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Validation and Reliability of Self-Efficacy English Learning of Health Vocational Students with Jigsaw Learning Strategy

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Abstract

The purpose of this study was to put to the test a self-efficacy survey of four language skills (listening, speaking, writing, and reading) using the Jigsaw Learning Strategy. This study was a descriptive qualitative study in which 20 question items about self-efficacy and four language skills in English mastery for health vocational students are tested. This qualitative study was carried out in two classrooms with 39 health vocational students each from January 2021 to August 2022. Two classrooms were set up for the lecture group, one for Jigsaw and one for non-Jigsaw. Self-efficacy questionnaires were used to gather information. In the learning group, there were fourteen sessions totaling two hours, during which each class learned the same practice and comprehension material. Four language skills were worked on by the students. The questionnaire data was analyzed by the product moment to determine validity, and all were found to be valid with results greater than the value of the r table and less than 0.025. The reliability test results on questionnaire data revealed that the data were reliable or consistent. The Keiser-Meyers-Oklin Self-Efficacy Measure in the group of questions for all questionnaire items could be considered appropriate. The Measure of Sampling Adequacy results were also used to determine whether the self-efficacy variable was large enough for further analysis. The communality value was greater than 0.03, indicating a positive relationship between variables. Descriptive analysis, jigsaw classes respond better to self-efficacy surveys than non-jigsaw classes, implying increased self-confidence in the English learning process.

Keywords: Jigsaw Learning Strategy, Self-Efficacy English Learning, Validation and Reliability

INTRODUCTION

English has been growing in importance as a communication tool in higher education in the age of globalization and educational internationalization. The teaching of four language skills in colleges and the context of English as a foreign language are needed to elaborate with students' self-efficacy and cooperative learning strategies. In the Indonesian educational system, English is the first formally taught foreign language. Students must be able to master four language skills in order to learn English: reading, writing, listening, and speaking (Hayati, A., Basthoh, E., & Murtazaevna, K. D. 2021; Rokhmawan, T., et al., 2022). English learning process for English as a foreign language students, some psychological problems have been reduced by many learning strategies.

García-Pastor & Miller (2019) has proven that in psychological aspects of language learning, stuttering is not usually considered a severe disability. Little is known about how stuttering affects language learning in the context of English as a foreign language (Ramadhani, S. P., & Anggraeni, D. 2022; Harya, T. D. 2022). There are clear parallels between foreign language anxiety and stuttering, and many symptoms of stuttering have been observed more frequently and intensely in people who stutter. The goal of this study is to create, test, validate and rely self-efficacy of four language skills (listening, speaking, writing, and reading) questionnaires for Jigsaw learning strategy

In high education, college students must have cooperative skills for developing learning competence and cooperative work. Cooperative learning is commonly associated with two limitations. Community college faculty frequently express uncertainty about how to assess the teamwork skills demonstrated by their students during group work. Faculty members would like to be effective judges of what happens during a group project, but they are rarely close enough to witness the interaction process and, even when present, cannot tell how some team members' initiatives affect others. The provision of tasks that allow students to practice the teamwork skills they are expected to learn is a second limitation of cooperative learning (Li & Fang, 2017). Furthermore, students must learn and experiment with various learning methods. They can also provide feedback and suggestions for the development of new learning methods. Cooperative learning approaches and their impacts on achievement, as well as the circumstances in which they have these effects, have been the subject of controversy in our education society. Different groups of researchers investigating cooperative learning effects on achievement start with different assumptions and end up explaining cooperative learning effects on achievement in terms that are significantly unrelated or contradictory (Slavin, 2015). Cooperative learning refers to teaching methods in which students work in small groups to assist one another in learning academic material. Cooperative learning has been used and studied in some form or another in every major subject, with students ranging from pre-school to college, and in all types of schools. They have, however, been especially popular in the elementary grades, where greater flexibility in daily schedules makes cooperative work easier (Slavin, 2015).

