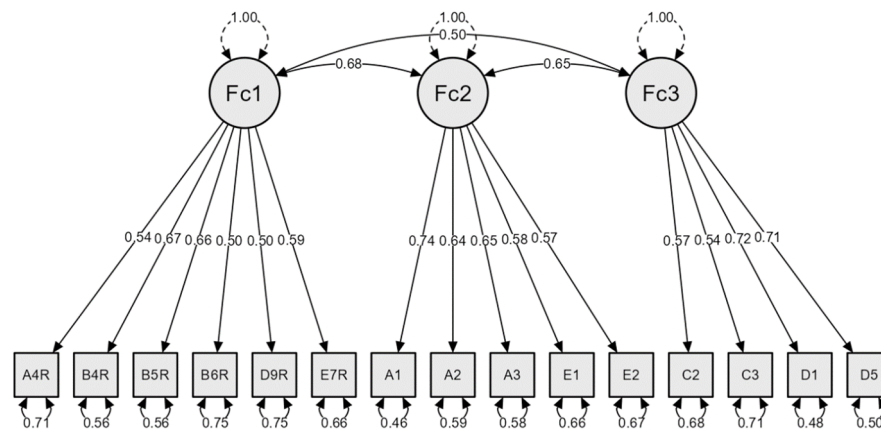


Figure 1. Second order of model 2
Sources: Personal data (2022).

The factors of Model 2 comprise three elements: challenge (factor 1), determination (factor 2), and meaningfulness (factor 3). The challenge factor consists of six items, each with a factor loading ranging between .52 and .65. The statement showing the challenge factor was "I became a preschool teacher because I had no other option." Five items comprise the determination factor, each with a factor loading ranging from .45 to .73. The statement for this category was, "Teaching preschool must be a lifelong endeavor." The factor of meaningfulness consists of four items, each with a factor loading ranging from .60 to .67. Instances of meaningfulness statements consist of the following: "Being a preschool teacher

inspires me to be a better person.” Table 5 shows the result of factor loadings for model 2.

Table 5. *EFA test of model 2*

Item	Factor 1	Factor 2	Factor 3
4	.61		
10	.61		
11	.65		
12	.54		
27	.52		
35	.56		
1		.51	
2		.45	
3		.62	
29		.73	
30		.67	
14			.60
15			.66
19			.60
23			.67

Note. The applied rotation method is Promax.

External Construct Validity Test (Correlation with UWES)

External construct validity was examined to determine whether ECTCS items measured the same construct. UWES was used as a test instrument that would be correlated with ECTCS. Spearman's correlation test was justified in this case, given the nonparametric nature of the variables' distribution. A significant correlation of .60 was found between UWES and total calling ($p < .001$). Furthermore, a significant relationship exists among the three variables regarding the dimension of the ECTCS measuring instrument. After determination ($r = .48$), the challenge dimension showed the strongest correlation with UWES ($r = .52$). Finally, the meaningfulness dimension was considered ($r = .44$). Teachers have the fortitude to surmount the obstacles encountered when there is a strong sense of dedication to their duties. An equivalent relationship between work engagement and a teacher's strong sense of

Construct Validity and Reliability Testing of Early Childhood Teacher Calling Scale (ECTCS)

calling was observed. According to these results, the ECTCS measurement instrument had significant external construct validity (Table 6).

Table 6. *External validity test results of ECTCS and UWES*

Variable	Challenge	Determination	Meaningfulness	Total ECTCS	Total UWES
1. Challenge	—				
2. Determination	.51***	—			
3. Meaningfulness	.41***	.53***	—		
4. Total ECTCS	.85***	.85***	.68***	—	
5. Total UWES	.52***	.48***	.44***	.60***	—

