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Motivation and task engagement of young EFL learners in Indonesian primary schools: development and validation of a questionnaire

Mai Sri Lena[a,b] and Marianne Nikolov[c]

[a]Doctoral School of Education, University of Szeged, Szeged, Hungary; [b]Department of Elementary School Teacher Education, Universitas Negeri Padang, Padang, Indonesia; [c]English Applied Linguistics, University of Pécs, Pécs, Hungary

ABSTRACT

This study aimed to develop and validate a questionnaire to measure young learners' motivation and task engagement in learning English. Drawing on theories by Ryan and Deci and Philp and Duchesne, instrument development included reviewing existing tools, designing context-appropriate items, consulting experts and children, revising items, and validating the questionnaire comprising six underlying factors. The instrument was administered to a convenience sample of 579 11-year-old fifth graders, 269 boys and 310 girls, in Indonesia to evaluate its psychometric attributes. Data were analyzed using exploratory and confirmatory factor analyses using the jamovi application. The results showed that motivation had two factors, extrinsic and intrinsic, whereas task engagement included four factors, behavioral, emotional, cognitive, and social engagement. The model of motivation and task engagement had a good fit with data, as evidenced by fit indexes. Average Variance Extracted and Composite Reliability values confirmed the model's validity and reliability. The instrument is thus valid for collecting data from fifth graders learning English. Findings can contribute to improving local practices and the wider field of English language learning in non-Western contexts.

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1. Introduction

In recent years, teaching English as a foreign language (EFL) to young learners has gained considerable traction in countries where English is not an official language. Indonesia is such a country. Young learners (YL) are between the ages of six or seven to 12/15 years in primary and lower secondary schools (Mihaljević Djigunović & Nikolov, 2019). Early and consistent interaction with English is believed to be essential for achieving long-term mastery of the lingua franca. Young learners bring unique psychological, emotional, and developmental characteristics to the classroom, making their motivation and task engagement vital components of successful language learning. In the Indonesian primary school context, where English is taught as a compulsory subject from age nine, understanding what motivates children to learn English and encouraging them to engage in language learning tasks are essential to inform pedagogical practices and policy decisions.

Despite increasing attention to early EFL education, there is a lack of empirically validated instruments designed to measure children's motivation and task engagement in Indonesian settings. Most surveys were either developed for older students (e.g. Zare & Derakhshan, 2025) or adapted from general

CONTACT Mai Sri Lena maisrilena@fip.unp.ac.id, mai.sri.lena@edu.u-szeged.hu Doctoral School of Education, University of Szeged, Hungary

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education contexts without thorough validation with young language learners (e.g. Vidergor, 2021). Only a few instruments were developed for children (e.g. Butler & Le 2018; Oga-Baldwin et al., 2017). This study addresses this gap by developing and validating a contextually relevant questionnaire to assess Indonesian children's motivation and task engagement.

Through a rigorous process of item development and statistical validation, the study aims to provide a reliable and culturally appropriate instrument to support future research and inform educational interventions in the early stages of learning EFL. The significance of this study lies in its provision of a validated instrument for young EFL learners in Indonesia, a demographic that has been largely neglected in previous research. This study is innovative, as it integrates constructs related to YLs' motivation as well as task engagement in English learning. Thus, we aim to fill gaps by sharing the findings on an empirically tested instrument in the Indonesian EFL context.

This study aims to answer two research questions:

1. What are the underlying factors that structure the questionnaire to measure young learners' English learning motivation and task engagement?
2. How valid and reliable is the instrument?

2. Literature review

2.1. Language learning motivation in EFL contexts

Definitions of motivation vary. Motivation is recognized as a multifaceted construct comprising three elements: (1) the aspiration to learn an additional language, (2) perceptions concerning language learning, and (3) the intensity of motivation manifested through sustained effort in learning an additional language (Gardner, 2010). Within the context of early English language programs, motivation has been demonstrated to impact learners' persistence, engagement, and language outcomes (Dörnyei & Ushioda, 2011). Motivation is important, as it determines the rate and effectiveness of learning a new language (Gardner, 1985). This study conceptualizes motivation as learners' willingness to learn an additional language, interest in the process, and enthusiasm about the target language. It is grounded in self-determination theory, where motivation is categorized into two types: intrinsic and extrinsic motivation (Ryan & Deci, 2020). Intrinsic motivation is characterized by an interest or enjoyment in engaging with tasks, whereas extrinsic motivation is driven by external rewards, pressures, or outcomes. These types of motives have been extensively applied in educational psychology, and they are suitable for characterizing children's developmental needs when learning an additional language (Mihaljević Djigunović & Nikolov (2019). Intrinsic motivation was found to play a key role (Carreira, 2011; Guo et al., 2023; Vidergor, 2021). In summary, researchers of language learning motivation, including those of young learners, have widely accepted the distinction between extrinsic and intrinsic motivation, as is illustrated in Figure 1.

2.2. Task engagement in EFL contexts

Recent discussions on motivation have shifted interest towards the ways in which learners engage with tasks in their additional language. Task engagement refers to the extent of students' involvement in language learning tasks (Philp & Duchesne, 2016). Its construct comprises four dimensions: behavioral,

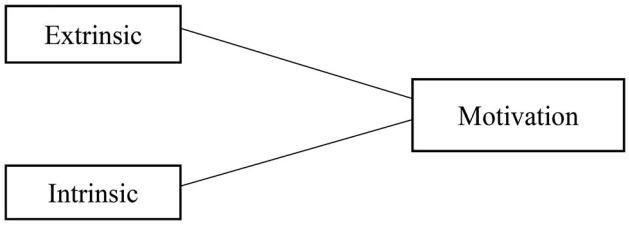

Figure 1. The construct of motivation.