According to some studies on the use of jigsaws, jigsaws have values that can assist teachers and students in the teaching and learning process. Jigsaw has been used to teach and learn in a variety of courses ranging from elementary school to university. Jigsaw has also been used in practical and theoretical courses. Adams (2013) has demonstrated that jigsaw is an extremely useful technique. Jigsaw implementation included all Holy Child College Practice Primary students and teachers. It is suggested that teachers avoid solely using the lecture method when teaching lessons at the lower levels (basic level) Education in Ghana. Jigsaw, according to Baken et al (2020), improves in-class learning and retention. Many biology laboratory courses are experiment-based and thus already involve active learning. For subjects that lend themselves to observational research, the Jigsaw can assist in engaging students in collaborative and active learning, resulting in improved performance. In physics class, Berger and Hänze (2015) discovers that the benefits of high-quality teaching are reduced for subtopics with high cognitive demand. Their study's practical implication is that jigsaw cooperative learning may be more effective for less difficult topics. The jigsaw cooperative methods may not foster feelings of competence if the tasks are too difficult. Chang and Benson (2020) reported in the Jigsaw teaching method that cultural differences impacted collaboration, which influenced the classroom community. Teachers can make better use of collaboration in the classroom to help students learn and connect with students from different cultures.

There have been numerous studies that use the jigsaw method of learning. In this study, the authors attempt to use a self-efficacy survey in both the jigsaw and non-jigsaw classes, followed by validation and reliability tests. The jigsaw method has long been used

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in a variety of settings and courses. The jigsaw method is one of some cooperative learning methods. The jigsaw is an effective strategy to teach complete language skills since it can conserve the teacher's efforts and allow the students to engage with one another and gain more understanding, information, and experience. The environment in class is more relaxed. According to constructivism viewpoints, the pupils have already demonstrated their capacity to acquire knowledge and are prepared to give that knowledge. Students can learn new things by cooperating with the friends in a team project. They are able to impart knowledge to others (Şahin, 2011). The Jigsaw method can assist students in engaging in collaborative and active learning, resulting in improved performance and a deeper understanding of the topics at hand. Students are encouraged to explore sample without much direction or incentive. Student demonstrate the method's applicability in a variety of non-experimental lessons (Baken et al., 2020). Jigsaw is a cooperative learning activity in which students communicate with one another to complete missing information and integrate it with other information. Students can actively participate in the learning process by using the Jigsaw technique. Jigsaw requires students to collaborate with their classmates to complete learning activities (Namaziandost et al., 2020).

In this study, we attempt to apply self-efficacy to the jigsaw technique of four language skills learning. The authors make an effort to gauge how confident they are in their ability to learn English. Although the motivational elements have not been looked at in this study. Pazoki & Alemi (2020) have also identified five motivating factors as the main drivers of students' interest in learning technical English: Ideal self, ought self, instrumental motivation, learning conditions, and learning experience. Self-efficacy belief is one of the affective characteristics of students that mediates their cognitive and psychomotor learning processes. Self-efficacy is the belief that people can control their behavior in order to achieve the goals they set for themselves (Darnon et al., 2012). People learn not only by performing responses but also by observing the effects of those responses. They form hypotheses about which responses are most appropriate in which situations by observing the various outcomes of their actions. This information is then used to guide future actions (Genç et al., 2016). A strong sense of efficacy in socially valued endeavors promotes human achievement and well-being. The lives of innovators and social reformers motivated by unwavering efficacy are not easy. Many people who achieve fame and recognition shape their lives by overcoming seemingly insurmountable obstacles (Honicke & Broadbent, 2016).

It is intended that self-efficacy can be used to quantify the scope of the survey results. The survey's findings should help with the application of self-efficacy to various techniques and circumstances. A person's attitudes, abilities, and cognitive skills comprise the self-system. The system has a large influence on how we perceive situations and respond to stressful situations. This self-system is based on an individual's belief in his or her ability to succeed in a given situation. Self-efficacy can influence everything from psychological states to behavior to motivation (Tilfarlioğlu, 2009). Peer-assisted instruction is becoming more popular in schools and the workplace. Many studies have found that students improve their problem-solving skills, are more willing to try new and difficult tasks, and have a stronger sense of belonging. Students learn by listening to others' perspectives, encouraging teammates, demonstrating empathy, and resolving conflicts (Strom & Strom, 2002). The tendency of people with high self- efficacy in a certain skill tend to see problems as challenges, rather than obstacles, when faced with one (Suryadi & Setiyawati, 2020).