Note: ***correlation is significant at the 0.001 level

Reliability Test

The calculation results showed that the construct had an excellent reliability coefficient ($\alpha = .84$, $M = 76.24$, $SD = 8.31$). Each dimension has a reliability coefficient in the range of .73 to .77. After calculating the reliability coefficient, the standard error of measurement (SEM) was determined as this value affects the consistency of results. The following are the outcomes of the ECTCS instrument's SEM calculations:

$$SEM = SD \times \sqrt{1 - r}$$

$$SEM = 8.31 \times \sqrt{1 - .84}$$

$$SEM = 8.31 \times \sqrt{.16}$$

$$SEM = 8.31 \times .4 = 3.32$$

SEM reflects the extent to which observed scores may vary from the true scores due to measurement error. The SEM values for each dimension were as follows: Challenge (SEM = 2.24), Determination (SEM = 1.85), and Meaningfulness (SEM = 1.08), indicating a relatively low level of measurement error and acceptable score precision. Table 7 presents

the reliability coefficients, corrected item–total correlations, and SEM values for the Early Childhood Teachers’ Calling Scale (ECTCS).

Table 7. *Early Childhood Teachers' Calling Scale reliability ($\omega = .84$, $M = 76.24$, $SD = 8.31$)*

Dimension	Items Number	Item Statements	r corrected Item-total (construct)	r corrected Item-total (dimension)	Reliability
Challenge ($M = 29.92$, $SD = 4.40$)	1	I became a preschool teacher because I had no other option	.42	.48	$\alpha = .74$ SEM = 2.24
	2	I feel stressed when doing my job as a preschool teacher	.54	.53	
	3	I feel bored with my job as a preschool teacher	.53	.55	
	4	My enthusiasm for being a preschool teacher decreases when confronted with numerous obstacles	.40	.43	
	5	Being a preschool teacher does not bring me fulfillment in life	.41	.44	
	6	My responsibilities burden me as a preschool teacher	.47	.48	
Determination ($M = 24.39$, $SD = 3.86$)	7	My heart led me to become a preschool teacher	.64	.58	$\alpha = .77$ SEM = 1.85
	8	I believe that being a preschool teacher is the right profession for me	.54	.52	
	9	I believe I am destined to become a preschool teacher	.53	.57	
	10	Teaching preschool must be a lifelong endeavor	.45	.54	
	11	I have never considered leaving the preschool teaching profession	.45	.52	
Meaningfulness	12	I believe that what I teach to preschool	.38	.49	$\alpha = .73$

Construct Validity and Reliability Testing of Early Childhood Teacher Calling Scale (ECTCS)

Dimension	Items Number	Item Statements	r corrected Item-total (construct)	r corrected Item-total (dimension)	Reliability
(M= 21.93, SD= 2.09)		students can affect their lives			SEM = 1.08
	13	I am satisfied when I can enable students who were previously incapable to do so	.33	.48	
	14	Being a preschool teacher inspires me to be a better person	.51	.54	
	15	Being a preschool teacher teaches me many important life lessons	.46	.56	

Note: ***correlation is significant at the .001 level

Validity and reliability tests were conducted to examine the study's hypothesis that the ECTCS instrument was valid and reliable for measuring the sense of calling as an early childhood teacher. The findings indicate that the ECTCS measuring instrument has good external and internal construct validity and a high-reliability coefficient.

Discussion

Many countries are currently experiencing teacher shortages, particularly in early childhood education (ECE), where high emotional demands, limited professional recognition, and structural constraints contribute to attrition (Grant et al., 2019; Lowry et al., 2022; Viac & Fraser, 2020). Prior research has consistently shown that viewing work as a calling is associated with higher well-being, job satisfaction, and sustained career commitment. Within this context, understanding teachers' intrinsic vocational motivation or career calling is essential for promoting professional sustainability (Herman et al., 2024).

Several studies have developed other instruments to measure calling, but these are often designed for specific occupational contexts, requiring inquiry into the applicability to broader samples. Previous calling measures have predominantly been unidimensional or developed

for specific professions such as the “12-Calling scale” for musicians (Dobrow & Tosti-Kharas, 2011), “Neoclassical Calling Scale” was designed for zookeepers (Bunderson & Thompson, 2009), the “Living One's Calling Scale” for vocational calling (Duffy et al., 2012), and the “Career Calling Scale” for late adulthood (Praskova et al., 2015).