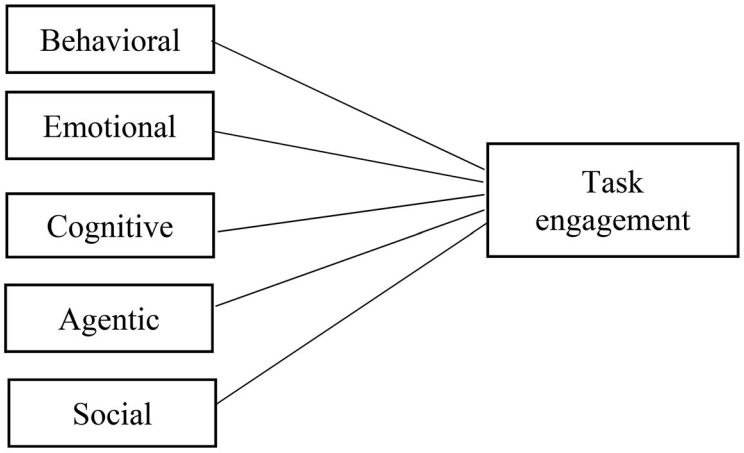

Figure 2. Task engagement construct.

emotional, cognitive, and social engagement (Philp & Duchesne, 2016). It is also conceptualized as a multifaceted construct with five dimensions, including an additional agentic dimension (Egbertet al., 2021). Behavioral engagement pertains to the active participation of learners in tasks (Philp & Duchesne, 2016). It is measurable by indicators such as the time spent working on tasks and responses to questions (Dörnyei & Kormos, 2000; Oga-Baldwin, 2019). Emotional engagement relates to the feelings and emotional reactions that students have about classroom activities (Sang & Hiver, 2021). Cognitive engagement concerns alertness, sustained attention, active mental processes, exertion of mental effort, and use of self-regulation strategies (Dao, 2021). Agentic engagement is characterized by learners' endeavors to influence the pedagogical processes in the classroom (Oga-Baldwin, 2019). Social engagement is defined by the degree to which a student adheres to the formal and informal behavioral norms of the classroom, such as punctuality in attending school and classes, and engaging with educators and peers appropriately (Finn & Zimmer, 2012). Figure 2 displays the multidimensional construct of task engagement, comprising five dimensions, as described in this section.

2.3. Questionnaires on young learners' motivation and task engagement

The most often used instruments tapping into children's motivation and task engagement are self-report questionnaires. Previous studies have developed surveys on these individual learner differences. For example, Oga-Baldwin et al. (2017) used one to examine young learners' self-regulation and motivation (12 items), including autonomous regulation, introjected regulation, and external regulation. They measured it at two points in time tapping into autonomous regulation (6 items), for example, I'm interested in English; I want to be able to use English in the future, introjected regulation (3 items), e.g. I want my friends to think I'm good at English, and external regulation (3 items): e.g. If I don't participate, my teacher will get angry. Additionally, they used eleven items assessing cognitive, emotional, and behavioral engagement with tasks after doing them. The factors were: cognitive engagement (4 items), e.g. I tried to comprehend my teacher's English; I tried to express myself in English, emotional engagement (4 items), e.g. I was interested in today's class; I enjoyed learning new things, and behavioral engagement (3 items), e.g. I paid attention in today's class; I participated in today's English class.

Furthermore, Butler and Le (2018) also used a questionnaire to examine children's English learning motivation in two dimensions: extrinsic motivation (5 items), e.g. I want to get good grades in English, I study English hard in order to get into a good school, and intrinsic motivations (5 items), e.g. I like to use English whenever I have an opportunity to do so, I like English TV programs, videos, and movies.

Instruments tapping into children's task engagement have also been developed. For example, Azkarai and Kopinska (2020) used an engagement scale based on Storch (2008) to assess young learners' engagement by counting total Language-Related Episodes during paired collaborative writing tasks. They categorized students' engagement into three types. The first type involved learners actively participating through questioning, expressing doubts, or engaging in metatalk. The second type featured one

peer discussing or suggesting while the other repeated or responded monosyllabically, without engaging. The third type occurred when one dyad member asked a question, but the peer didn't engage, and the questioner moved on with minimal or no response. Additionally, the authors used a motivation thermometer adapted from Al Khalil (2016) to gauge children's attitudes to the tasks. In this approach, young learners were asked to indicate their feelings before and after doing the task by marking a level on the thermometer (0-10 scale), and they provided reasons for their responses.

In an innovative study, Liu et al. (2016) examined students' engagement patterns in digital storytelling activities using a survey guided by a flow measurement framework to analyze basic flow components, including control, attention, curiosity, and intrinsic interest. The authors used four items with 5-point Likert-type questions. For example, 'When using Story & Painting House to create English stories, I feel that it's easy for me to learn about the content I want to learn'; 'When using Story & Painting House to create English stories, I feel that I can be fully concentrated.' Additionally, they adapted a motivated strategies for learning questionnaire to evaluate students' motivation across four dimensions: self-efficacy, extrinsic/intrinsic goal orientation, task value, and peer learning. The instrument consisted of 25 items, for example, 'When using Story & Painting House to create English stories, I want to get better evaluation than most of the other students'; 'When using Story & Painting House to create English stories, I want to do well in the activity because it is important to show my English ability to my family, friends.'

