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FACTORS INFLUENCING ENGLISH LANGUAGE KNOWLEDGE COLLABORATION IN CAMBODIA: A SEM BOOTSTRAPPING APPROACH

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ABSTRACT

This study examined the relationships between students' knowledge-related attitude, behaviours, and outcomes in the context of English language learning. The results from Structural Equation Modeling (SEM) revealed that positive knowledge attitude consistently supported both learning and collaboration. In contrast, knowledge activities showed no significant impact on the level of collaboration among students. In addition, factors such as cooperation, engagement in knowledge activities, and learning ability consistently contributed to enhance collaborative outcomes. The indirect effect of knowledge activities and knowledge attitude on knowledge collaboration through the mediation of learning abilities was also investigated. As a mediator variable, students' learning abilities had significant positive effect on knowledge collaboration, as indicated by the direct effect path analyses. Additionally, the findings also revealed that knowledge activities and knowledge attitude had a positive significant influence on students' knowledge collaboration through the mediation of knowledge abilities. The findings of this study conform to the work of Rahayu and Dong (2023) and Chen (2025).

KEYWORDS: English Language, Knowledge Collaboration, CFA, SEM.

1. INTRODUCTION

Proficiency in a secondary language is wildly regarded as crucial for effective participation in international collaboration. English, in particular, is considered essential for non-native speakers, especially in countries where English is the basis for communication in education, business, etc. For example, nowadays, the proliferation of English education in Cambodia is apparent in both public and private institutions, which provide a spectrum of English courses from basic to advanced levels. These programs aim to improve learners' academic achievement and professional opportunities (Nhem, 2024). Cambodian universities provide advanced English courses, including IELTS and TOEFL preparation, particularly for students in business, law, and technology, where English fluency is essential.

People who live in the urban areas of Cambodia namely, Phnom Penh, Siem Reap, Battambang, and Sihanoukville are increasingly exploring means to improve their English proficiency by enrolled in English classes offered by private language institutions. Not only in the cities and private institutions, however, government institutions and non-government organizations (NGOs) also established programs to promote people living in rural areas to attend English language programs in order to promote inclusive education. As a result, more students are gaining more opportunities to access not only to local economic and academic possibilities, but also worldwide, under advocate English program developed by the government and NGOs (Seng, 2023).

In addition to the aforementioned benefits of English, Globalization has further highlighted the significant of English for Cambodian. As a result, it is crucial for learners to explore effective techniques for learning a language. Among which knowledge collaboration technique is well-known effective technique for learning English. Giving that collaborative learning enables learners to engage and interact with each other in a productive learning environment allowing them to share their ideas, experiences, and expertise. This approach plays a crucial role in enhancing students' language ability and enriching their overall learning experiences by improving their language proficiency, promoting critical thinking and enhancing social interactions. While the traditional language learning often adopted teacher-centred methods, which students are required to work independently denying them the opportunity to practise their language in real-life context. However, when students work together, they actively participate in debates, problem-solving, and group projects that require them to use English in real-life situations. Students can improve their speaking, listening, reading, and writing skills by participating in group activities and peer exchanges (Johnson & Johnson, 1999).

Knowledge collaboration promotes independent learning which actively involves student in the learning process. Students are encouraged to move beyond being passive learners who simply absorb information. In order to address English language challenges and become more self-driven, students are encouraged to actively engage in class activities developed by teachers for instance group discussions, resource sharing, and mutual assistance. These activities bring students to take ownership of their learning journey. The results indicated that students are more likely to gain life-long learning habits, which is an important skill in globalized world where language competency is always evolving, when they are in collaborative environment.

A research was undertaken among Chinese graduate students, whose specialization not in English, to scrutinize the autonomy of English learning. The findings demonstrated that there was a hug discrepancy between students' attitude and their actions, despite knowing how important it was to take charge of their education. Therefore, fostering the motivation of students to go beyond mere knowledge acquisition indicates how important it is to create an engaging and supportive learning environment. Learning collaboration through developing in class activities for example group discussions, resource sharing, and support among students viewed as foundation to endure language-related difficulties and foster students' lifelong learning habits, especially, promote their English language proficiency (Yang, 2025).

Research has emphasized that among English learners, knowledge collaboration determines to be an essential foundation. However, the identification of factors that may have significantly shaped knowledge collaboration among students who study English in Cambodia, has not been studied using the empirical investigation yet. In order to close the research gap, the aim of this study is to apply Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM) to evaluation elements that support or undermine collaborative learning.