Self-efficacy is a measure of one's ability to meet set goals. Self-efficacy has been used in numerous studies focusing on various aspects of psychology, including beliefs, motivations, and many others. In secondary school, Arslan (2013) approved self-efficacy beliefs. Social persuasion is the most effective method for increasing auditory students' self-efficacy beliefs. Mastery experience is the best option for students with kinesthetic

learning styles. Students with a visual learning style observe their peers in their surroundings, which leads to the vicarious experience factor. In a class on health psychology Broadbent (2016) demonstrates the importance of self-efficacy in predicting student performance. Online activity did not predict performance, implying that psychological factors are more important than online engagement in determining outcome. Ersanlı (2015) correlates students' academic self-efficacy and language learning motivation, revealing a low-level negative relationship between students' English language learning motivation and self-efficacy beliefs. It is critical to educate students and parents on the advantages of acquiring communicative competence in a foreign language.

It has been made a practical contribution to the validity and reliability of self-efficacy items in this study. Furthermore, in the future, it is hoped that more in-depth research will be carried out related to the study of factors that affect the level of self-efficacy. The self-efficacy theory as a prescriptive model for assisting and mass communication students in developing the skills and confidence required to learn and apply research methods (Maier & Curtin, 2004). The construct is initially composed of four subcomponents: linguistic self-efficacy, self-efficacy of self-regulation, specific rhetorical-discursive self-efficacy, and general rhetorical-discursive self-efficacy. Linguistic competence is defined as a person's ability to produce grammatical utterances in a given language. In this sense, linguistic competence is related to a speaker's implicit knowledge of his or her own language. Self-efficacy of self-regulation is defined as the belief in one's ability to apply cognitive resources appropriately in specific disciplinary contexts (attention or concentration, memory, creativity). Specific rhetorical-discursive self-efficacy refers to beliefs about one's ability to produce disciplinary genres that are appropriate for a disciplinary or professional context. The perception of one's own capacity to produce general academic texts, that is, texts that are transversal to university education, is related to general rhetorical-discursive self-efficacy (Meza & González, 2020)

METHOD

In this study, data on the results of the questionnaire test were collected by creating a list of questions that would be used to administer the questionnaire test. In this study, data on the results of the questionnaire test were collected by creating a list of questions that would be used to administer the questionnaire test.

This study used 20 questionnaire items to assess students' self-efficacy to learn listening, reading, writing, and speaking skills in Jigsaw class and non-Jigsaw classes. The researcher creates a list of questions or questionnaires based on existing theories. The questionnaire consists of an approval sheet, also known as informed consent, on the main sheet as evidence that someone is willing to be a respondent, then the respondent's identity, and the next sheet is a knowledge level questionnaire consisting of 20 questions that is used to measure the level of individual knowledge in measuring students' self-efficacy to learn listening, reading, writing, and speaking skills.

This qualitative research was conducted in two classrooms with 39 health vocational students each from January 2021 to August 2022. The lecture group was split into two classrooms, one for Jigsaw students and one for non-Jigsaw students. Data is gathered using self-efficacy questionnaires. During fourteen sessions totaling two hours in the learning group, each class received the same material in comprehension and practice. The students practiced four language skills.

In this study, Pearson's Product Moment analysis was used to test the instrument's validity. The research instrument's validity test can be declared valid if each question item on the questionnaire can be used to reveal something that the questionnaire will measure. If the value of r counting the result is greater than r of the table, the indicator in the questionnaire is said to be valid. If the validity value of each answer obtained when presenting the question list exceeds 0.316, the question item is said to be valid.

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A reliability test on a research instrument is a test used to determine whether or not a questionnaire used in the collection of research data is reliable. If a variable has an Alpha Cronbach value greater than 0.60, it can be concluded that the variable is reliable or consistent in measuring.

