

2024

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Recommended Citation

Ifdil, Ifdil; Bariyyah, Khairul; Dewi, Ari Khusuma; and Rangka, Itsar Bolo (2024) "The College Academic Self-Efficacy Scale (CASES); An Indonesian Validation to Measure the Self-Efficacy of Students," *Jurnal Kajian Bimbingan dan Konseling*: Vol. 4: No. 4, Article 11.

Available at: <https://citeus.um.ac.id/jkbk/vol4/iss4/11>

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The College Academic Self-Efficacy Scale (CASES); An Indonesian Validation to Measure the Self-Efficacy of Students

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Article received: March 3rd 2019; revised: August 18th 2019; accepted: August 19th 2019

Abstract: This study examines the inventory properties of the Indonesian version of The College Academic Self-Efficacy Scale (CASES) which is originally Western, and was developed by Owen, S. V., & Froman, R. D. in 1988 to determine the level of student self-efficacy. The multi-stage random sampling method was used with 342 students as participants in Indonesia. Furthermore, the validity was analyzed using Cronbach's alpha item analysis that shows the coefficient of $\alpha > .3$, and the data showed that 33 items of Indonesian CASES were valid. In addition, as regards reliability, Cronbach's alpha was also used for the analysis, and the result shows that reliability coefficient of the Indonesian version of CASES was .931. Furthermore, it was concluded that the validity of CASES was satisfying to measure students' self-efficacy, and the construct of Indonesian CASES can be helpful and applicable in understanding student self-efficacy and ready to be used in subsequent researches.

Keywords: self-efficacy scale; self-efficacy; student; Indonesian CASES

Abstrak: Penelitian ini bertujuan untuk melakukan validasi *CASES* versi bahasa Indonesia yang awalnya berasal dari barat, inventori ini dikembangkan oleh Owen, S. V., & Froman, R. D. pada tahun 1988 untuk mengukur tingkat efikasi diri siswa. Metode pengambilan sampel yang digunakan adalah *multi-stage random sampling* dengan 342 siswa di Indonesia. Selanjutnya, validitas dianalisis menggunakan analisis butir Alpha Cronbach yang menunjukkan koefisien $\alpha > 0,3$, dan data menunjukkan bahwa 33 butir *CASES* versi Bahasa Indonesia valid. Selain itu, dalam analisis reliabilitas, Alpha Cronbach juga digunakan, dan hasilnya menunjukkan bahwa koefisien reliabilitas *CASES* versi Bahasa Indonesia adalah 0,931. Dengan demikian, disimpulkan bahwa *CASES* valid dan reliabel dalam mengukur efikasi diri siswa, dan konstruk *CASES* versi Bahasa Indonesia dapat diaplikasikan dalam mengukur efikasi diri siswa serta siap digunakan dalam penelitian selanjutnya.

Kata kunci: skala efikasi diri; efikasi diri; murid; *CASES* versi bahasa Indonesia

INTRODUCTION

Self-efficacy is the belief in one's ability to organize and carry out a series of actions that are considered essential in achieving the desired result, and it was introduced by Albert Bandura in 1977 in social learning theory (Brouwer et al., 2010). It is a powerful factor in determining how a person will act, think and react when faced with unpleasant situations (Alavi, Zargham-Boroujeni, Yousefy, & Bahrami, 2017; Bandura, 1995; Downes, Kristof-Brown, Judge, & Darnold, 2017).

Self-efficacy is essential in developing student personality to facilitate their studying process (Fan & Williams, 2010; Roddenberry & Renk, 2010; Roush, 2016; Van Dinther, Dochy, & Segers, 2011). However, in terms of academic functioning, self-efficacy level refers to variations across different levels of tasks, such as increasing the complexity of math problems; generality pertains to the transfer of self-efficacy beliefs across activities, such as different academic subject matters. The strength of perceived efficacy is measured by degrees of certainty that one can perform given tasks (Brouwer et al., 2010). Students who have high self-efficacy tend to make persistent efforts, diligence, tenacity, and perseverance (Datu, Yuen, & Chen, 2017; Lightsey Jr, Maxwell, Nash, Rarey, & McKinney, 2011; Raqshin & Nirjar, 2012). Also, they usually target high scores, have a greater curiosity to learn, actively ask questions in class, love to read and review literature, not easily discouraged, and consider failure to be a positive motivation (Al Mutir, 2015; Shikalepoh, 2016). Meanwhile, students with lower self-efficacy are much more likely to feel shy and hesitant about their capabilities, consider complex issues to be a threat, silent, hopeless, more stressed, (Bariyyah, 2015), and depressed (Bandura, 1995).