2. LITERATURE REVIEW

In the process of knowledge transfer for students who study English as a foreign language, in

particular, knowledge exercises deem to be an essential foundation. In the exercising process, in class where instructors who incorporate between interactive and cognitive techniques that boost student participation, foster teamwork, and aid in the development of general proficiency. Those activities were developed to advance students' skills for instance reading, writing, listening, and speaking. Technology was also taken into account to offer interactive learning opportunities, which improved the learning abilities of the students in a meaningful and practical way. Studies have explored the determinant of students learning success focusing on task-based learning, student engagement, and collaboration, especially, involve with the implementation of knowledge transfer through knowledge activities arrangements.

Findings determine that students' competence in English have intensified via in class collaborative activities specifically group based-tasks such as writing projects and group discussion, which aimed to foster deeper learning and establish learner habits of learning English. In-group discussion based and peer feedback give the opportunities to students to explore their weaknesses and strengths in both speaking and writing skills. The study pointed out that both language development and interpersonal skills vital for effective interaction were supported by collaborative work performed by students (Le et al., 2018). However, the willingness of students' participation in class activities in particular study groups, language clubs, and English-language media, in knowledge transfer is influenced largely by attitude of students. Formal education of students can be elevated in association with students who had a good attitude about English, who were more disposed to look for practice opportunities outside of the classroom (Rahayu & Dong, 2023).

A study emphasized that students' English competencies most notably vocabulary, grammar, and pronunciation are optimized through peer knowledge exchange in the form of cooperative study sessions, tutoring, and group problem-solving greatly. The peer collaboration work in line with practical application and strategy sharing, which guided students in consolidating their comprehension. In addition, knowledge activities can be implemented more broadly using digital tools (Zamiri & Esmaeili, 2024). A transformation from a traditional English class to digital environment class, particularly, by incorporating of artificial intelligence (AI) and multimedia through the use of online forums, apps, and interactive games promoted student engagement. This suggested that in class where activities arrangement are established aiming to promote students' knowledge collaboration. It has further revealed that the implementation of digital planform give supported autonomous learning and facilitated peer collaboration, which are especially beneficial for learners with limited real-world exposure to English (Procel, 2024).

Furthermore, Chen (2025) demonstrated that task-based learning strategies such as simulations, debates, and collaborative problem-solving promoted fluency and confidence in realistic communication scenarios. Together, these findings confirm that knowledge-centered learning whether driven by collaboration, extracurricular involvement, digital innovation, or task-based design plays a pivotal role in advancing English language competence. Such strategies not only enhance language proficiency but also foster social interaction, cognitive development, and motivational growth, underscoring the necessity of varied, interactive techniques in language instruction. Students' perceptions of English significantly influence their motivation, learning habits, and proficiency outcomes.

Students who possess positive attitude are generally involving with greater level of active engagement and endurance. It is necessary to understand students' attitude when developing facilitating inclusive and effective learning environments. Students, who were observed with favorable attitude toward English, were actively engaging not only in classroom activities but also played a crucial role outside the classroom activities specifically language clubs and online discussions. Along with enhancing language proficiency, these exercises encouraged self-directed learning (Goktepe, 2014). The English proficiency include speaking and writing of students, who recognized the global significance of English, were discovered that their performance outperformed their peer. Self-assurance in one's ability to learn the language also promoted increased dedication and improved results (Ahmed, 2015). The attitude of students toward English classes were also determined by their motivation, which underscored that students who hold a favorite opinion of English-speaking cultures were observed to have greater level of engagement (Getie, 2020), which in line with studied discovered by Masluha (2021) and Ningtiyas and Rahmawati (2024) in Indonesia, and Che (2024) in China.