The 20 items of questionnaire reflect the students' English skill learning self-efficacy. "(5) totally agree," "(4) agree," "(3) neutrally agree," "(2) disagree," and "(1) totally disagree" are the item scales. The KMO, or Kaiser Meyer Olkin, measure of sampling adequacy is the value that visiting the number of samples is worth testing analytical factor determination. A high value of KMO between 0.5 and 1 indicates that the factor analysis was sufficient to test the accuracy of the analysis factor. KMO values between 0.5 and 1.0 indicate that factor analysis was sufficient; values less than 0.5 indicate that factor analysis was likely insufficient.(Shrestha, 2021),

The extraction method used in this study was principal component analysis (PCA). This extraction process is used to determine the number of factors that will be formed. The communalities values present in the extraction result table describe the variants of the variables that can be explained by the formed factors. Based on the value of communalities can be seen if the extraction value is obtained by each variable is above 0.5. This means that each factor can explain more than 50% of the variance of each variable. This shows that each variable has a very close relationship with the factor formed.(Pallant, 2016)

RESULT AND DISCUSSION

Table 1 Self-efficacy questionnaire validation test results for the experimental class

No.	Pearson	Sig. (2-
X01	0.692**	0.000
X02	0.594**	0.000
X03	0.650**	0.000
X04	0.628**	0.000
X05	0.685**	0.000
X06	0.518**	0.001
X07	0.475**	0.002
X08	0.573**	0.000
X09	0.725**	0.000
X10	0.836**	0.000
X11	0.796**	0.000
X12	0.741**	0.000
X13	0.832**	0.000
X14	0.359*	0.025
X15	0.504**	0.001
X16	0.571**	0.000
X17	0.394*	0.013
X18	0.650**	0.000
X19	0.575**	0.000
X20	0.624**	0.000

Table 2 Self-efficacy questionnaire validation test results for the control class

No.	Pearson	Sig. (2-tailed)
X01	0.722**	0.000
X02	0.448**	0.004
X03	0.779**	0.000
X04	0.579**	0.000
X05	0.792**	0.000
X06	0.753**	0.000
X07	0.496**	0.001
X08	0.803**	0.000
X09	0.766**	0.000
X10	0.495**	0.001
X11	0.630**	0.000
X12	0.735**	0.000
X13	0.711**	0.000
X14	0.330*	0.040
X15	0.317*	0.050
X16	0.381*	0.017
X17	0.478**	0.002
X18	0.389*	0.014
X19	0.638**	0.000
X20	0.737**	0.000

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A validity test is one that is used to determine the accuracy of a measuring instrument in measuring something that should be measured. Testing is carried out using the Product Moment correlation technique by correlating the score of each question item with the total score number of questions (Landau & Everitt, 2004). The validity test results on 20 items of the self-efficacy questionnaire show that such questions meet the criteria and are declared valid, with significance values less than 0.25 and calculated r values greater than r table (0.308) for both the jigsaw learning class group (N=39) and the non-jigsaw class group (N=39).

The reliability test results indicate that the questions on the English skills learning self-efficacy questionnaire can be relied on to assess self-efficacy. Cronbach's alpha is used to assess a questionnaire's reliability. It provides a straightforward method for determining whether or not a score is reliable. It is used with the assumption that multiple items are measuring the same underlying construct; there are a few questions, each asking a different question, but when combined, could be said to measure overall satisfaction. Internal consistency is measured by Cronbach's alpha (Shrestha, 2021). The Cronbach Alpha value for the self-efficacy questionnaire reliability test is 0.921. The Cronbach Alpha values for listening skills, speaking skills, writing skills, and reading skills in the question group are 0.789, 0.887, 0.889, and 0.893, respectively, in the reliability test. When N (78) r table 5% is used, it is known that the r table for such data is 0.219. Then, it can be concluded that r calculates > r table 5%, implying that the data are reliable or consistent. Taber (2018) examined how the application of Cronbach's alpha was presented in major science education journals over the course of a single year, as well as some illustrative examples of research where Cronbach's alpha is reported in studies in science education.

