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Does Self-Efficacy Moderate the Contribution of Metacognitive Awareness to Listening Comprehension?

Moh. Ana Usuludin
IAIN Kediri, Kediri, Indonesia
me.anausul@mail.com

Rohmani Nur Indah
UIN Maulana Malik Ibrahim Malang, Malang, Indonesia
indah@bsi.uin-malang.ac.id

Abstract

Does Self-Efficacy Moderate the Contribution of Metacognitive Awareness to Listening Comprehension? Current studies relate the issue of listening skills to several aspects. However, it still requires more empirical findings on the contribution of self-efficacy and metacognition toward listening comprehension. This study aimed to find the effect of metacognition on listening ability through self-efficacy and seek a suitable structural model. The chosen design was ex-post facto research with a correlation using a path analysis model. This research was conducted at one of the state Islamic high schools in the city of Kediri. A total of 250 ten grader students participated in this research. Three instruments were used to collect data, including a closed questionnaire about self-efficacy, a closed questionnaire about students' metacognition sensitivity, and listening questions that adopted the TOEFL Junior Test. The results showed that the metacognitive influence model on listening did not significantly affect (p = .180), while the other two models showed a significant effect (metacognitive on self-efficacy, p = .000; self-efficacy on listening ability, p = .011). However, the indirect effect of students' metacognition abilities on listening ability through self-efficacy was significant at .059. Related to the path analysis model, the partial-mediated path analysis model was compiled, modified into a full-mediated model to meet the criteria of goodness of fit index.

Keywords : listening comprehension, metacognitive awareness, self-efficacy, path analysis.

Introduction

In the language learning process, many factors influence student learning outcomes, such as physical, psychological, sociocultural, sociological, and metalinguistic (Budianto, 2011; Haidara, 2014; L. Li & Wu, 2015; Martos, 2006; Sadi &

Uyar, 2013). These factors play an important role in the learning process and language acquisition, especially students' foreign languages. English as a foreign

language is significantly influenced by psychological aspects, such as cognition, metacognition, anxiety, emotions, attitudes and behavior, self-confidence, self-confidence, and a strong sense of student empathy (Haidara, 2016; Martos, 2006). These prominent predictors easily influence the student's language acquisition process (Chen, 2011). Positive influences may appear, which can benefit the development of the student's language. Conversely, these factors can also cause new problems for students' language development.

One of the popular psychological factors among researchers is students' metacognitive sensitivity (Farahian & Avarzamani, 2018; Nett et al., 2012). Metacognitive sensitivity has a significant relationship and influence on students' mastery of language skills such as reading, listening, speaking, and writing skills (Anjomshoaa et al., 2012; Haidara, 2016; Karbalei, 2011; Negretti, 2012; M. Rahimi & Katal, 2012). However, (Norman, 2020) found that metacognitive did not always positively influence student success in learning. This adds new knowledge that metacognitive abilities can harm students because they interfere with student performance and cause negative feelings when the student is working on a task.

Metacognitive ability is the ability of students to generate self-awareness to learn and think. According to Flavel (Goh, 2008; Vandergrift & Goh, 2012), this ability dominates influencing how students think, what topics need to be considered according to the learning task. Besides, this ability also plays a role in how these students can organize their thinking to suit the situations and conditions of knowledge. There are several basic things in metacognitive abilities so that students' metacognitive abilities can be well intertwined. Gourgey and Brown (Kesici et al., 2011) define metacognitive abilities as students' ability to plan to learn, solve learning problems, develop awareness about thinking processes, and condition these processes.

Metacognitive awareness helps students focus on increasing awareness in the learning process so that the learning planning process, monitoring, and self-evaluation can be well-conditioned (Bahri & Corebima, 2015). Also, metacognitive abilities help students communicate, remember, and solve problems (Cañada & Arumí, 2012; Listiana et al., 2016). In measuring students' metacognitive abilities, Vandergrift (Sahragrard et al., 2015) states five main factors, namely: planning and

evaluation, individual knowledge, mental intelligence (mental translation), and focused attention (directed attention). Then, (Schraw & Moshman, 1995) divides individual knowledge into several aspects: declarative knowledge, procedural knowledge, and conditional knowledge.