In addition, students with higher self-efficacy are more capable of adapting to the challenges and pressures of life (Axford, 2007). Furthermore, research conducted in the military community with 700 youths (19–22 years) as participants found that self-efficacy significantly contributes to the resilience of the participants (Roberts, 2007).

To increase students' self-efficacy, professional counselors need data to identify students' initial self-efficacy level, which also serves as a preliminary study of those students (Gordon & Steele, 2015; Jiang, 2016; Kesici, 2015) using self-efficacy scale. For this reason, the scale of self-efficacy is one of the instruments needed by counselors for guidance and counseling services (Mullen et al., 2015; Sharf, 2016). Also, the information gathered from the results can be used in providing personal and social assistance (Chan & Thomas, 2015). When counselors have a good personal understanding of the students, they will be capable of providing adequate support.

Measurement is based on a good conceptual analysis of the domain performance (Kamkari et al., 2013). However, the scope of assessment arises when self-efficacy is measured by a component function to perform various capabilities rather than for its integrated execution (Bandura, 1997). On the other hand, the counselors' main problem is the difficulty in getting instruments for collecting student data (Gordon & Steele, 2015). This is due to the lack of understanding and the unavailability of appropriate instruments. Interviews with several counselors revealed that they have not been optimally implementing social and personal guidance to enhance this development in students due to the unavailability of instruments. These instruments are needed to identify the initial level of a student's self-efficacy before the counselors determine the follow-up services for development (Mullen et al., 2015) and the basis of training programs.

Unavailability of self-efficacy inventory in Indonesia has made researchers interested in adapting the self-efficacy scale developed by Owen & Froman (Owen & Froman, 1988) called The College Academic Self-Efficacy Scale (CASES). CASES Inventory is based on the great, general and strong components of self-efficacy by Bandura (Bandura, 1997). However, the adaptation of CASES from English into Indonesian was carried out in several stages to avoid being bias due to differences in language and culture (Canino & Bravo, 1999; Jones et al., 2001). This study discusses the CASES adaptation into Indonesian, besides the Indonesian CASES is expected to be employed as an alternative instrument for future researches.

METHOD

In the adaptation process, the CASES needs to go through the procedure of translation (Hambleton et al., 2004; Maxwell, 1996; Schweizer & DiStefano, 2016). This process is carried out to maintain the validity of the CASES, wherein the "meaning" of each item must be understood in the same context as in the original language (Geisinger, 1994; Hambleton et al., 2004). There are several translation procedures that can be used by researchers. However, it is necessary for this procedure to be carried out objectively, to avoid cultural biases (Canino & Bravo, 1999; Jones et al., 2001). The adaptation procedure implemented by the researchers was a combination of several methods (Lenz et al., 2017). The steps for the adaptation procedure were researchers' translation, committee approach, and back-translation. The

translated version of CASES was then tested on 342 students spread all across Indonesia. A sampling test was conducted using multi-stage random sampling. Obtained data were then analyzed to test the CASES' validity and reliability. The validity test was conducted using Alpha Cronbach item analysis (Csikszentmihalyi & Larson, 2014; Popović, 2011) to determine the contribution (correlation) of each item to the total score by criteria $\alpha \geq .3$ (Cronbach, 1951). This analysis is considered good to test the construct validity of an instrument if its items are "legitimate" or valid. In addition, the reliability test was performed by determining the CASES' internal consistency. It involved reanalyzing the items, without the eliminated items. The analysis was conducted twice with the same method, which did not include items with a coefficient below 3.

RESULTS

There were three phases of translation in this study. Firstly, each CASES' item was translated from English (the original language) to Indonesian by the researchers. This was carried out multiple times in order to provide various translations and to avoid being bias due to a lack of understanding of the language.

After that, three bilingual people were selected by the authors. These people have an adequate understanding of both languages. They were asked to give the most appropriate translation of each item and to provide feedback for the draft translation if they thought it was necessary. This procedure is a modification of the approach suggested by the Brislin committee (Brislin, 1980). According to Brislin, a committee approach requires a group of translators to translate an instrument from the original into the target language. The error from a committee member is likely to be known and can be fixed by others. This method is expected to attain an acceptable level of objectivity.

The results of the translation discussed by the translators and also the researchers who have performed an adaptation of the instrument and have expertise in the preparation of research instruments. This method is referred to as the second committee approach which aims to objective and optimal instrument adaptation. The results of the first and second committee approach are the second draft of the Indonesian version CASES.

The next stage is the second draft test. According to Prieto (1992), testing the instruments that have been translated into the target language is an important step to produce an accurate translation. The research sample in this study was 342 students spread all across Indonesia. They were asked to complete a second draft instrument in the form of a questionnaire. Additionally, interviews were conducted to obtain feedback on confusing items on the instrument and to determine whether respondents had similar understanding with the researchers. The result of these trials was analyzed using an analysis of the item validity and reliability.