Factor analysis has become one of the most widely used multivariate statistical procedures in applied research across a wide range of domains (for example, psychology, education, sociology, management, and public health). The basic goal of factor analysis is to identify the number and nature of latent variables or factors that account for a set of observed measures. The Keiser-Meyers-Oklin (KMO) Measure of Sampling Adequacy compares the magnitude of the observed correlation coefficient with its partial correlation coefficient to determine sample adequacy.(Brown, 2006) The Keiser-Meyers-Oklin (KMO) Measure on self-efficacy in the group of questions for listening skills was 0.759 with a signification value of 0.000. The Keiser-Meyers-Oklin (KMO) Measure of self-efficacy in the group of questions about speaking skills was 0.883, with a significance value of 0.000. In the group of questions about writing skills, the Keiser-Meyers-Oklin (KMO) Measure of self-efficacy was 0.847, with a significance value of 0.000. The Keiser-Meyers-Oklin (KMO) Measure of Self-Efficacy in the group of questions about reading skills was 0.907, with a significance value of 0.000. For the factor analysis to be considered appropriate, Bartlett's test of sphericity must be significant ($p < .05$). The KMO index has a range of 0 to 1, with 0.6 being recommended as the minimum value for a good factor analysis.

Measure of Sampling Adequacy (MSA) measurements are used to determine whether the variables are sufficient for further analysis. On the diagonal part of the matrix, the MSA value for each variable can be seen in diagonal on anti-image correlation. If one or more initial variables have an MSA value of less than 0.5, the variable is removed from the analysis. Invalid variables must be removed from the analysis one by one, beginning with the variables with the lowest MSA value. The initial variables that meet the criteria are then tested again until an MSA value of 0.5 is obtained

These initial communalities represent the relationship between the variable and all other variables prior to rotation (i.e., the item's squared multiple correlation with all other items). A small sample size is more likely to distort results if many or most communalities are low (<.30). All of the initial communalities are greater than 0.30, which is a good sign. To obtain the percentage of data, the frequency of self-efficacy data for listening skills 4 questions groups for jigsaw classes and non-jigsaw classes was

calculated. "Can you understand what you know before reading a text from an audio talk?" in the jigsaw class, 69.2% of the students totally agreed on the data and in non-jigsaw class 2.6 % of the students totally agreed. "Can you comprehend new audiovisual materials?" obtained data indicating that approximately 92.3% of the students agreed 92.3 % in Jigsaw class and the students agreed 33.3% in non-Jigsaw class. "Can you understand a YouTube instructional video in English-speaking countries? the students agreed 59 % in Jigsaw class and the students agreed 33.3% in non-jigsaw class. "Can you understand English Scientific movies without Indonesia subtitles?" the students agreed 71% in Jigsaw class and the students agreed 38.5% in non-Jigsaw class.

Percentages are presented and calculated in the data on the frequency of self-efficacy in the group of speaking skill 5 questions. "Could you describe your major health study in English?" Students in Jigsaw class agreed 66.7% of the time, while students in non-Jigsaw class agreed 61.5% of the time. "Can you discuss some of the subjects in English in which you are interested with your classmates?" Students in Jigsaw class agreed totally 48.7% of the time, while students in non-Jigsaw class agreed 38.5% of the time. "Would you be able to present your laboratory project in English?" The students totally agreed 48,7%; they agreed 48,7% in Jigsaw class and 20,5% in non-jigsaw class. "Can you describe an English practice experience?" The students totally agreed 51.3% of the time; 33.3% agreed in Jigsaw class and 23.1% agreed in non-Jigsaw class. "Can you speak in English during the interview?" The students totally agreed 56.1% of the time; 35.9% agreed in Jigsaw class and 64.1% agreed in non-jigsaw class.

Four writing skills questions are also calculated and presented in percentages. "Are you capable of writing English compositions as assigned by your teachers?" The students agreed totally 64.1; 35.9% agreed in Jigsaw class, furthermore 64.1% agreed in non-jigsaw class. "Can you write the English application letter that your teachers assigned to you?" The students completely agreed 51.3% of the time; 43.6% in Jigsaw class, on the other hand 43.6% in non-Jigsaw class. "Are you able to write an English report on a laboratory project assigned to you by your teachers?" The students agreed totally 60.1% of the time; 30.8% agreed in Jigsaw class, otherwise 33.3% agreed in non-Jigsaw class"." Can you write English sentences to help you remember new words?" The students agreed totally 59% of the time; 33.3% agreed in Jigsaw class, afterward 56.4% agreed in non-Jigsaw class.