Norman (2020) stated that metacognition abilities could harm students because they interfere with student performance and cause negative feelings when the student is working on a task. A student who feels unable to do something well will have low metacognitive sensitivity. In this case, it appears that self-efficacy helps students develop metacognitive sensitivity. This is clarified by several previous studies that state that students with self-efficacy will develop good metacognitive sensitivity (Hayat & Shateri, 2019; Nosratinia et al., 2014; Wibowo et al., 2018). Good metacognition conditions indicate that students have high mental processes in the learning process. In terms of language acquisition, this mental process is related to making learning plans, using strategies to facilitate language acquisition and increasing sensitivity in solving difficulties. What is more, mental processes also include students' ability to determine learning goals and adjust learning outcomes to the scope of learning (Countinho, 2007).

The concept of self-efficacy is a concept from Bandura (1997), a person's sociocognitive factor in completing a job. Self-efficacy is an individual's perception of his ability to complete a task (Nosratinia et al., 2014). According to Multon and Brown, self-efficacy does not depend on a person's ability to complete tasks that are assigned to focus more on one's belief in one's ability to be able to complete tasks well and become accustomed and skilled in dealing with these tasks (Mills et al., 2006). Then, (Kazemi et al., 2013) explained that a person's self-efficacy level depends on how much effort, activity, and persistence in completing tasks. A good self-efficacy ability of a person shows that students have a strong level of self-confidence and have high learning motivation. Besides, they also do not have significant difficulties in arranging the right strategy for doing assignments.

Student self-efficacy is closely related to metacognition abilities (Ghonsooly et al., 2014; Rahman & Philips, 2006; Umam et al., 2020). The positive relationship between these two factors shows that when a student's self-efficacy increases, the metacognition ability also increases with self-efficacy. In acquiring English, metacognition and self-efficacy affect the mastery of English skills, especially in listening skills (M. Rahimi & Abedi, 2014; M. Rahimi & Katal, 2012; Rahimirad & Zare-

ee, 2015; J. Xu & Huang, 2018). Students need good metacognitive skills with self-efficacy in listening activities because language is not processed in writing but orally in these activities. The spoken language is produced and then captured through the ear and transmitted to the brain to interpret the spoken language's meaning and purpose (Oktarini & Suyata, 2019). Students process new vocabulary that they hear from the speaker (Alilateh, A., & Widyantoro, 2019). Even more. Listening is the most difficult activity among the four other language skills (C. C. M. Goh, 2000; F. Xu, 2011).

In the context of learning English in Indonesia, self-efficacy and metacognition abilities greatly influence students' mastery of English language skills, especially listening skills. A student's self-efficacy plays a positive role and is very useful for overcoming difficulties that arise when facing listening skills, which are very problematic for students (Firdausi & Patria, 2019; Isty et al., 2017). Thus, students who have a low level of self-efficacy will have difficulty listening skills in learning English (Kazemi et al., 2013; A. Rahimi & Abedini, 2009). In addition to self-efficacy, students' metacognition abilities also influence learning English as a foreign language in Indonesia. (Fiani, 2018) argued that listening skills for international students, especially in Indonesia, are fundamental to master. In line with the mastery of listening skills, students' metacognitive abilities play an active role in successfully acquiring these language skills. Increasing metacognition abilities is useful for increasing student sensitivity in the learning process, determining strategies, and knowing student strengths and weaknesses.

In the current research, self-efficacy, metacognitive abilities, and listening abilities were the main topics. Previous research by the same researchers regarding the relationship of self-efficacy, metacognition, and listening ability has been discussed in previous research (Umam et al., 2020). This study has the main focus on finding the effect of metacognitive awareness on listening ability through self-efficacy. Metacognitive awareness is an independent variable, while self-efficacy is a supporting variable in connecting metacognition and listening skills. Besides, this study also finds out the suitability of the structural model used with the goodness of fit.

Methodology

The research model used in this study is a correlation using a path analysis model. Judging from the method, this study adopted an ex post facto research model because this study testing the hypothesis of the effect of self-efficacy and metacognition on students' listening ability. No specific treatment was used to change the characteristics of students' self-efficacy and metacognition. This research was conducted at one of the state Islamic high schools in the city of Kediri. Participants in this study were 250 students of class X consisting of 170 female students and 80 male students aged 15 to 16.