Knowledge collaboration is also considered to be one of the most import factors in the process of knowledge transfer. Collaboration among students may develop in the form of group project, students'

ability to provide and receive feedback, and the growth for their communication skills. All of these are influenced by willingness to collaborate among students and with teachers. The establishment of collaborative learning environment in everyday situation enhances interpersonal relationship, which is determined to be an essential foundation for effective communication. This relationship was examined among Chinese college students and it was found that students who had favorable opinion of English were more common in participation in-group writing activities. The greater the values that students had toward English, the more they are willing the share their knowledge to their peer in class Zhai (2021). Moreover, it was found that students writing and speaking competency were improved when they open to cooperative learning, which gave them opportunity to get feedback from their peer (Li, 2023; Ma et al., 2024; Alzubi's, 2024)

In summary, a learner's success in mastering English is shaped by an interplay of knowledge activities, attitude, cooperation, and learning ability. Each of these elements contributes not only to the development of language proficiency but also to the learner's overall growth as a communicator and self-directed student. Therefore, the conceptual framework of the study has been constructed as shown in Figure 1, which delineates the direct effect of knowledge activities, knowledge attitude, willingness to cooperate, and learning abilities of English language learners on knowledge collaboration. Furthermore, the indirect influence of knowledge activities and attitude toward knowledge collaboration through the mediation of learners' leaning abilities is also examined.

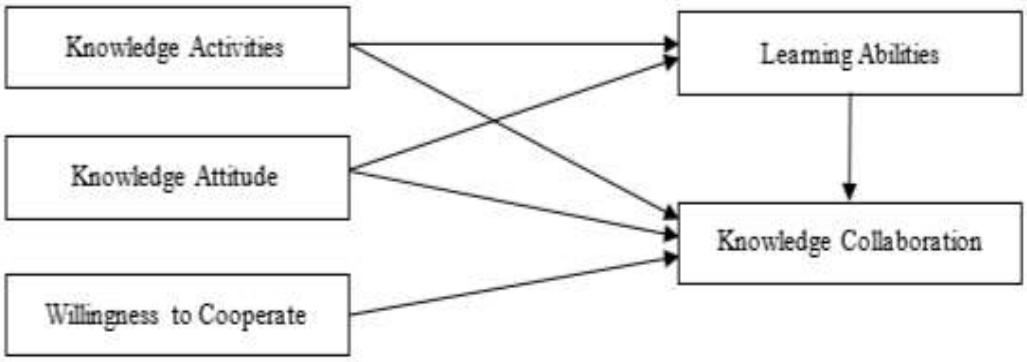

Figure 1: Conceptual Framework.

3. METHODOLOGY

Structural Equation Modeling (SEM) is utilized to analyze the impact of Willingness to Cooperate (WC), Learning Abilities (LA), Knowledge Attitude (KT), and Knowledge Activities (KA) on Knowledge Collaboration (KC) among students acquiring the English language. In addition, the study also evaluates the indirect influence of knowledge activities and attitude on knowledge collaboration among students who study English language, through the mediation of learning abilities. It is expect that students with learning abilities will promote knowledge collaboration among students in English language classes. Before proceeding with path analysis which extracted from the SEM, it is necessary to initiate with the CFA.

At the initial step, in the CFA, there will be 20 items included in the model analysis of which four items or manifest variables were input for measuring each construct such as willingness to cooperate, knowledge activities, knowledge attitude, leaning abilities, and knowledge collaboration among English language learners. However, any items had loading value less than 0.6 were omit from the analysis. Moreover, to evaluate how well the model fit the data, the comparison of the following indices include Comparative Fit Index (CFI), the Root Mean Square Error of Approximation (RMSEA), the Standardized Root Mean Square Residual (SRMR), and PCLOSE; with their threshold (See Table 1) was undertaken. In addition to checking how well the model fits, the CFA also includes a validity analyses (construct validity, convergent validity, and discriminant validity) to make sure the measurement model is correct and reliable (Hair et al., 2013). It is essential to emphasize that the model fit in CFA can be improved by eliminating items with high covariance, indicating a significant degree of

repetition among them.

It is necessary to check whether the manifest variables group under each latent construct are consistent with the conceptual definitions of the construct, this is known as construct validity of the CFA model. Convergent validity, a subcategory of construct validity, evaluates whether multiple indicators of a construct are highly correlated, suggesting they are measuring the same underlying concept. This is usually assessed using metrics such as factor loadings, Average Variance Extracted (AVE), and Composite Reliability (CR). High factor loadings (typically above 0.5 or 0.7) and AVE values above 0.5 indicate that the items are sufficiently representative of their respective factors. On the other hand, discriminant validity tests whether constructs that are supposed to be different are indeed distinct from one another. This is to make sure that no problem of multicollinearity among constructs, especially, to ensure that each construct capture a unique aspect of the model. Moreover, the square root of the AVE of each latent construct is comparing with the correlations between constructs, in order to assess the discriminant validity of the model. The AVE should be greater than the squared correlation with other constructs (Fornell & Larcker, 1981).