Seven questions about self-efficacy reading skills are asked, and the results are presented in percentages. "Can you guess the meaning of a word before looking it up?" In Jigsaw class, students totally agreed 89.7% of the time, while in non- Jigsaw class, students agreed 59% of the time. "Can you read a passage from a Handbook or manual book in English?" In Jigsaw class, 82.1 percent of students agreed totally, 46.2% agreed neutrally, and 46.2% disagreed. In non-Jigsaw class, 46.2% disagreed. "Can you guess the meaning of unknown words when reading English articles?" In Jigsaw class, 66.7% of students agreed totally and 43.7% agreed neutrally, and 48.7% disagreed in non-jigsaw class. "Can you consider what you know before writing a laboratory report or a composition text?" The students unanimously agreed. In the Jigsaw class, 76.9% agreed, while 64.1% disagreed; 30.8% disagreed in the non-jigsaw class. "Can you use an English dictionary or thesaurus if you don't speak English?" The students unanimously agreed. In the Jigsaw class, 87.2% the students agreed, while 43.6% agreed; 30.8% neutrally agreed in non-jigsaw class. "Are you able to complete homework/home assignments on your own when they include reading English texts?" The students unanimously agreed. In the Jigsaw class, 61.5% agreed, on the other hand 28.2% agreed; 43.6% neutrally agreed in non-jigsaw class. "Can you identify your weak points and work on improving your Reading learning?" In Jigsaw class, 69.2% of students agreed totally, otherwise 51.3% agreed, and 33.3% neutrally agreed in non-jigsaw class.

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DISCUSSION

The descriptive analysis in frequency results show that the jigsaw class has a higher level of confidence than the self-efficacy data in the non-jigsaw class. The receptive skill is listening comprehension. Listening is frequently associated with speaking. Reading can help build vocabulary, which will aid in later stages of listening comprehension. Writing skill is the most difficult of the four skills because it requires presenting ideas in a structured manner.(Aydoğan & Akbarov, 2014) The jigsaw method is a hands-on approach to improving students' subject comprehension. Students in jigsaw groups provided more correct answers to open-ended questions, indicating that they had the opportunity to contribute their knowledge on subjects such as English learning.(Doymus, 2008)

Many last studies, the studies have been conducted to provide evidence of self-efficacy in the form self-assessment, self-judgment, self-evaluation, and so on. The studies demonstrate the importance of self-efficacy as a tool for individual achievement. A large body of research has shown that self-efficacy plays an important role in achievement contexts, with a large body of research supporting the notion that it can influence the instigation, direction, persistence, and outcomes of achievement-related actions (Schunk & Pajares, 20002). Calibration, or the extent to which self-efficacy corresponds to performance, can influence students' motivation and achievement. Both teachers and students need to believe in their own abilities. Self-efficacy research encompasses assessment, developmental changes, cultural comparisons, and technological applications to learning (Schunk & DiBenedetto, 2015).

Self-efficacy can be defined as "a judgment of one's ability to achieve a certain level of performance" and is thought to "determine the goals people set for themselves, how much effort they expend, how long they persevere in the face of adversity, and their resilience to failures." As a research result, self-efficacy is considered critical to personal motivation (Pepper et al., 2018). Self-assessment interventions have a positive impact on students' strategies and self-efficacy. The magnitude of these positive effects varies depending on the type of Self-Regulated Learning measurement used, implying that future research should carefully consider the role of Self-Regulated Learning. Gender and specific components of self-assessment are moderating variables that influence the effects on student self-efficacy (Panadero et al., 2017). Information from four sources can be used to develop beliefs in one's own abilities: mastery experiences, vicarious experiences, verbal persuasion, and physiological and affective states. During cognitive processing, the weighting and integration of information from these sources appears to be individualistic and situational (O'Neill & Stephenson, 2011).

The self-efficacy theory could be used to assist students in developing the confidence required to conduct research. Students enrolled in a graduate research methods class reported feeling anxious. Students who participated in self-efficacy classes improved significantly in fundamental skills (Maier & Curtin, 2004). Students with higher self-efficacy beliefs used cognitive learning strategies significantly more often, resulting in higher posttest scores. This finding adds to previous research that suggests that learners who believe they are capable of performing a learning task are more cognitively engaged (Wu et al., 2012). The Self-Efficacy Strengths Scale The Strengths Self-Efficacy Scale was developed to assess individuals' perceived effectiveness in utilizing their personal strengths (Tsai et al., 2020). Supriyadi & Setiyawati (2020) found that peer counsellor training increased counseling self-efficacy in adolescent peer counsellors through expert judgment and empirical validity. Expert judgment resulted in satisfactory expert ratings, and empirical validity demonstrated that the training increased counseling self-efficacy in adolescent peer counsellors.