For the data collection process, the researcher used two kinds of instruments, namely questionnaires and tests. The first is a questionnaire to measure self-efficacy adapted from a self-efficacy questionnaire (SEQ) (A. Rahimi & Abedini, 2009), Motivated Strategies for Learning Questionnaire or MSLQ (Jinks & Morgan, 1999), and Children's Perceived Academic Self - Efficacy: An Inventory Scale (Pintrich & de Groot, 1990). 25 questions have been tested before being given to participants. The questionnaire has a reliability level of 0.811. Second, a closed questionnaire containing 25 questions was used to measure students' metacognitive sensitivity. The questionnaire was adapted from (Vandergrift et al., 2006) entitled Metacognitive Awareness Listening Questionnaire (MALQ) and from (Schraw & Dennison, 1994) entitled the Metacognitive Awareness Inventory (MAI). The questionnaire was tested first before giving it to the participants to ensure that the questionnaire was valid and reliable. From the pilot's results, the reliability value was 0.793. The third instrument is listening to questions that adopt the TOEFL Junior Test from ETS (Educational Testing Service, 2012). After validity and reliability were carried out, the questions were valid and used 29 items from 42 items.

Data obtained from the process of distributing questionnaires during class hours, which lasts for three weeks. In the first week, participants were given a questionnaire about metacognitive abilities, and during the filling in, the researcher accompanied and explained the points discussed in the questionnaire items. In the second week, participants worked on listening questions for 40 minutes with audio repeated twice. Then, participants filled out a self-efficacy questionnaire during the third week.

Data were analyzed according to the research hypothesis. Based on the research hypothesis, the researcher used a path-analysis model of mediation

(Sarwono, 2011) because metacognition (Y) will be used as a link that determines the effect of the efficacy variable (X) on listening ability (Z). SPSS AMOS 24.0 was used to create a path-analysis pattern and calculate the effect of metacognition on listening ability through self-efficacy as a moderating variable. Then, to determine the significance of the effect, researchers used the Z-Sobel test. In the analysis process, the goodness of fit criteria test is used to adjust whether the study's model is fit.

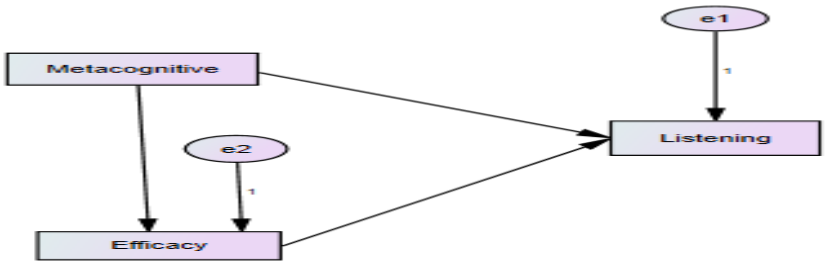

Figure 1. Estimated Path Model

Findings

Students' Metacognitive Awareness, Self-Efficacy, and Listening Comprehension

This study has the main focus to determine how much influence metacognitive awareness has on students' listening ability with self-efficacy as a connecting variable. After the data has been collected, it is necessary to know the description of the data. The following are the results of the descriptive data analysis.

Table 1. Descriptive Statistics of Metacognitive Awareness, Self-Efficacy, dan Listening Comprehension

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Listening	250	83	7	90	43.00	17.274	298.386
Efficacy	250	40	46	86	62.13	7.504	56.308
Metacognition	250	36	56	92	75.08	6.753	45.603
Valid N (Listwise)	250						

Table 1 shows that the listening test's mean value (N = 250) was 43. Students' lowest score was 7 on a scale of 100, while the highest score was 90. The interval for these scores was 83. The standard deviation indicated that the data is

spread out from the data intervals and not anywhere near the average. The mean of the students' self-efficacy scores was 62.13 with a standard deviation of 7,504, indicating that the data were well distributed because the standard deviation was lower than the mean score. Regarding the self-efficacy score, the student's highest score was 86, while the lowest score was 46, with the distance between the two highest and lowest scores being 40. Students' metacognitive awareness in the table above shows that the data distance is 36, with the highest data is 92, while the lowest result is 56. The mean of students' metacognition is 75.08 with a standard deviation of 6,753, which indicates that the data is well distributed.