As the above examples indicate, empirical research on young learners typically focuses on either how learners engage with specific tasks, such as vocabulary, reading, story writing (Liu et al., 2016) and writing (Azkarai & Kopinska, 2020) or they aim to quantify young learners' level of engagement with tasks (for example, Liu et al., 2016; Oga-Baldwin et al., 2017). These findings concerning studies on children are not fully aligned with Hiver et al.'s (2024) findings that engagement studies frequently use multiple measurement tools and diverse data sources to capture the complexity of engagement with the additional language. Therefore, it is necessary to work towards more complex studies.

Furthermore, so far, no research has studied young learners' motivation to learn English and their engagement with English tasks in the Indonesian context. Although Kristiawan et al. (2022) investigated learners' motivation to learn English through interviews, they involved older (12-14-year-old) participants and did not describe how they developed their instrument. They found that digital storytelling allowed learners to express their identity and derive meaning from local cultural stories effectively. Such innovative tasks increased their motivation by bridging the gap between familiar local and less familiar English cultural content and vocabulary, ultimately enhancing both engagement and achievement in English.

As no previous study involved fifth-graders or used questionnaires to tap into Indonesian children's motivation and task engagement in their local context, it was necessary to develop and validate an instrument with Indonesian primary-school learners of English. Using such a validated questionnaire can contribute to improving local practice and the broader field of English language learning, especially in motivation and task engagement research for young learners in a non-Western context.

3. Method

3.1. Research design

The study adopted a quantitative research design, involving the measurement and analysis of numerical data (Creswell & Creswell, 2018) to develop and validate a survey. The collected data were then analyzed using the statistical software program, jamovi app version 2.3.28.0 (The jamovi project, 2022). This software enables the execution of sophisticated data analyses, thereby assisting in the derivation of meaningful conclusions from the data collected.

3.2. Context of the study

The research took place in Indonesian elementary schools where English is a compulsory foreign language and children participate in 70 minutes of English instruction weekly. In some schools, children

learn English from grade one (age 7) to grade six (age 12), whereas at other schools learning English starts between grades four to six.

Most teachers of English hold either a bachelor's or a master's degree in English teaching. Occasionally, due to a shortage of English teachers, general classroom teachers with a bachelor's degree in elementary education also teach English in certain schools. In this study, we involved qualified teachers at private and public elementary schools in Padang, Indonesia.

The closer context, Padang, is the capital city of West Sumatra province, one of the 38 provinces in Indonesia. Padang is like other capital cities in Indonesia, as it functions as an administrative and economic center. However, it is different from other cities, as most people in Padang are Minang people. They belong to one of the numerous ethnic communities that contribute to Indonesia's diverse demographics.

3.3. Participants

This study involved a convenience sample of 579 fifth graders (269 boys and 310 girls) from private and public schools in Padang city. We chose participants using these criteria: they were in fifth grade (age 11), learning English as a subject at their schools, at a private or public elementary school in Padang city, willing to participate voluntarily, their first language was Indonesian, and they were not in bilingual classes.

3.4. Data collection instrument

We developed an instrument comprising two constructs: the first part, on L2 learning motivation, included extrinsic motivation (4 items) and intrinsic motivation (4 items) based on Ryan and Deci (2020) and Mihaljević Djigunović and Nikolov (2019). The second part focused on task engagement and included behavioral (4 items), cognitive (3 items), social (3 items), and emotional (3 items) dimensions (see Table 1) based on Philp and Duchesne (2016).

All items used a 4-point Likert scale ranging from strongly disagree (1) to strongly agree (4). We chose a 4-point scale for the questionnaire following the advice of Dörnyei and Taguchi (2010). Such scales are suitable for young learners who can interpret such a rating system with ease. The scale avoids neutral responses and encourages learners to make a choice. Also, in many countries, children are assessed on a 1 to 5 scale. However, these items should not be seen as an assessment (Dörnyei & Taguchi, 2010). Items were worded in simple language to make the main ideas in them easy to understand for the children. We followed the principles outlined in the framework for young language learners by Mihaljević Djigunović and Nikolov (2019).

Table 1. Items in the motivation and task engagement questionnaire.

Constructs	Dimensions	Items
Motivation	Extrinsic	1. My parents think it is important for me to know English.
		2. I feel proud when my teacher says I am good at English
		3. I want to do well in English to get rewards from my parents.
		4. Speakers of English are cool.
	Intrinsic	5. I enjoy learning English a lot.
		6. I like to use my English in my free time.
		7. I use English for fun activities.
		8. I am interested in educational games in English.
Task engagement	Behavioral	1. I always do my best when we practice speaking.
		2. I focus when doing listening tasks.
		3. I focus on spelling and grammar when I write in English.
		4. I work hard on reading tasks.
	Cognitive	5. I organize my ideas clearly when I write in English.
		6. I guess the meaning of new words while reading in English.
		7. I try to express my idea in English.
	Social	8. I help my friends with English tasks
		9. I listen closely when my friends share their English tasks.
		10. I work with my friends to make my English writing better.
	Emotional	11. I enjoy storytelling tasks.
		12. I like to fill in blanks in tasks.
		13. I enjoy getting feedback on my writing from my teachers.

The survey was administered in the Indonesian language. The items were written in English, then they were translated into the Indonesian language by two Indonesian experts who are fluent in both English and Indonesian and have expertise in teaching English to young learners to ensure the appropriate language for YLs. After discussing small discrepancies in two items, they were finalized in Indonesian. Furthermore, we interviewed two fifth graders to check the readability of the translated items and to make sure all were easy to understand.