Table 1: Model Fit Index Threshold for CFA and SEM.

Index	Threshold	Reference
CFI	≥ 0.90	Bentler (1990)
RMSEA	≤ 0.08	Browne & Cudeck (1993)
SRMR	≤ 0.08	Hu & Bentler (1999)
PCLOSE	> 0.05	Kline (2015)

The next step is to do the Heterotrait-Monotrait (HTMT) ratio analysis. In CFA, it is very important to check that constructs are valid in order to create a good measurement model. Discriminant validity is an important part of construct validity. It checks to see if a construct is clearly different from other constructs in the model. Historically, this has been assessed by methodologies such as the Fornell-Larcker criterion and the comparison of AVE with correlations among constructs. A comparison average correlation between heterotrait-heteromethod and the average correlations among monotrait-heteromethod of the same latent construct is carried out to assess discriminant. The discriminant validity does exist in the case that the HTMT values below the commonly threshold of 0.85. In contrast, it suggests that the constructs are insufficiently distinct, if the HTMT values greater than the upper limit of 0.85, potentially weakening the model's validity (Henseler et al., 2015). A more reliable and precise discriminant validity can be achieved by incorporating HTMT into the CFA to assess the possibility that that the latent constructs share overlapping concepts (Hair et al., 2021).

All parameters in the SEM which will be applied in the path analysis are derived from the Maximum Likelihood Estimation (MLE) method and the standard errors which use to calculate test of statistics will derive from the bootstrapping technique. The number of bootstrapping simulations of the model conducts systematically to ensure robust and reliable results. Empirical findings obtained from the SEM will be used to test the research hypotheses by examining both the direct and indirect effects of the latent variables on Knowledge Collaboration.

This study focuses on Cambodian students learning English in private schools (Schools) and higher education institutions (HEIs). To collect data, a systematic questionnaire was created and it is separated into two parts. The first section collects demographic information to create a more detailed profile of the participants. The second segment includes items designed to measure observable or manifest variables, which are then utilized to build the underlying latent variables, also known as constructs, for analysis in the research model. This section's items are scored on a five-point Likert scale, from "strongly disagree" to "strongly agree," allowing for standardized replies with varied degrees of agreement. This scaling method ensures consistency and facilitates quantitative analysis. A total of 400 questionnaires were given to the target student demographic to guarantee an adequate sample size for statistical testing and model validation. The participant selection and instrument design are intended to assure the reliability and usefulness of the data collected for the purpose of investigating the factors promoting knowledge collaboration in English language learning.

4. EMPIRICAL RESULTS

A total 400 questionnaires were circulated to students who study English language at private schools and HEIs. However, due to some students returned the questionnaires back with fully not completed or some parts completed, those forms were eliminated from the next analyzing process. In total, there were 21 students omitted, where 379 students, which accounted for 94.75% of the total form distributed, left over for the next evaluation process. In addition, due to insufficient engagement or incomplete responses in their questionnaires, 20 respondents were excluded from the final analysis,

where the final valid sample size used for analysis consisted of 359 students.

Table 2: Demographic Information.

Gender	Frequency	Percent	Valid Percent
Female	242	67.4	67.4
Male	117	32.6	32.6
Total	359	100.0	100.0
Schools/HEIs	**Frequency**	**Percent**	**Valid Percent**
Schools	245	68.2	68.2
HEIs	114	31.8	31.8
Total	359	100.0	100.0

Approximately 245 students, which accounted approximately 68.2% of participants, defined to be students enrolled in Schools, however, the remaining 114 participants, equivalent to 31.8% of the sample size, were students who studied English in HEIs. The distribution of the respondents derived from data collection process represent a mix of students from both private educational settings and tertiary institutions, providing a broader perspective for the research. Moreover, among the 359 students participated in this study, 242 students were female, approximately 67.4% of the sample size, while the remaining 117 students were male, which accounted for 31.8%, as indicated in Table 2. Giving the quality of the collected data, it will be adopted in the subsequent procedures, include the analyses of CFA and SEM.

This research incorporated five latent variables known as unobserved variables include WC, LA, KT, KA, and KC. Of course, these variables are unobserved variables, where they were unable to observed directly from the respondents, however, four manifest or observed variables (items) were developed to measure each construct. Since there were five constructs, the total manifest variables were 20 items.