For the validity analysis, the Indonesian version of CASES was tested by analyzing the precision degree of its ability to measure construct/indicators/variables. To know the instrument's validity, the researchers drew a comparison between score items and the total score. In other words, this was defined by the difference of each item's score to the total score. This analysis is effectively used in measuring the validity and reliability of the Likert scale. The obtained results are presented in table 1.

The results in table 1 show that the coefficient $\alpha > .3$ means all items were valid (Cronbach, 1951). This study used the internal reliability method to determine the instrument's reliability. Internal reliability can be determined by analyzing data from one testing. Table 2. shows the Indonesian version CASES' reliability using the formula of Alpha Cronbach.

The result of instrument analysis shows that all items are reliable with coefficient $\alpha .931$. The alpha formula was used because it can be applied to get the non-dichotomy score and only requires single-trial administration (Azwar, 2014).

Table 1. The Result of Validity Analysis

Item-Total	Corrected Correlation
1. Taking well-organized notes during a lecture	.334465971
2. Participating in a class discussion	.568831846
3. Answering a question in a large class	.595511207
4. Answering a question in a small class	.607536769
5. Taking “objective” tests (multiple-choice, T-F, matching)	.547320281
6. Taking essay tests	.605391466
7. Writing a high-quality term paper	.542465585
8. Listening carefully during a lecture on a difficult topic	.45909168
9. Tutoring another student	.551865698
10. Explaining a concept to another student	.584286889
11. Asking a professor in class to review a concept you don’t understand	.506403286
12. Earning good marks in most courses	.569749137
13. Studying enough to understand the content thoroughly	.613398857
14. Running for student government office	.467130187
15. Participating in extracurricular events (sports, clubs)	.440804021
16. Making professors respect you	.604518856
17. Attending class regularly	.370707104
18. Attending class consistently in a dull course	.370945014
19. Making a professor think you’re paying attention in class	.498162016
20. Understanding most ideas you read in your texts	.594945253
21. Understanding most ideas presented in class	.654702216
22. Performing simple math computations	.355512959
23. Using a computer	.422797728
24. Mastering most content in a math course	.547199858
25. Talking to a professor privately to get to know him or her	.539467257
26. Relating course content to material in other courses	.669507477
27. Challenging a professor’s opinion in class	.495178096
28. Applying lecture content to a laboratory session	.515047917
29. Making good use of the library	.568842655
30. Getting good grades	.458992182
31. Spreading out studying instead of cramming	.512886873
32. Understanding difficult passages in textbooks	.589809113
33. Mastering content in a course you’re not interested in	.516637513

Table 2. The Result of Reliability Analysis

Reliability Statistics	
Cronbach's Alpha	N of Items
.931	33

DISCUSSION

The results of the Indonesian CASES reliability test indicate that it comprises of 33 items, with a reliability coefficient of 0.931. It can thereby be concluded that the Indonesian CASES developed a high coefficient, indicating that the 33 items are valid and reliable. Validity is the extent to which an instrument

measures what it is intended to measure (Clifford et al., 2012). In addition, reliability is an essential characteristic of any good test: for it to be valid at all, a test must be reliable as a measuring instrument (Susanto, 2016). On the other words, the instrument can then be used in subsequent researches.

The next stage is to carry out the back translation for the third draft, from Indonesian into English. According to Brislin (1980), translation is the stage where researchers ask someone who is considered bilingual to translate the instruments from the target language (Indonesian) to the original language (English). This results in questionnaire translation CASES in English.

The final stage is to compare the quality of the original instrument in English to the translation results, which is also in English. Both of these instruments were compared using the language for each item. To avoid bias that might arise and get the aimed results, the researchers asked independent third parties to conduct the examination. By being independent, that means they had no idea about the previous stages. Based on the translation procedure from the fourth stage, the third draft instrument CASES adaptation in Indonesian was sufficiently accurate and reliable to be used as an instrument in this study.

CONCLUSION

The inventory of CASES translated from English (the original language of the instrument) into the Indonesian language (Bahasa), and then translated back into English to produce an accurate translation of the instrument. The results from validity and reliability analysis tested to 342 students spread across Indonesia shows that the items on Indonesian CASES, developed after an analysis, are valid and highly reliable. In addition, the construct validity of the CASES tested also showed 33 items are valid, and for this reason, this instrument can be used to collect data in a similar study in the future. It is concluded that the construct of the Indonesian CASES can help identify the self-efficacy of students in Indonesia.

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