Even multidimensional instruments, including the Teacher Sense of Calling Scale (TSCS) (Jain & Kaur, 2021), Multidimensional Calling Measure (MCM) (Hagmaier & Abele, 2012), and Unified Multidimensional Calling Scale (UMCS) (Vianello et al., 2018), were largely developed in Western contexts or for educational levels other than early childhood education. Consequently, their applicability to ECE teachers, particularly within non-Western, collectivist cultures remains limited.

ECE teachers differ fundamentally from other educators. Their work involves intensive emotional labor, sustained caregiving responsibilities, close collaboration with families, and relatively low material rewards despite high moral and social expectations. In collectivist societies such as Indonesia, early childhood teaching is often framed not merely as employment but as a moral and communal responsibility (Adawiah & Romadona, 2021; Faizin & Cahyono, 2024; Newberry & Marpinjun, 2018; Yulisinta et al., 2023b). These profession-specific and cultural characteristics suggest that the experience of calling among ECE teachers may not be fully captured by existing instruments.

As a measure designed specifically for early childhood teachers in Indonesia, ECTCS addressed a gap in calling assessments designed for unique professional and cultural contexts. By developing a context-specific and culturally relevant instrument, this study enriched the understanding of calling among ECE teachers in Indonesia.

The findings of this study support a three-factor structure of calling among Indonesian ECE teachers, consisting of challenge, determination, and meaningfulness. The results of this study showed good construct validity for the ECTCS instrument. Although these dimensions emerged empirically through exploratory factor analysis, their conceptual coherence is well aligned with contemporary calling theory. Work as a Calling Theory conceptualizes calling as a multidimensional construct integrating meaning, identity, and sustained commitment to work perceived as socially significant (Dik & Duffy, 2009; Duffy et al., 2018).

The challenge dimension captures teachers' acceptance of emotional strain, workload intensity, and professional hardship inherent to early childhood education. This dimension reflects the theoretical acknowledgment of the “dark side” of calling, including sacrifice,

burden, and vulnerability to burnout (Duffy et al., 2016). Within the Indonesian context, this dimension resonates with deeply rooted cultural values of *nrima* (acceptance), resilience, and spiritual tranquility (Diener et al., 2010; Yulisinta et al., 2023a). Rather than viewing difficulties as deterrents, ECE teachers who experience calling may reframe professional challenges as meaningful trials that affirm their vocational commitment.

The determination dimension represents long-term vocational commitment, identity integration, and perseverance, core elements consistently emphasized across calling models (Bunderson & Thompson, 2009; Jain & Kaur, 2021). For Indonesian ECE teachers, determination reflects not merely career persistence but moral resolve to remain in a profession characterized by limited material rewards yet high social and moral expectations (Newberry & Marpinjun, 2018; Purwanto & Sutoyo, 2019; Yulindrasari & Adriany, 2023; Yulisinta et al., 2023b). This dimension aligns with Indonesian cultural values of harmony, gratitude, and recognition of the positive aspects of one's vocation despite external constraints.

The meaningfulness dimension captures moral purpose, service orientation, and perceived social contribution. This dimension is particularly salient in collectivist cultures, where work is evaluated in terms of its contribution to others and to the broader community (Zhang et al., 2015). In the Indonesian context, ECE teaching is strongly associated with social responsibility and value transmission, reinforcing the centrality of meaningfulness within the calling experience (Newberry & Marpinjun, 2018; Yulisinta et al., 2023b).

Overall, the Early Childhood Teacher Calling Scale can be adapted to the Indonesian context by incorporating the culture's spiritual, collectivist, and harmonious aspects while maintaining the core dimensions of challenge, determination, and meaningfulness. This adaptation will ensure the scale resonates with Indonesian ECE teachers' cultural values and experiences, allowing for a more accurate and meaningful assessment of their calling.