In order to evaluate the appropriateness of the established observed variables in measuring latent constructs, a CFA was conducted. One of the fundamental condition of the CFA is that any items have loading factor less than 0.6, it will be eliminated from the analysis. Figure 2 represents the interaction between observed and unobserved variables, and the interaction between latent constructs and latent constructs, as a result, one item, KA3 from KA construct, was eliminated due its loading factor lower than the threshold.

Prior moving to the analyses of direct, indirect, and total effects of all constructs include willingness to cooperate, learning abilities, knowledge attitude, and knowledge activities on knowledge collaboration, which will be implemented in the SEM, it is fundamentally to conduct model fit evaluation of the CFA.

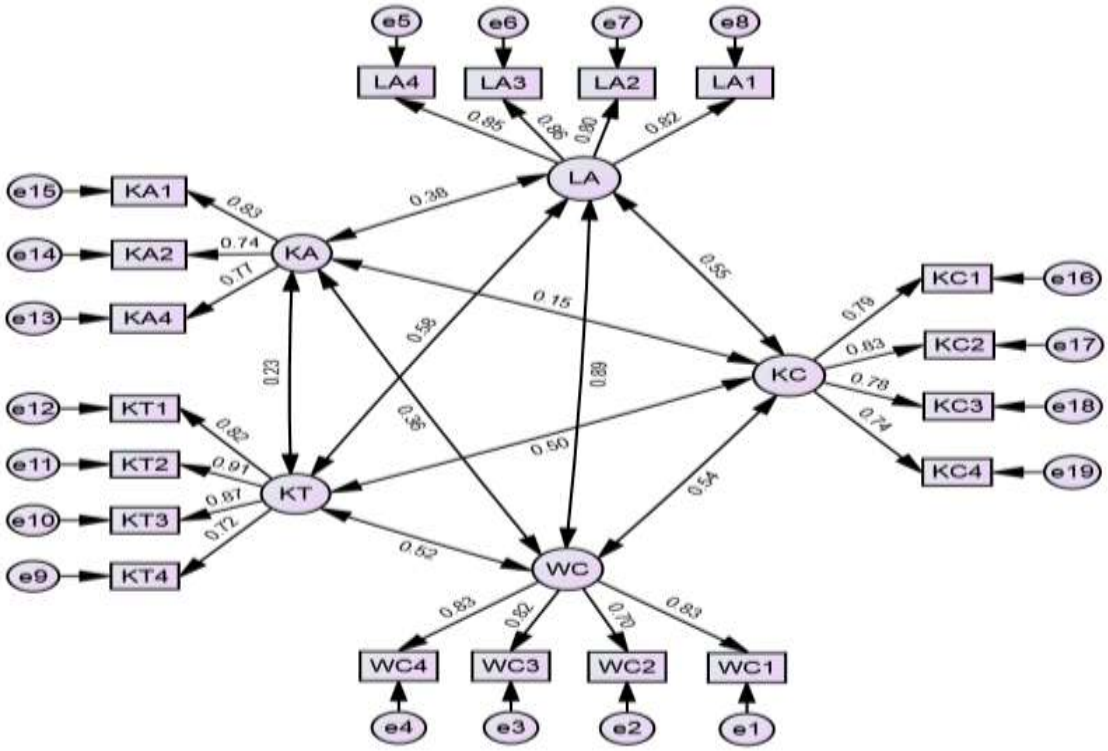

Figure 2: CFA.

The following indices present in Table 3 include CFI, RMSEA, SRMR, and PCLOSE will be applied in the model's adequacy assessment. It is worth to highlight that the comparison between observed and threshold indices will be conducted to perform model fit judgement. The fit results indicated that the CFI well exceeded the index threshold (0.976 vs. 0.90). The CFI value above 0.90 was generally deemed to reflect a well-fitting model, and thus, this result supports the model's validity (Bentler, 1990). This result implied that the hypothesized model provided a better fit than a baseline model in which all variables are uncorrelated.

Table 3: Model Fit Index of CFA.

Index	Observed	Threshold	Reference
CFI	0.976	≥ 0.90	Bentler (1990)
RMSEA	0.045	≤ 0.08	Browne & Cudeck (1993)
SRMR	0.041	≤ 0.08	Hu & Bentler (1999)
PCLOSE	0.812	> 0.05	Kline (2015)

As suggested by Browne and Cudeck (1993), the CFA that reported RMSE less than 0.08, indicated that the model has an acceptable approximation error in the population, reinforcing a reasonable level of fit. The value of RMSEA was 0.045, which far less than the threshold. In addition, the value of SRMR of 0.041 was also well less than the 0.08 recommended upper limit (Hu and Bentler, 1999). In addition, the suggested minimum threshold of 0.05 (Kline, 2015) was less than the observed PCLOSE value which found to be 0.812. Since all indices generated from the CFA were well in line with the recommended thresholds, indicating that the model fit with the data well.