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The analysis revealed that the jigsaw class responded better to the self-efficacy survey than the non-jigsaw class, which can provide an overview of increasing self-confidence in the process of learning English. A case discussion using jigsaw method can promote efficient and effective cross-group collaboration. Cultural differences influenced collaboration, and thus the classroom community. Teachers can use collaboration in the classroom more effectively to help students learn and connect with students from different cultures (Chang & Benson, 2020).

Previous research has not included self-efficacy in the application of the jigsaw method in teaching and learning, particularly in mastering the four language skills. The findings of this study aided in the development of self-efficacy language skills surveys. This self-efficacy survey collects information on one's level of self-confidence and ability in the four English skills. The author hopes that this self-efficacy survey will be useful in assessing efficacy in four English language skills. The use of self-efficacy in the classroom using the jigsaw method demonstrates how the jigsaw method can increase students' efficacy in learning four English language skills.

Some of the study's limitations should be mentioned. First, the interaction has a moderate effect, which could be due to a small sample size; future research should replicate the results with a larger number of samples. It should also be noted that retesting self-efficacy following the time lag between interventions and returning to traditional settings can determine whether an increase in self-efficacy can be sustained over time. The current research focuses on four English language skills' self-efficacy. In the future, researchers should investigate whether this increase in self-efficacy has a positive impact on various learning methods

CONCLUSION

This study has tried to (1) provide validity questionnaire with product moments present Cronbach alpha reliability on Cronbach Alpha's coefficient, (3) present The Keiser-Meyers-Oklin (KMO) Measurement, (4) present Measure of Sampling Adequacy (MSA) measurements, (5) present the initial communalities to represent the relationship between the variable and all other variables, (6) present the frequency of self-efficacy data. It produces valid values on the self-efficacy questionnaire in the validity test using the Product Moment correlation technique. All self-efficacy questions are valid and can be used to demonstrate self-confidence in English learning of four language skills (listening, speaking, writing and reading). Listening skills, speaking skills, writing skills, and reading skills obtained reliable or consistent results on variable reliability tests because each of the reliability tests obtained a Cronbach's Alpha value of >0.219. The validity and reliability of the instrument were tested, and the results showed that research instruments on self-efficacy for listening skills, speaking skills, writing skills, and reading skills in the jigsaw class and non-jigsaw class have validity and reliability values that meet the criteria for measuring the level of self-efficacy in learning listening skills, speaking skills, writing skills, and reading skills. The data factorability was examined in order to calculate the value of Bartlett's test of sphericity and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy. All KMO values at self-efficacy were greater than 0.7, with a Bartlett's test of sphericity signification value of 0.000, indicating that factor analysis was used appropriately. All data from Measure of Sampling Adequacy (MSA) measurements show a value greater than 0.7. The Measure of Sampling Adequacy (MSA) is used to determine whether the self-efficacy variable is large enough for further analysis and use. The number of variances of a variable that can be explained by existing factors is what initial communities are all about. The analysis results show that the communality value is greater than 0.03 which indicates a positive relationship between variables. The results of this study's descriptive analysis in frequency revealed that a large number of jigsaw class data responded to "totally agree" (range: 5.1%-87.2%), "agree" (range:

10.3%-92.3%), and "neutrally agree" (range: 2.6%-7.7%) with Mean >4 and Median 4-5. In contrast, the non-jigsaw class responded to the self-efficacy survey with "totally agree" (range: 2.6%), "agree" (range: 7.7%-66.7%), "neutrally agree" (range:12.8%-64.1%), and "disagree" (range: 7.7%-48.6%).

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AUTHOR CONTRIBUTION STATEMENT [44]

This research was conducted by the researchers, started from the construction of the literature review, the data collection and the data analysis process, and the research conclusion.

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