The ECTCS demonstrated strong psychometric properties through rigorous validation procedures, including content validity, construct validity, semantic validation, and high internal consistency coefficients. The moderate positive correlation (.60, $p < .001$) with the Utrecht Work Engagement Scale (UWES) (Schaufeli et al., 2006), provides important evidence of external validity while confirming the conceptual distinctiveness of calling and work engagement. This relationship is theoretically meaningful, while work engagement reflects an affective motivational state linked to current work experiences, calling represents a more enduring vocational orientation rooted in identity, meaning-making, and moral

commitment. The moderate correlation magnitude suggests that ECTCS captures aspects of vocational meaning beyond general enthusiasm or job-related affect. However, future research should strengthen external validity by examining convergent, concurrent, and predictive relationships with established calling measures and related outcomes such as job satisfaction, burnout, retention intentions, and psychological well-being.

The ECTCS offers practical value for multiple stakeholders. Educational leaders can use the instrument to identify teachers at risk of attrition and design targeted retention strategies. Policymakers may leverage calling assessment to inform professional development programs that address both technical competence and psychological sustainability. Researchers gain a culturally responsive tool for investigating the role of vocational meaning in teacher well-being and effectiveness.

From an international perspective, this study advances cross-cultural calling research by demonstrating how vocational meaning is shaped by collectivist and spiritual values. Although developed within the Indonesian context, the theoretical framework underlying the ECTCS, particularly the integration of challenge acceptance, moral determination, and communal meaningfulness, may prove relevant to other non-Western or collectivist societies where early childhood educators navigate similar tensions between high moral expectations and limited structural support.

The sample of 358 participants did not achieve normal distribution for the total calling score, suggesting that larger, more representative samples are needed. This study employed convenience sampling to recruit early childhood education (ECE) teachers from various institutional settings. While this approach facilitated efficient data collection, it may have influenced the observed factor structure and item interpretation. Teachers who voluntarily participated may differ systematically from non-participants in their level of vocational commitment or sense of calling, potentially affecting factor loadings and the salience of specific dimensions. In addition, sample-specific characteristics related to regional, institutional, or experiential contexts may have shaped how items were interpreted, thereby limiting the generalizability of the findings beyond the present sample.

Future research should seek to enhance representativeness by employing stratified or multi-stage sampling across regions, institution types, and career stages. Such approaches would allow for the examination of factor stability and measurement invariance across subgroups, strengthening the external validity of the ECTCS and clarifying whether the

identified three-factor structure holds consistently across diverse ECE contexts

Teaching experience may influence how early childhood teachers interpret vocational meaning and professional commitment. In the present study, teaching experience was categorized into three groups (≤ 10 years, 11–20 years, ≥ 21 years). However, the distribution of participants across these categories was uneven, with the majority of respondents concentrated in the early and mid-career groups and a relatively small proportion of senior teachers.

Given this imbalance, conducting separate factor analyses across experience-based groups was not methodologically optimal, as small subgroup sizes may compromise factor stability and interpretability. Future research is therefore encouraged to examine the measurement invariance and factor structure of the ECTCS across career stages using more balanced and representative samples.

The cross-sectional design precludes causal interpretation and does not capture the developmental trajectory of calling over time. Longitudinal studies are essential for understanding how calling evolves across career stages and how it predicts long-term outcomes such as retention, effectiveness, and well-being. Cross-cultural validation studies comparing Indonesian ECE teachers with educators in other collectivist societies, as well as teachers at different educational levels, would further establish the ECTCS's generalizability and theoretical boundaries.

This study successfully developed and validated the Early Childhood Teacher Calling Scale as a reliable, multidimensional instrument for assessing calling among Indonesian ECE teachers. By demonstrating rigorous psychometric properties and theoretical coherence within a culturally responsive framework, the ECTCS contributes to both measurement advancement and cross-cultural understanding of vocational meaning. The findings underscore the importance of context-specific measurement tools in advancing knowledge of teacher motivation, professional sustainability, and well-being, particularly in early childhood education, where global workforce challenges demand culturally informed, theoretically grounded solutions.