Table 4 shows that all five constructs WC, LA, KT, KA, and KC have high internal consistency. The measure measurements of the model incorporated in the model were reliable since the CR values of the constructs were all higher that 0.70. Moreover, the employed manifest variables accurately represent their respective latent constructs, as explain by the values of AVE of all construct greater than 0.5 recommended threshold. These results supported convergent validity.

Table 4: Validity Analysis.

Construct	CR	AVE	MSV	MaxR(H)	WC	LA	KT	KA	KC
WC	0.875	0.638	0.798	0.883	**0.799**				
LA	0.901	0.694	0.798	0.902	0.893***	**0.833**			
KT	0.900	0.694	0.335	0.917	0.520***	0.579***	**0.833**		
KA	0.824	0.611	0.142	0.83	0.357***	0.377***	0.234***	**0.781**	
KC	0.865	0.616	0.300	0.869	0.544***	0.548***	0.505***	0.154*	**0.785**

The internal consistency and reliability of all constructs do exist, since all CR values of the latent variables are greater than threshold of 0.70. In addition, the convergent validity of each construct is evaluate by checking whether the AVE has value greater than 0.5 or not. The validity analysis presents in Table 4 shows that all constructs satisfy this condition, which claims that each construct demonstrates adequate convergent validity. When AVE greater than MSA, at the same time, the square root of AVE values present in the diagonal of Table 4 greater than inter-latent variables, the result supports discriminant validity. The validity analysis indicates that the AVE of WC and LA are 0.638 and 0.694, respectively, which are lower than its MSV value (0.798 for WC and LA). Moreover, the square root of AVE for WC is 0.799 and for LA is 0.833, which the values less than the correlation between the two variables (0.893). These analyses suggest that wiliness to cooperate and learning abilities, both constructs, are overlap. However, in order to fulfill the objectives of this study, despite the overlapping between the two constructs, the model still maintain all variables in the system to the next process which the analysis of a structural equation modeling. The result of Table 4 has further showed that the value of all construct's MaxR(H) are greater than the threshold of 0.80, which concluded that all items were perfectly measured of the constructs.

Table 5: HTMT Analysis.

Construct	WC	LA	KT	KA	KC
WC					
LA	0.794				
KT	0.482	0.542			
KA	0.326	0.334	0.208		
KC	0.465	0.481	0.457	0.134	

Next, it is necessary to evaluate discriminant validity of the CFA model. In this study, the HTMT ratio of all constructs are brought into discussion, where the recommended upper limited threshold is 0.85. HTMT scores lower than the suggested threshold of 0.85 indicate that each construct is empirically distinct from the others. Table 5 shows that all pairs of the five assessed constructs had HTMT values that are below this threshold. This

means that the constructs are very different from each other. The results of HTMT scores presented demonstrated that each individual construct developed in this research captured a different part of the theoretical model, which concluded that the latent variables were statistically different from each other.