The contribution of self-efficacy to metacognition toward listening comprehension

After knowing the descriptive statistical data obtained, path analysis was carried out using AMOS; the contribution among variables is presented in figure 2, which is then followed by the regression calculation results.

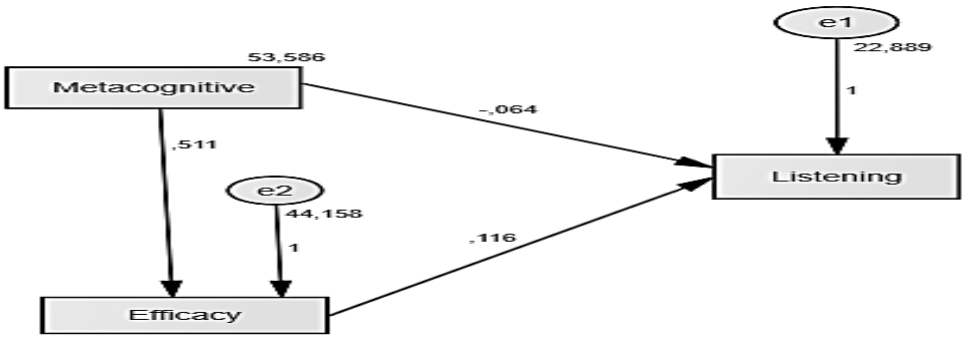

Figure 2. Estimated Path Model

Table 2. Regression weight for estimated path model

Association			Estimate	S.E.	C.R.	P	Label
Efficacy	<---	Metacognitive	,511	,058	8,857	***	Significant
Listening	<---	Metacognitive	-,064	,048	-1,340	,180	Not significant
Listening	<---	Efficacy	,116	,046	2,537	,011	Significant

Table 2 shows that the regression coefficient has a direct effect between variables X, Y, and Z. The table above shows three models of variables of metacognitive ability, self-efficacy, and listening ability. Of the three models, one

model (metacognitive towards listening) did not show a significant effect (p = .180), while the other two models showed a significant effect (metacognitive on self-efficacy, p = .000; self-efficacy on listening ability, p. = .011). Metacognitive variables did not show a positive and significant direct effect on students' listening ability (R = -. 064, p = .180).

Table 2 shows that students' metacognition sensitivity has a strong enough effect on self-efficacy with a coefficient of .511. Besides, self-efficacy has a weak influence on students' listening ability. Then, contrary to the two effects mentioned, students' metacognitive sensitivity abilities were found to be very weak and also have a negative effect. This shows that if students have a good metacognition process, their self-efficacy will also have a parallel performance to their metacognitive abilities. However, related to the relationship between students' metacognition and listening ability, the results of the analysis showed that metacognition had no significant relationship and influence (p <.05), so it could be assumed that in this study, if students had poor metacognition skills, it would not have an impact significantly to their listening ability. In accordance with the results of the study, metacognition ability contributed .41% (R = -.064; R2 = .0041) to their listening ability.

The direct effect was found to be insignificant in the present study. They need to adapt and choose a strategy in the process of acquiring listening skills. This study has limitations in testing students' real and field-based metacognitive strategies because of the instrument's limitations.

Table 3 shows the Z-Sobel calculation to determine the significance of metacognition ability on students' listening ability with self-efficacy as the connecting variable.

Table 3. Indirect effect of metacognitive awareness toward listening comprehension

Association	Effect		Z-sobel	Label
	Direct	Indirect		
metacognitive >> efficacy >> listening	-.064	.059	2.424	Significant

The indirect effect of metacognition ability on students' listening ability through self-efficacy as a moderating variable produces a coefficient of .059. The Z-

Sobel number shows 2,424 indicating that self-efficacy as a moderating variable significantly affects the metacognition ability of students' listening abilities (2,424> 1.96). From this coefficient, it can be concluded that if the metacognition ability has increased by 1, the students' listening ability will increase by .059. In contrast to the direct effect, the indirect effect between students 'metacognitive awareness significantly affects listening ability through self-efficacy, indicating that metacognition works well with self-efficacy variables to influence students' listening abilities.