References

- Adawiah, L. R., & Romadona, N. (2021). Why are teachers vulnerable to stress? In W. Strielkowski, J.M. Black, S. A. Butterfield, C.-C. Chang, J. Cheng, F.P. Dumanig, R. Al-Mabuk, M. Urban, & S. Webb (Eds.), *Proceedings of the 5th International Conference on Early Childhood Education (ICECE 2020)* (pp. 283-286). Atlantis Press. <https://doi.org/10.2991/assehr.k.210322.060>
- Ahn, J., Kim, H.-W., & Lee, J.-Y. (2021). A cross-cultural study of calling and life satisfaction in the United States and South Korea. *Journal of Career Development*, 48(4), 354-368. <https://doi.org/10.1177/0894845319882103>
- Aiken, L. R. (1985). Three coefficients for analyzing the reliability and validity of ratings. *Educational and Psychological Measurement*, 45(1), 131-142. <https://doi.org/10.1177/0013164485451012>
- Batcheler, R. (2024, November 28). *Early childhood and the developing brain*. CFEC. <https://centreforearlychildhood.org/news-insights/case-studies/early-childhood-and-the-developing-brain/>
- Bunderson, J. S., & Thompson, J. A. (2009). The call of the wild: Zookeepers, callings, and the double-edged sword of deeply meaningful work. *Administrative Science Quarterly*, 54(1), 32-57. <https://doi.org/10.2189/asqu.2009.54.1.32>
- Cain, L., Busser, J., & Kang, H. J. (2018). Executive chefs' calling: Effect on engagement, work-life balance and life satisfaction. *International Journal of Contemporary Hospitality Management*, 30(5), 2287-2307. <https://doi.org/10.1108/IJCHM-02-2017-0105>
- Chirico, F., Sharma, M., Zaffina, S., & Magnavita, N. (2020). Spirituality and prayer on teacher stress and burnout in an Italian cohort: A pilot, before-after controlled study. *Frontiers in Psychology*, 10(January), 1-7. <https://doi.org/10.3389/fpsyg.2019.02933>
- Clark, L. A., & Watson, D. (2019). Constructing validity: New developments in creating objective measuring instruments. *Psychological Assessment*, 31(12), 1412-1427. <https://doi.org/10.1037/pas0000626>
- Cohen, R. J., & Swerdlik, M. E. (2018). *Psychological testing and assessment: An introduction to tests and measurement* (9th ed.). McGraw-Hill Education.
- Cristobal, E., Flavián, C., & Guinalú, M. (2007). Perceived e-service quality (PeSQ):

- Measurement validation and effects on consumer satisfaction and web site loyalty. *Managing Service Quality*, 17(3), 317-340.
<https://doi.org/10.1108/09604520710744326>
- Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D. won, 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://doi.org/10.1007/s11205-009-9493-y>
- Dik, B. J., & Duffy, R. D. (2009). Calling and vocation at work: Definitions and prospects for research and practice. *The Counseling Psychologist*, 37(3), 424-450.
<https://doi.org/10.1177/0011000008316430>
- Dik, B. J., Eldridge, B. M., Steger, M. F., & Duffy, R. D. (2012). Development and validation of the Calling and Vocation Questionnaire (CVQ) and Brief Calling Scale (BCS). *Journal of Career Assessment*, 20(3), 242-263.
<https://doi.org/10.1177/1069072711434410>
- Dobrow, S. R., & Tosti-Kharas, J. (2011). Calling: The development of a scale measure. *Personnel Psychology*, 64(4), 1001-1049.
<https://doi.org/10.1111/j.1744-6570.2011.01234.x>
- Duffy, R. D., Bott, E. M., Allan, B. A., Torrey, C. L., & Dik, B. J. (2012). Perceiving a calling, living a calling, and job satisfaction: Testing a moderated, multiple mediator model. *Journal of Counseling Psychology*, 59(1), 50-59. <https://doi.org/10.1037/a0026129>
- Duffy, R. D., Dik, B. J., Douglass, R. P., England, J. W., & Velez, B. L. (2018). Work as a calling: A theoretical model. *Journal of Counseling Psychology*, 65(4), 423-439.
<https://doi.org/10.1037/cou0000276>
- Duffy, R. D., Douglass, R. P., Autin, K. L., England, J., & Dik, B. J. (2016). Does the dark side of a calling exist? Examining potential negative effects. *Journal of Positive Psychology*, 11(6), 634-646. <https://doi.org/10.1080/17439760.2015.1137626>
- Duffy, R. D., Douglass, R. P., Gensmer, N. P., England, J. W., & Kim, H. J. (2019). An initial examination of the work as calling theory. *Journal of Counseling Psychology*, 66(3), 328-340. <https://doi.org/10.1037/cou0000318>
- Faizin, I., & Cahyono, A. N. (2024). Systematic literature review: Analysis of early childhood education teachers' resilience capabilities in facing professional and contextual challenges. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, 8(6), 1821-1836.