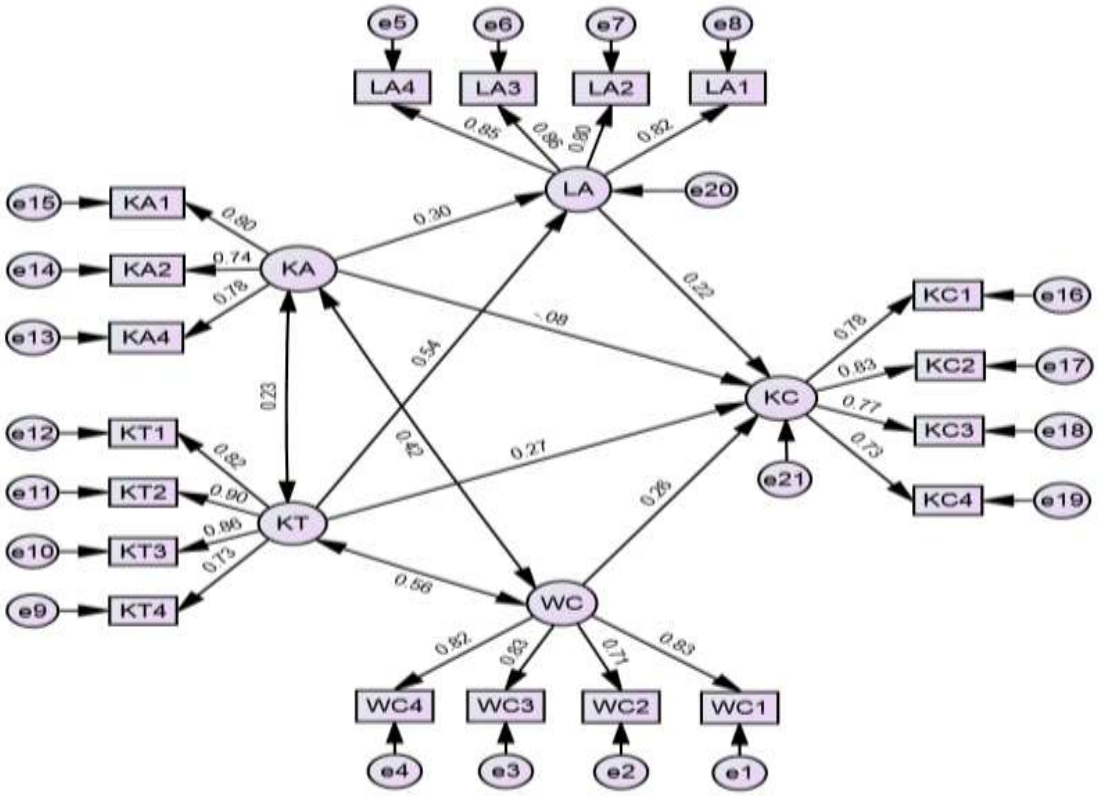

Figure 3: SEM.

The route analysis is included in both unstandardized and standardized estimated coefficients, with the probability value (p-value) for all constructs obtained by the Bootstrapping technique (Two-tailed significance). Despite unstandardized and standardized estimates are provided in the direct, indirect, and total effects of the study, however, in term of results interpretation, the discussion will rely on standardized coefficients. The regression results presented in Table 6 show the direct effect results. Both, students' knowledge activity (Coefficient = 0.302, p = 0.000) and knowledge attitude (Coefficient = 0.542, p = 0.000) constructs exert a significantly positive influence on learning ability. The impact of knowledge attitude on learning ability exceeds the influence of learning ability derived from knowledge activities (0.542 vs. 0.302).

Table 6: Direct Effect.

Variable			Unstandardized Estimate	Standardized Estimate	*p*-value
KA	→	LA	0.296	0.302	0.000
KT	→	LA	0.583	0.542	0.000
WC	→	KC	0.218	0.256	0.009
KA	→	KC	-0.063	-0.084	0.199
KT	→	KC	0.226	0.272	0.001
LA	→	KC	0.170	0.220	0.048

Willingness to cooperate shows a statistically significant and positive influence on knowledge collaboration, with a coefficient of 0.256 (p = 0.016), which suggests that student who are willingness to cooperate will promote knowledge collaboration in English learning class. In contrast, the study found no relationship between knowledge activities and knowledge collaboration (Coefficient = -0.084, p =

0.199) since the p-value is greater than 5% significant level. Knowledge collaboration definitely require active interaction and sharing, where these performances may not necessary influence by knowledge activities, which demonstrate the reason to explain the insignificant relationship between the two variables.

The estimated parameter of knowledge attitude is 0.272 associated with its p-value of 0.001, which is well below the significant level of 1%, indicates there exist a significant positive effect of knowledge attitude on knowledge collaboration. More interestingly, students' learning ability determined to be a mediation variable, has a statically significant influence on knowledge collaboration (Coefficient = 0.220, p = 0.048) since the estimated parameter is positive and the p-value is less than 5% significant level. This emphasizes that student with high learning ability willing to collaborate knowledge in English learning classes. It may also reflect for capable learners to collaborate setting due to efficiencies within group dynamics. The significant direct influence of learning ability on knowledge collaboration will provide a critical explanation of indirect effect results discuss in the next section.