3.5. Procedure

Before starting data collection, ethical clearance was obtained from the Institutional Review Board (IRB) of the Doctoral School of Education at the University of Szeged (No. 24/2023). Then, the study followed the procedures approved by the ethics committee. Informed consent was secured from the parents of all children before data collection.

The questionnaire development and validation process included several stages. First, a thorough review of all published frameworks and tools was conducted; then, items were created based on previous studies using dimensions of motivation (e.g. Butler & Le, 2018; Mihaljević Djigunović & Nikolov, 2019) and task engagement (e.g. Oga-Baldwin et al., 2017). However, we did not borrow any items, as previous studies were not aligned with the aims of the study and the characteristics of the participants of the present study.

To ensure the content and ecological validity of the questionnaire, three experts gave qualitative feedback on the items. One of them was a teacher of English to young learners and an expert on surveys for children with decades of teaching and research background. Additionally, two experienced Indonesian teachers of English also reviewed the instrument for content, clarity, and readability both in English and in Indonesian. The reviewers confirmed that the items were age-appropriate, clearly worded, and aligned with the intended constructs of motivation and task engagement for elementary-level learners. In two instances, wording was simplified. Once the Indonesian versions were finalized, two children were invited to fill in the survey. As they could do so without problems, the survey was ready for use.

In November 2024, the questionnaire was filled in by fifth graders in Padang. The online questionnaire, created in Google Forms, was shared via WhatsApp with English teachers at primary schools. They forwarded it to their pupils' parents in teachers' WhatsApp groups. This was the only way we could distribute the instrument, as the schools were not equipped with an online system to make the surveys available. We needed the parents' consent to allow their children to respond to the survey. All parents were asked to ensure that their children responded to the items autonomously, as there were no correct or incorrect answers, and the survey was low stakes. However, it was not possible to ensure that all parents followed our requests.

3.6. Data analysis

The datasets collected were analyzed using exploratory and confirmatory factor analyses (EFA and CFA) with the jamovi app version 2.3.28.0 (The jamovi project, 2022). The raw data were entered into Excel and checked for missing data. No missing data were found, as all the participants who started the survey answered all the items. Then, the data were entered into the jammovi app for further analysis. We conducted Bartlett's Test and the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy to make sure the data were appropriate for further analysis, the main data analysis (EFA and CFA).

Participants were divided into two groups for statistical analysis. The first group comprised 371 YLs (164 boys and 207 girls) for exploratory factor analysis, whereas the second group had 208 learners (105 boys and 103 girls) for confirmatory factor analysis. We performed EFA and CFA on different datasets to verify the validity of the factor structure identified (Schumacker & Lomax, 2010). Both EFA and CFA were performed using the jamovi app version 2.3.28.0 (The jamovi project, 2022).

4. Results

4.1. EFA of the motivation and task engagement questionnaire

We conducted EFA with a sample of 371 YLs. The assumption checks indicated that the data are suitable for factor analysis. Bartlett's Test of Sphericity of motivation and task engagement were highly significant

($\chi^2 = 1501$, $df = 28$, $p < .001$) and ($\chi^2 = 3081$, $df = 78$, $p < .001$), respectively, suggesting that the correlation matrix is not an identity matrix and that there are significant relationships among the variables, an essential condition for conducting factor analysis. Additionally, the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy for motivation and task engagement was .897 and .948, respectively. These outcomes are considered excellent or strong, indicating that the sample is adequate for reliable factor extraction (Kaiser, 1974). These results confirm that the data met the necessary assumptions for proceeding with factor analysis.

The model fit measures of motivation indicated a borderline acceptable fit. The root mean square error of approximation (RMSEA) is .0847, slightly above the preferred threshold of .08. This result suggests some uncertainty, but it leans toward a moderate fit. The Tucker-Lewis Index (TLI) is .949, just below the ideal cutoff of .95, indicating an acceptable level of model fit. The chi-square test is significant ($\chi^2 = 47.6$, $df = 13$, $p < .001$), revealing a statistically significant difference between the model and the data, although chi-square is sensitive to sample size. Overall, while the TLI suggests a reasonably good fit, the RMSEA and significant chi-square imply that the model fit could be improved.

The model fit measures of task engagement indicate that overall, the model fits the data well. The RMSEA is .039, which is well below the commonly accepted threshold of .05, signifying a close fit. The TLI is .99, exceeding the recommended cutoff of .95, further affirming a very good model fit. Although the chi-square test is significant ($\chi^2 = 50.5$, $df = 32$, $p = .020$), suggesting some discrepancies between the model and the data, it is not unusual for this test to be sensitive in larger samples. In summary, the fit indices indicate that the model has a strong overall fit to the data.

Table 2 shows the results of the exploratory factor analysis (EFA) for the two constructs, motivation and task engagement, including the eigenvalues (SS loadings), percentage of variance explained by each factor, and the cumulative variance explained. For the motivation construct, two factors were extracted. The first factor, extrinsic motivation, accounts for 33.3% of the total variance, and the second factor, intrinsic motivation, explains an additional 24.6%, resulting in a cumulative variance of 57.9%. These results indicate that the two-factor structure captures a substantial portion of the overall variability in the motivation-related items, suggesting that motivation in this context is multidimensional and can be effectively described using two underlying factors.