- <https://doi.org/10.31004/obsesi.v8i6.6512>
- Fernández-Bringas, T., Sandoval-Arteta, F., Suárez-Guerrero, C., & Mercado, G. O. (2022). Psychometric validation of the information area of digital competence in high school students in Perú. *Educational Process: International Journal*, 11(4), 53-68. <https://doi.org/10.22521/edupij.2022.114.3>
- Firmansyah, K. R., & Riasnugrahani, M. (2022). Panggilan (calling) dan kesejahteraan di tempat kerja pada karyawan kehutanan [Calling and well-being at work on forestry employee]. *Psikologika*, 27(1), 61-72. <https://doi.org/10.20885/psikologika.vol27.iss1.art5>
- Grant, A. A., Jeon, L., & Buettner, C. K. (2019). Relating early childhood teachers' working conditions and well-being to their turnover intentions. *Educational Psychology*, 39(3), 294-312. <https://doi.org/10.1080/01443410.2018.1543856>
- Hagmaier, T., & Abele, A. E. (2012). The multidimensionality of calling: Conceptualization, measurement and a bicultural perspective. *Journal of Vocational Behavior*, 81(1), 39-51. <https://doi.org/10.1016/j.jvb.2012.04.001>
- Hair, J. F., Gabriel, M. L. D. S., da Silva, D., & Braga Junior, S. (2019). Development and validation of attitudes measurement scales: Fundamental and practical aspects. *RAUSP Management Journal*, 54(4), 490-507. <https://doi.org/10.1108/RAUSP-05-2019-0098>
- Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial least squares structural equation modeling (PLS-SEM) using R* (7th ed.). Springer International Publishing. <https://doi.org/10.1007/978-3-030-80519-7>
- Haug, B. S., & Mork, S. M. (2021). Taking 21st century skills from vision to classroom: What teachers highlight as supportive professional development in the light of new demands from educational reforms. *Teaching and Teacher Education*, 100, 103286. <https://doi.org/10.1016/j.tate.2021.103286>
- Herman, A. N., Dearth-Wesley, T., & Whitaker, R. C. (2024). The association between work as a calling and turnover among early childhood education professionals. *Early Childhood Education Journal*, 52(3), 481-491. <https://doi.org/10.1007/s10643-023-01450-6>
- Jain, P., & Kaur, J. (2021). Development and validation of Teachers' Sense of Calling Scale. *Management and Labour Studies*, 46(4), 438-451. <https://doi.org/10.1177/0258042X211018611>