In addition, to the assessment the direct effect of knowledge activities and knowledge attitude on knowledge collaboration, The indirect impact of the two variables on knowledge collaboration through the mediation of learning ability is also conducted. As indicate in Table 7, the first mediation pathway, KA → LA → KC, knowledge activities has a statistically significant positive impact on knowledge collaboration through the mediation of learning abilities (Coefficient = 0.067, p = 0.048). Likewise, the second mediation pathway, KT → LA → KC, knowledge attitude is also has a statistically significant impact on knowledge collaboration through the mediation of learning abilities (Coefficient = 0.119, p = 0.048).

Table 7: Indirect Effect.

Variable					Unstandardized Estimate	Standardized Estimate	*p*-value
KA	→	LA	→	KC	0.050	0.067	0.048
KT	→	LA	→	KC	0.099	0.119	0.048

Total effect define a combination between direct and indirect effects, which explain an overall perspective on how student who study English language influence knowledge collaboration. The empirical findings evaluate the role of knowledge activity, knowledge attitude, learning abilities, and willingness to cooperate in shaping collaborative knowledge outcomes.

Table 8: Total Effect.

Variable			Unstandardized Estimate	Standardized Estimate	*p*-value
KA	→	LA	0.296	0.302	0.000
KT	→	LA	0.583	0.542	0.000
WC	→	KC	0.218	0.256	0.009
KA	→	KC	-0.063	-0.084	0.199
KT	→	KC	0.226	0.272	0.001
LA	→	KC	0.170	0.220	0.048

Table 8 represents the empirical findings of the study, which highlight that at significant level of 1%, willingness to cooperate has a significant impact on knowledge collaboration among English language learners as the estimated coefficient of 0.256 and p-value is 0.009. Moreover, the path coefficients of knowledge attitude and learning abilities are 0.272 (0.001) and 0.220 (0.048), which have positively significant influence on knowledge collaboration at 1% and 5% level of significant, respectively. However, knowledge activities show no impact on knowledge collaboration (Coefficient = -0.084, p = 0.199). Of course, the results of direct and total effects represent the influence of knowledge activities and attitude on learning abilities are presented. It is worth to highlight that the empirical results indicate the impact of knowledge activities and attitude on learning abilities are indifferent between direct and total effects.

5. CONCLUSION

The SEM results reveal a complex relationship between students' knowledge-related attitude, behaviors, and outcomes. A positive knowledge attitude among English language learners consistently proves advantageous, supporting both learning and collaboration. The empirical findings derived from SEM described the relationship

between students' knowledge-related attitude, behaviors, and outcomes. The results of the study suggested that students' learning and collaboration in English language study classes will be proved depending on how positive knowledge attitude of student toward the English classes. In contrast, knowledge activities showed no significant influence on knowledge collaboration among English learners, however, the increase in knowledge activities in class improve students' learning ability. These findings consistence in real-world educational settings that students will learn more in the classes, which incorporate more learning abilities. Similarly, the more the attitude that students have toward the class, the more the learning ability they have in learning.

It is inferred that the level of collaboration among students in knowledge sharing can be enhanced through the increase in students' willingness to cooperate, knowledge attitude, and especially leaning abilities. Moreover, the significant positive impact of learning abilities on knowledge collaboration among students who study English underline the critical role of learning abilities construct performing as a mediator variable in explaining the indirect impact of students' knowledge activities and attitude toward level of knowledge collaboration.

Despite there has no statistically significant direct impact of knowledge activities on students' knowledge collaboration in English classes, however, it suggests that students' knowledge activities have significant influence on level of collaboration, through the mediation of learning abilities. These interactions explain that the level of students' knowledge collaboration can be strengthened, when there are more knowledge activities administered in English language study classes, however, it also depends on students' learning abilities.

In order to advance collaboration among high-ability English learners, design group activities that demand varied contributions, support peer-to-peer learning, and rotate leadership roles. Create a positive atmosphere that values knowledge sharing, emphasizes attentive listening, and recognizes group achievements to cultivate mutual respect and enhance overall language development. In addition, to facilitate knowledge collaboration among English language learners in Cambodian and Southeast Asian classrooms, education policies should support a balanced approach that integrates individual learning with group-based activities. Curricula should highlight collaborative methods, like project-based learning, that value both individual achievement and teamwork. Assessment procedures must acknowledge and incentivize both individual achievement and the exchange of knowledge among participants. Teachers should receive training that prepares them to work with students of varying skill levels while fostering a love of learning. Learning abilities also need to match students' motivations and skills with shared objectives. Cultivating culturally responsive, supportive learning environments can reduce the negative impact of high learning ability on collaboration.

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