Four factors were extracted for task engagement. The first factor, behavioral engagement, explains 23% of the variance, followed by the second factor, cognitive engagement, with 14.4%, the third, social engagement, with 13.7%, and the fourth, emotional engagement, with 13.4%. In total, these four factors account for 64.6% of the total variance. This number offers strong evidence that the model captures the four key dimensions of task engagement. The relatively even distribution of variance across the four factors suggests that task engagement comprises multiple distinct but equally important dimensions, each contributing to the overall construct. This outcome supports a complex model of how students engage with tasks, possibly reflecting behavioral, cognitive, social, and emotional aspects, as expected.

Figure 3 illustrates that the eigenvalue of the first factor of motivation is markedly greater than that of the others, signifying its capture of considerable variance. The eigenvalue for the second factor is slightly above the simulation values and nearly aligns with the noise level. This evidence favors a two-factor model, although Factor 1 is considerably more dominant.

Figure 4 illustrates the eigenvalues linked to the extracted factors comprising task engagement. The sharp decline from the first to the second factor indicates that the first factor accounts for a significant share of the variance. Beyond this, the curve gradually flattens, yet the eigenvalues for the initial four factors remain distinctly above the others and exceed the typical 'elbow' point of the graph. This result indicates that these four factors capture significant variance in the data before the eigenvalues flatten

Table 2. Results of exploratory factor analysis.

	Factor	SS loadings	% of variance	Cumulative %
Motivation	1	2.66	33.3	33.3
	2	1.97	24.6	57.9
Task engagement	1	2.99	23.0	23.0
	2	1.88	14.4	37.5
	3	1.79	13.7	51.2
	4	1.75	13.4	64.6

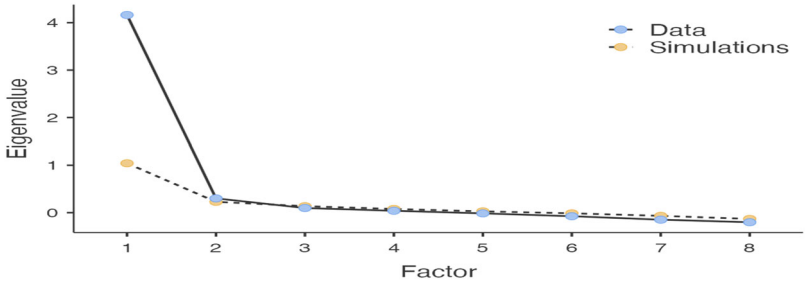

Figure 3. Screen plot of the motivation construct.

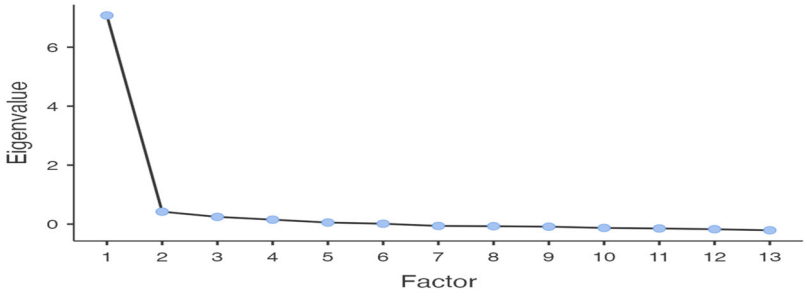

Figure 4. Screen plot of the task engagement construct.

out, pointing mostly to noise. As a result, considering the shape of the eigenvalue plot and the noticeable drop, a solution with four factors is appropriate, as these components significantly contribute to the underlying structure.

EFA was calculated using the maximum Likelihood method. The rotation method used Varimax with Kaiser Normalization (Hair et al., 2018). Table 3 displays factor loadings from the exploratory factor analysis, showing how individual items and dimensions of motivation load onto two factors. Items 1, 2, 3, and 4 are primarily loaded on factor 1 (extrinsic motivation), with loadings ranging between .508 and .745, indicating that they are moderately to strongly associated with this factor. Items 5, 6, 7, and 8 load on factor 2 (intrinsic motivation), loads ranging between .367 and .764. Item 8 (.367) is weakly related to Factor 2, whereas the others have moderate to strong relationships with it (Hair et al., 2018).

Table 3 also presents factor loadings for items related to task engagement across four extracted factors. Items 1 to 4 load strongly on factor 1, behavioral engagement (loads between .613 and .721), indicating that they represent a cohesive subdimension of task engagement. Items 5, 6, and 7 loaded to factor 2, cognitive engagement, with loadings ranging from .448 to .780, suggesting a second distinct dimension. Items 8, 9, and 10 loaded on factor 3 (social engagement), although the loading for item 8 is relatively low (.361), whereas item 9 shows a strong loading (.742). Last, items 11, 12, and 13 load on factor 4 (emotional engagement), although with weaker loadings (.355 to .517), indicating a less distinct but possibly meaningful fourth factor. Overall, the results suggest a four-factor structure of task engagement, with varying strengths of item alignment across the dimensions.

4.2. CFA of the motivation and task engagement questionnaire

Table 4 shows confirmatory factor analysis results for the constructs of English learning motivation and task engagement. Motivation was measured through two factors comprising six items, after removing items 4 and 8 due to poor model fit and loadings from .600 to .843, whereas task engagement has four factors with loadings ranging from .615 to .848, indicating good representation and construct validity, as most loadings are above .60.

To further explore discriminant validity, we performed average variance extracted (AVE) comparisons. The AVE values fall between .5 and .6, showing that each construct accounts for a minimum of 50% of the variance in its respective observed indicators, thus satisfying the fundamental requirement for convergent validity (Fornell & Larcker, 1981).