- Kristiana, I. F., Fajrianti, F., & Purwono, U. (2019). Analisis rasch dalam Utrecht Work Engagement Scale-9 (UWES-9) versi bahasa Indonesia [Rasch analysis in the Indonesian version of the Utrecht Work Engagement Scale-9 (UWES-9)]. *Jurnal Psikologi*, 17(2), 204. <https://doi.org/10.14710/jp.17.2.204-217>
- Kwon, K. A., Ford, T. G., Salvatore, A. L., Randall, K., Jeon, L., Malek-Lasater, A., Ellis, N., Kile, M. S., Horm, D. M., Kim, S. G., & Han, M. (2022). Neglected elements of a high-quality early childhood workforce: Whole teacher well-being and working conditions. *Early Childhood Education Journal*, 50(1), 157-168. <https://doi.org/10.1007/s10643-020-01124-7>
- Kwon, K. A., Malek, A., Horm, D., & Castle, S. (2020). Turnover and retention of infant-toddler teachers: Reasons, consequences, and implications for practice and policy. *Children and Youth Services Review*, 115, Article 105061. <https://doi.org/10.1016/j.childyouth.2020.105061>
- Lawshe, C. H. (1975). A quantitative approach to content validity. *Personnel Psychology*, 28(4), 563-575. <https://doi.org/10.1111/j.1744-6570.1975.tb01393.x>
- Loehlin, J. C., & Beaujean, A. A. (2017). *Latent variable models: An introduction to factor, path, and structural equation analysis* (5th ed.). Routledge.
- Lowry, C., Leonard-Kane, R., Gibbs, B., Muller, L. M., Peacock, A., & Jani, A. (2022). Teachers: the forgotten health workforce. *Journal of the Royal Society of Medicine*, 115(4), 133-137. <https://doi.org/10.1177/01410768221085692>
- Lynn, M. R. (1986). Determination and quantification of content validity. *Nursing Research*, 35(6), 382-385. <https://doi.org/10.1097/00006199-198611000-00017>
- Manning, M., Wong, G. T. W., Fleming, C. M., & Garvis, S. (2019). Is teacher qualification associated with the quality of the early childhood education and care environment? A meta-analytic review. *Review of Educational Research*, 89(3), 370-415. <https://doi.org/10.3102/0034654319837540>
- Newberry, J., & Marpinjun, S. (2018). Payment in heaven: Can early childhood education policies help women too? *Policy Futures in Education*, 16(1), 29-42. <https://doi.org/10.1177/1478210317739467>
- Oktovani, N. N., & Riasnugrahani, M. (2022). Search for calling, presence for calling dan makna kerja pada karyawan kehutanan [Search for calling, presence for calling and meaning of work in forestry employees]. *Aksara: Jurnal Ilmu Pendidikan Nonformal*,

- 8(2), 1429. <https://doi.org/10.37905/aksara.8.2.1429-1438.2022>
- Owusu, K., Koomson, E., Gyapong, M., Kyere, E. A., & Geoffrey, K. M. (2022). Pedagogical content knowledge of early childhood education pre-service teachers in teaching psychosocial skills across the kindergarten curriculum in the Volta Region, Ghana. *International Journal of Education, Learning and Development*, 10(12), 19-33. <https://doi.org/10.37745/ijeld.2013/vol10n121933>
- Pangesti, S. W., & Riasnugrahani, M. (2022). Hubungan makna panggilan dan keterikatan kerja pada guru [The relationship between calling and work engagement in teachers]. *Jurnal Sains Psikologi*, 11(1), 62. <https://doi.org/10.17977/um023v11i12022p62-70>
- Praskova, A., Creed, P. A., & Hood, M. (2015). The development and initial validation of a Career Calling Scale for emerging adults. *Journal of Career Assessment*, 23(1), 91-106. <https://doi.org/10.1177/1069072714523089>
- Purwanto, E., & Sutoyo, A. (2019). Contributing spirituality account for teacher motivation at school. In *Proceedings of the 5th International Conference on Education and Technology (ICET 2019)*, (pp. 330-333). Atlantis Press. <https://doi.org/10.2991/icet-19.2019.82>
- Rao, N., Chan, S. W. Y., Wang, R., Lee, D., Ng, R. Y. T., Becher, Y., Lau, C., Sun, J., Ho, F. K., & Ip, P. (2022). The Hong Kong Early Child Development Scale-3: A validation study. *Asia-Pacific Journal of Research in Early Childhood Education*, 16(2), 1-23. <https://doi.org/10.17206/apjrece.2022.16.2.1>
- Riasnugrahani, M., Riantoputra, C. D., Takwin, B., & Panggabean, H. (2019). Discerning work as a calling: The role of job crafting. *Career Development Quarterly*, 67(4), 343-356. <https://doi.org/10.1002/cdq.12203>
- Santrock, J. W. (2020). *A topical approach to life-span development* (10th ed.). McGraw-Hill Education.
- Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement*, 66(4), 701-716. <https://doi.org/10.1177/0013164405282471>
- Siu, A. F. Y., & Chan, A. H. C. (2020). Preschool teachers' resilience and their readiness to develop resilience to young children in a Chinese context. *Asia-Pacific Journal of Research in Early Childhood Education*, 14(1), 49-69.