Following the study results, students 'metacognitive abilities were not found to have a direct effect, but the indirect effect was found that metacognitive abilities significantly affected students' listening abilities. The results of this study reveal that metacognitive behavior will have a stronger effect on listening ability if it is bridged by other factors, which in this case, is self-efficacy.

It is modified by removing it with a dashed line marked on the model because there is an insignificant path. The model is modified by eliminating the direct relationship between metacognitive variables and students' listening ability.

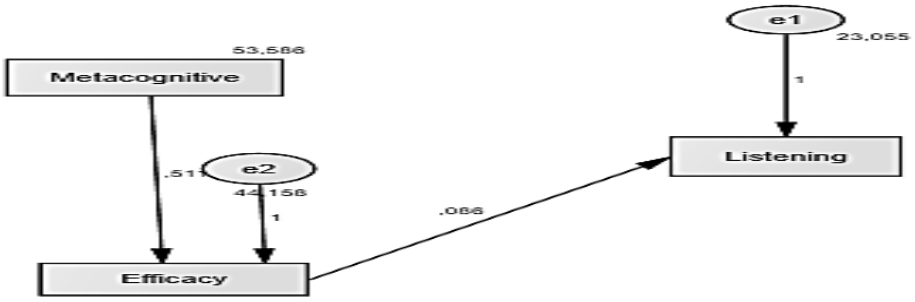

Figure 3. Revised estimated path model

After modifying the model, there was a change in the coefficient that linked self-efficacy to listening. Table 4 shows the regression coefficient between variables after modifying the model.

Table 4. Regression weights for revised path model

Association			Estimate	S.E.	C.R.	P	Label
Efficacy	<---	Metacognitive	,511	,058	8,857	***	Significant
Listening	<---	Efficacy	,086	,040	2,149	,032	Significant

Table 3 shows the path analysis results of the direct metacognition sensitivity ability to self-efficacy and the effect of self-efficacy on students' listening ability directly. In the first line (metacognitive to self-efficacy), it shows that there is a significant direct effect (p = .000). In the second channel, the effect of self-efficacy on direct listening ability also found a significant effect (p = .032). Due to the elimination of one of the path-analysis lines, the level of influence of self-efficacy on students' listening ability is still reported with a weak influence but with a lower coefficient (estimate; .086). However, students' metacognition sensitivity still had a strong enough effect on self-efficacy with the same coefficient of .511. The model was modified by eliminating the direct relationship between metacognitive variables and students' listening ability. The self-efficacy coefficient on listening ability was changed to .086, which was smaller than the coefficient when self-efficacy affected metacognitive skills on listening ability, namely .116. So, it can be concluded that if metacognitive does not play a direct role, then the effect of a student's self-efficacy will play a role with weaker performance.

After the path analysis test is carried out, the goodness of fit criteria test is carried out to confirm that this study's revised structural model is fit.

Table 5. Goodness of fit index

Kriteria	Nilai Cut-off	Hasil	Label
Chi-square	≥ .05	1.790	Good
Probability	≥ .05	.181	Good
GFI	≥ .90	.995	Good
AGFI	≥ .90	.971	Good
TLI	≥ .95	.967	Good
CFI	≥ .95	.989	Good
RMSEA	≤ .08	.056	Good

The goodness of fit criteria table shows that all criteria have good criteria or meet the goodness of fit index. From this statement, it is stated that the estimated structural model proposed in this study is accepted.

Table 6. Squared multiple correlation for the model

Variable	Estimate
Efficacy	,240
Listening	,018

Based on the squared multiple correlations calculation, the magnitude of the predictor influence of self-efficacy in the model was 24%. In other words, the error variance of the self-efficacy variable was 76% of the self-efficacy variance. Then, the magnitude of the influence of the predictors of the listening variable on the model is 1.8%, indicating that the listening variable's error is 98.2% of the listening variance itself. It appears that the contribution of metacognitive and self-efficacy to listening in the current model study is minimal. This may be due to the small direct effect of self-efficacy (Table 4) on listening. However, the two predictors of listening indicate that metacognition, along with self-efficacy, is a predictor that positively influences students' listening ability.