Table 3. Exploratory factor analysis of the students' questionnaire.

	Factor			
Constructs/dimensions/items	1	2	3	4
Motivation				
Extrinsic				
1. My parents think it is important for me to know English.	.508			
2. I feel proud when my teacher says I am good at English	.668			
3. I want to do well in English to get rewards from my parents	.730			
4. Speakers of English are cool.	.745			
Intrinsic				
5. I enjoy learning English a lot.		.593		
6. I like to use my English in my free time.		.717		
7. I use English for fun activities.		.764		
8. I am interested in educational games in English.		.367		
Task engagement				
Behavioral				
1. I always do my best when we practice speaking.	.613			
2. I focus when doing listening tasks.	.695			
3. I focus on spelling and grammar when I write in English.	.721			
4. I work hard on reading tasks.	.699			
Cognitive				
5. I organize my ideas clearly when I write in English.		.780		
6. I guess the meaning of new words while reading in English.		.509		
7. I try to express my idea in English.		.448		
Social				
8. I help my friends with English tasks			.361	
9. I listen closely when my friends share their English tasks.			.742	
10. I work with my friends to make my English writing better.			.444	
Emotional				
11. I enjoy storytelling tasks.				.421
12. I like to fill in blanks in tasks.				.355
13. I enjoy getting feedback on my writing from my teachers.				.517

Note. 'Maximum likelihood' extraction method was used in combination with a 'varimax' rotation.

Table 4. Factor loadings of constructs.

Constructs	Factors	Items	Factor loadings	AVE	CR
Motivation	Factor 1 (extrinsic)	1	.788	.6	.8
		2	.719		
		3	.820		
	Factor 2 (intrinsic)	5	.600	.5	.7
		6	.601		
		7	.843		
Task Engagement	Factor 1 (behavioral)	1	.774	.6	.9
		2	.823		
		3	.817		
		4	.733		
	Factor 2 (cognitive)	5	.848	.6	.8
		6	.706		
		7	.755		
	Factor 3 (social)	8	.615	.5	.7
		9	.721		
		10	.755		
	Factor 4 (emotional)	11	.750	.6	.8
		12	.709		
		13	.807		

The composite reliability (CR) values range from .7 to .9, all exceeding the suggested threshold of .70. These numbers indicate good internal consistency reliability (Fornell & Larcker, 1981). In summary, the constructs exhibited good reliability.

The CFA indicated that the model fit metrics for motivation fit the data very well. The chi-square statistic ($\chi^2 = 10.9$, $df = 8$, $p = .209$) implies that the model-generated data closely match the observed data, indicating that the model effectively captures the covariance structure of the dataset. CFI (.994) and TLI (.989) exceed the .95 threshold, signifying a good fit. SRMR (.021) meets the requirement to be below the .08 cutoff, indicating strong observed-predicted correlation alignment. RMSEA (.042) is a close fit, supporting an acceptable fit. Collectively, these indices underpin that the model fits the data exceptionally well.

The model fit statistics for task engagement show mixed results based on CFA. The chi-square test ($\chi^2 = 136$, $df = 59$, $p < .001$) indicates that the model does not fit perfectly, but it is sensitive to large samples (Kline, 2023). However, the approximate fit indices offer a clearer picture: the CFI (.944) and TLI (.926) suggest a good fit, with values over .90 acceptable and over .95, the preferred value (Hu & Bentler, 1999; Schumacker & Lomax, 2010). The SRMR (.039) indicates a good fit, whereas the RMSEA (.079) is slightly below the preferred .08 threshold, supporting adequate fit (Hu & Bentler, 1999). Despite the significance of the chi-square test, the approximate indices suggest a generally good fit.

We calculated a strong significant positive correlation between the two factors of language learning motivation ($r = .876$). This outcome indicates that a high score in one area generally corresponds to a similarly high level in the other. In other words, fifth graders' extrinsic motivation has a strong relationship with their intrinsic motivation, underpinning the claim that young learners who are motivated extrinsically also tend to be motivated intrinsically.

As for the relationships across the four factors representing the construct of children's task engagement, the correlations among behavioral, cognitive, social, and emotional factors range from .669 to .861. These outcomes suggest that the four factors are strongly related to each other. For example, behavioral engagement correlates most strongly with emotional engagement ($r = .805$), indicating that students who actively participate also tend to be emotionally invested in their learning and it correlates highly with cognitive engagement ($r = .700$) and social ($r = .669$). Additionally, cognitive engagement correlates very highly with both social engagement ($r = .861$) and emotional engagement ($r = .732$), emphasizing that in-depth thinking and strategic approaches are often paired with collaborative learning and positive emotional experiences. Likewise, social and emotional factors exhibit a strong association ($r = .742$), suggesting that interacting with peers is closely related to students' emotional investment. The overall correlation patterns indicate that although each factor signifies a separate dimension, they are significantly and strongly interrelated to one another and probably contribute collectively to overall functioning. Although closely related, these factors still represent distinct aspects of engagement based on AVE values in Table 4.