<https://doi.org/10.17206/apjrece.2020.14.1.49>

Totenhagen, C. J., Hawkins, S. A., Casper, D. M., Bosch, L. A., Hawkey, K. R., & Borden, L. M. (2016). Retaining early childhood education workers: A review of the empirical literature. *Journal of Research in Childhood Education*, 30(4), 585-599.

<https://doi.org/10.1080/02568543.2016.1214652>

Urbina, S. (2014). *Essentials of psychological testing* (2nd ed.). John Wiley & Sons, Inc.

Viac, C., & Fraser, P. (2020). Teachers' well-being. (OECD Education Working Papers, No. 213). OECD Publishing. <https://doi.org/10.1787/c36fc9d3-en>

Vianello, M., Rosa, A. D., Anselmi, P., & Galliani, E. M. (2018). Validity and measurement invariance of the Unified Multidimensional Calling Scale (UMCS): A three-wave survey study. *PLoS ONE*, 13(12), 1-13. <https://doi.org/10.1371/journal.pone.0209348>

Willemse, M., & Deacon, E. (2015). Experiencing a sense of calling: The influence of meaningful work on teachers' work attitudes. *SA Journal of Industrial Psychology*, 41(1), 1-9. <https://doi.org/10.4102/sajip.v41i1.1274>

Wrzesniewski, A., McCauley, C., Rozin, P., & Schwartz, B. (1997). Jobs, careers, and callings: People's relations to their work. *Journal of Research in Personality*, 31(1), 21-33. <https://doi.org/10.1006/jrpe.1997.2162>

Xie, B., Xia, M., Xin, X., & Zhou, W. (2016). Linking calling to work engagement and subjective career success: The perspective of career construction theory. *Journal of Vocational Behavior*, 94, 70-78. <https://doi.org/10.1016/j.jvb.2016.02.011>

Yulindrasari, H., & Adrian, V. (2023). "We are not labors; we are teachers": Indonesian early childhood teachers' organizations as a form of a panopticon. *Policy Futures in Education*. <https://doi.org/10.1177/14782103231208854>

Yulisinta, F., Marta, R. F., Panggabean, H., Wang, C., & Gatcho, A. R. G. (2023a). Discursive construction of spiritual values and cultural standards in Sang Pemimpi Film. *International Journal of Visual and Performing Arts*, 5(1), 18-33. <https://doi.org/10.31763/viperarts.v5i1.972>

Yulisinta, F., Setiadi, B. N., & Suci, E. S. T. (2023b). Flourishing guru: Kunci motivasi dan komitmen mengajar guru pendidikan anak usia dini [Teacher flourishing: Keys to motivation and teaching commitment for early childhood education teachers]. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, 7(6), 6750-6763. <https://doi.org/10.31004/obsesi.v7i6.5414>

- Yulisinta, F., Setiadi, B. N., & Suci, E. S. T. (2024). A comprehensive systematic review on the multifaceted factors influencing teacher flourishing. *European Journal of Educational Research*, 13(3), 1335-1351. <https://doi.org/10.12973/eu-jer.13.3.1335>
- Zhang, C., Wei, J., Zhang, J., & Dik, B. J. (2015). Work as a calling in China: A qualitative study of Chinese college students. *Journal of Career Assessment*, 23(2), 236-249. <https://doi.org/10.1177/1069072714535029>
- Zinsser, K. M., Christensen, C. G., & Torres, L. (2016). She's supporting them; who's supporting her? Preschool center-level social-emotional supports and teacher well-being. *Journal of School Psychology*, 59, 55-66. <https://doi.org/10.1016/j.jsp.2016.09.001>