Discussion

The students' metacognitive abilities, as the direct effect was found to be insignificant in the present study. This is in contrast to research conducted by (Bozorgian & Fakhri Alamdari, 2018), (Taheri & Zade, 2018), and (Taguchi, 2017) which found that listening skills received significant support directly from students' metacognitive abilities. In (Sedhu et al., 2017), students' metacognitive abilities are incorporated into learning strategies and real learning activities to provide real practice. In the context of students 'language skills, there may be more dominant factors in influencing listening skills, so that students' metacognitive abilities are not prominent and are not significant in affecting listening skills. By their characteristics, grade 10 students in high schools in Indonesia receive complex listening practice for the first time. From this, several problems related to listening emerged and dominated the process of acquiring listening skills. They are not familiar with new vocabulary, accents that appear when listening, and the speaker's speed in audio (Merilia, 2019). They need to adapt and choose a strategy in the process of acquiring listening skills. This study has limitations in testing students' real and field-based metacognitive strategies because of the instrument's limitations.

Following the study results, students 'metacognitive abilities were not found to have a direct effect, but the indirect effect was found that metacognitive abilities significantly affected students' listening abilities. This is in line with findings by (Vandergrift & Baker, 2015), who found that students 'metacognitive abilities only had an indirect but significant effect on students' listening abilities. Moreover, (Oxford, 1990) classifies metacognitive abilities as one factor that indirectly

influences language acquisition activities. In the research findings, students' metacognition ability was minimal in indirectly affecting their listening ability. Thus, researchers assume that other abilities, such as students' affective and social abilities, may be more dominant than metacognitive abilities. (Fetriani et al., 2020) their research found that metacognition ability was the most recessive factor compared to students 'affective and social abilities, which indirectly affected students' listening ability. The factors that affect the ability to acquire language skills have an important role in mediating the metacognitive relationship with listening skills. In this study, students 'self-efficacy was explained as having a role in mediating the effect of students' metacognitive on listening ability. In addition, factors such as vocabulary knowledBesidesrift & Baker, 2015), study approach (Wang & Treffers-Daller, 2017), and also several cognitive strategies (W. Li, 2013) work together with students' metacognitive abilities in influencing their listening.

Moreover, the results of this study reveal that metacognitive behavior will have a stronger effect on listening ability if it is bridged by other factors, which in this case, is self-efficacy. (Anderson, 2012; Ongowo & Hungi, 2014) stated that students' metacognitive abilities significantly influence language skills with the help of one's self-confidence. Strong beliefs about self-efficacy help students understand the assigned assignments and try to be more active in achieving learning goals and outcomes (Hanin et al., 2019). When the tasks and goals are increasingly complex, self-efficacy plays a greater role in developing metacognitive abilities. So, in its role, students' metacognitive abilities will influence and shape their self-efficacy abilities to achieve the learning outcomes that have been passed (Hanin et al., 2019; Shehzad, 2018; Taki & Esmaeili, 2017).

Finally, based the result the two predictors of listening indicate that metacognition, along with self-efficacy, is a predictor that positively influences students' listening ability. (Taguchi, 2017) argues that students who have good performance in listening skills have high levels of self-efficacy and listening strategies. These two variables have a significant role in predicting the results of students' listening abilities (Rahimi & Abedi, 2014; Rahimirad & Zare-ee, 2015).

Conclusion

The results of this study corroborate and, at the same time, refute several previous studies carried out in different contexts. In this study, students 'metacognitive abilities did not directly affect students' listening abilities, but an indirect and significant effect. Student self-efficacy shows its role in mediating the effect of students' metacognitive on listening ability. Then, the partial-mediated model path analysis model was compiled, modified into a full-mediated model due to the insignificant direct effect of metacognition sensitivity on listening ability. As a result, the model of the effect of metacognitive awareness on listening ability through self-efficacy as a tested mediator has good criteria or meets the goodness of fit index to be used as a reference to form a similar model.

By considering the current research results, a more empirical discussion is needed to investigate the research objectives in more depth. Moreover, it is necessary to do other models to determine the shape of the possibilities of metacognitive sensitivity and self-efficacy variables in influencing students' listening ability. Also, it is indispensable to carry out similar research but in a different context. This research takes place in a micro-scale context, namely in one of the state Islamic madrasas, so it is not strong enough to be generalized in other broader contexts.

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