The path diagram in Figure 5 represents a two-factor model where observed variables load onto two latent factors: extrinsic motivation and intrinsic motivation. Items 1, 2, and 3 load strongly onto the extrinsic motivation factor, indicating that they share a common underlying construct. Items 5, 6, and 7 load onto the intrinsic motivation factor, representing a separate but related dimension. The double-headed arrow between extrinsic and intrinsic motivation suggests that the two latent factors are strongly correlated. This model structure implies that the observed variables group naturally into two

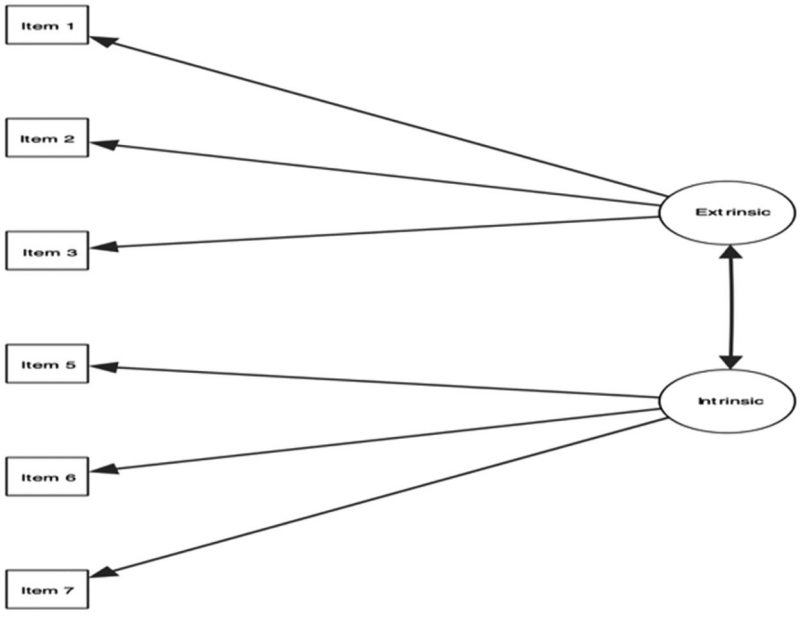

Figure 5. Structure of motivation.

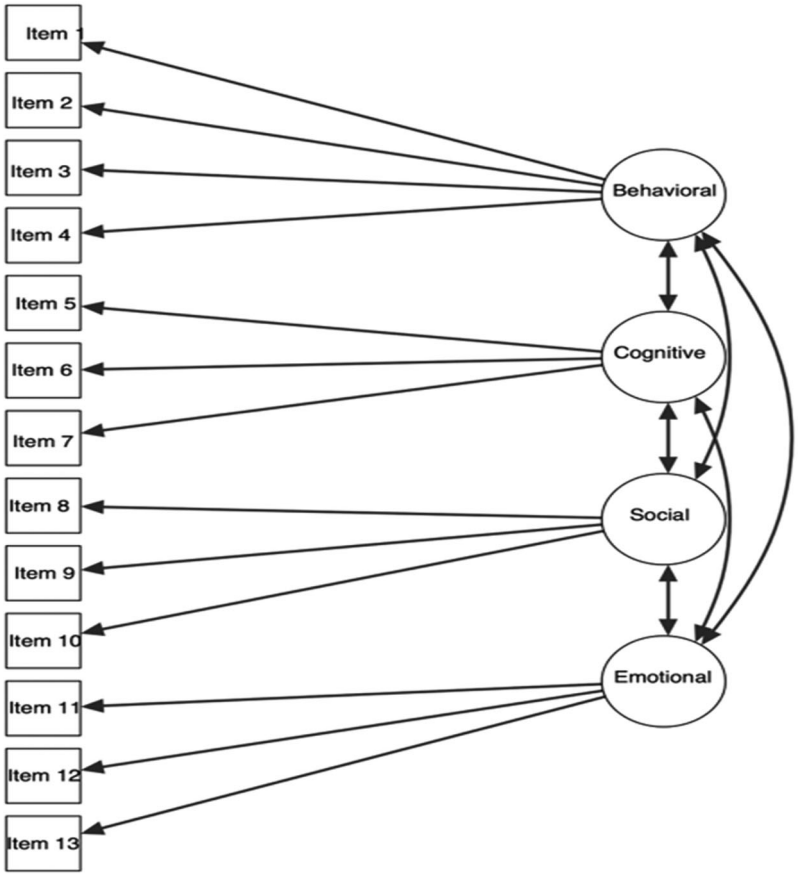

Figure 6. Structure of task engagement.

clusters based on their shared variance, supporting the presence of two distinct but interrelated latent constructs in the dataset.

Figure 6 shows the path diagram representing a structural model where 13 observed variables on the left are related to four latent factors on the right. For example, items 1, 2, 3, and 4 load strongly onto the behavioral engagement factor, indicating that they share a common underlying construct. Bidirectional arrows between behavioral, cognitive, social, and emotional factors indicate correlations or covariances among the latent factors. This model suggests that the observed variables are naturally categorized into four clusters driven by their common variance, indicating the existence of four separate yet interconnected latent constructs in the dataset.

5. Discussion

The first research question aimed to find evidence for the underlying factors included in the questionnaire tapping into two larger constructs: young learners' English learning motivation and task engagement. Both the EFA and the CFA supported the hypothesized factors in line with the literature (e.g. Ryan & Deci, 2020). These results underpin that both extrinsic and intrinsic motives are typical for learners of additional languages across multiple age groups, including young learners (Mihaljević Djigunović & Nikolov, 2019). As far as task engagement is concerned, the findings support previous studies, as four factors were confirmed: behavioral, cognitive, social, and emotional engagement in line with Philp and Duchesne' (2016) task engagement model comprising these four dimensions.

These outcomes confirming the two factors of motivation, namely extrinsic and intrinsic, are also aligned with the motivation questionnaire used in Butler and Le's (2018) study. Additionally, the four factors of task engagement confirmed in this study are partially aligned with the construct used by Oga-Baldwin et al. (2017), as our questionnaire used a more complex construct than their instrument. They

tapped into cognitive, emotional, and behavioral engagement, whereas we included a social dimension as well.

The second research question concerned the validity and reliability of the new instrument. Confirming the qualitative reviews by three experts, the statistical analyses offered evidence that the questionnaire is valid and reliable. The three experts confirmed that the items were age-appropriate and clearly worded (Mihaljević Djigunović & Nikolov, 2019) and they aligned with the intended constructs of motivation (Mihaljević Djigunović & Nikolov 2019; Ryan & Deci, 2020) and task engagement (Philp & Duchesne, 2016) for elementary-level learners.

We found a strong correlation between the two language learning motivation factors. This outcome indicates that high extrinsic motivation tends to go hand in hand with high intrinsic motivation, and vice versa. This outcome gives further support to previous findings (Carreira, 2011; Guo et al., 2023; Vidergor, 2021). Along similar lines, the four dimensions of task engagement were also strongly related to one another. In summary, even though every engagement dimension is distinct, the strong significant correlations among them form an integrated and mutually supportive system that enhances students' language development.

Although motivation and task engagement factors are closely related, these factors represent distinct aspects of motivation and task engagement. The model's constructs are valid as shown by AVE values between .5 and .6, indicating that each construct explains at least 50% of the variance in its indicators, satisfying the requirement for convergent validity (Fornell & Larcker, 1981). Furthermore, the model's constructs are reliable, as CR values of the factors range between .7 and .9, which exceed the .7 threshold, ensuring satisfactory internal consistency (Fornell & Larcker, 1981). Therefore, the validated instrument can be used for assessing YLs' motivation and task engagement in learning English with fifth graders in Pandang, Indonesia.

6. Conclusions

The study found evidence that the underlying factors of the new instrument measuring fifth graders' English learning motivation and task engagement comprise two factors for the motivation construct, extrinsic and intrinsic motivation, as expected based on theories and empirical studies. A strong relationship characterized Indonesian children's extrinsic and intrinsic motivation, indicating that young learners who are guided by extrinsic motives also learn English for intrinsic reasons. In other words, these two types of motives play an equally important role in their learning of English. As far as the task engagement construct is concerned, the findings support the model of four factors: behavioral, cognitive, social, and emotional engagement. EFA and CFA found evidence for strong interrelationships among these factors. The constructs within the models demonstrate validity and reliability as shown by AVE and CR values.

There are some limitations to this study that we must acknowledge. The first one concerns its contextual and cultural specificity. The findings are valid for a large sample of Indonesian fifth graders in the Pandang area; however, the outcomes cannot be generalized to other EFL contexts in Indonesia or to different educational systems, cultural values, or levels of English exposure. Additionally, the study is based on children's self-reported data. Participants' responses might be influenced by social desirability or limited self-awareness, potentially affecting the accuracy of the results. Furthermore, sending the survey to the children through their parents might have impacted how they responded to the items. It was not possible to ensure that the children responded fully independently, even though parents were asked to invite their children to fill out their answers autonomously. All participants knew that this project was of low stakes.

For further research, the instrument is considered valid and reliable based on the analyses. However, the items need to be piloted in new contexts beyond Pandang. Additionally, the instrument should be supplemented by other data collection methods to allow for triangulation of multiple datasets. For example, data collected from teachers, parents, and classroom observations would strengthen the robustness and applicability of the instrument and allow for a more detailed picture.

7. Implications

This study has some implications. The questionnaire is a reliable tool for educators, administrators, and policymakers to assess young EFL learners' motivation and engagement in the context where it was validated. Data collected with it can offer actionable insights to guide targeted interventions and strategies that can enhance the learning of English in primary education by using differentiated instruction, motivational strategies, and techniques increasing engagement. Teachers can use the insights to enrich their teaching with engaging, child-centered activities that boost motivation and engagement. Knowing students' motivational profiles can help in adapting instruction and creating inspiring classroom environments for children. Findings of the study enhance the understanding of young learners' motivation and engagement in a non-Western primary school context, thereby contributing to building context-sensitive models for further research.

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Author contributions

Mai Sri Lena: Conceptualization, Data curation, Formal analysis, Investigation, Writing – original draft, Writing – review & editing, Methodology, Visualization.

Marianne Nikolov: Supervision, Validation, Writing – review & editing.

Consent for publication

This manuscript is unpublished and not under review by another journal.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Ethical approval

The Doctoral School of Education's Institutional Review Board at the University of Szeged (Reference number: 24/2023).

Informed consent

Given that all participants were minors, informed and voluntary consent was obtained from their parents.

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About the authors

Mai Sri Lena is an Associate professor at Universitas Negeri Padang, Indonesia and she is currently a PhD candidate at the University of Szeged, Hungary. She is researching young learners' motivation and task engagement.

Marianne Nikolov is Professor Emerita of English Applied Linguistics at the University of Pécs, Hungary. Her publications include longitudinal classroom research, large-scale national assessment projects, and case studies. She has published widely on language learning, assessment and teachers.

ORCID

Mai Sri Lena http://orcid.org/0000-0002-1835-1963
Marianne Nikolov http://orcid.org/0000-0001-5844-4729

Data availability statement

The datasets from this study can be requested from the corresponding author.

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