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

Ifdil Ifdil*, Khairul Bariyyah1, Ari Khusuma Dewi2, Itsar Bolo Rangka4
1Department of Guidance and Counseling, Faculty of Education, Universitas Negeri Padang, Prof. Dr. Hamka Street, Padang, Sumatera Barat, Indonesia 25131
2Department of Guidance and Counseling, Faculty of Education, Universitas Kanjuruhan Malang, S. Supriadi Street No. 48, Malang, East Java, Indonesia 65148
3Department of Guidance and Counseling, Faculty of Education, Universitas Negeri Surabaya, Rektorat Unesa Street No. 229, Surabaya, East Java, Indonesia 60213
4Department of Guidance and Counseling, Faculty of Education and Social Science, Universitas Indraprasta PGRI, Nangka Raya Street No. 58 C, South Jakarta, Special Capital Region of Jakarta, Indonesia 12530
*corresponding author; e-mail: ifdil@konselor.org

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 α > .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

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; Schweitzer & 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).
**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

### Table 1. The Result of Validity Analysis

| Item-Total                                      | Corrected Correlation |
|------------------------------------------------|-----------------------|
| 1. Taking well-organized notes during a lecture| 0.33465971            |
| 2. Participating in a class discussion         | 0.568831846           |
| 3. Answering a question in a large class       | 0.595511207           |
| 4. Answering a question in a small class       | 0.607536769           |
| 5. Taking “objective” tests (multiple-choice, T-F, matching) | 0.547320281 |
| 6. Taking essay tests                          | 0.605391466           |
| 7. Writing a high-quality term paper           | 0.542465585           |
| 8. Listening carefully during a lecture on a difficult topic | 0.45909168  |
| 9. Tutoring another student                    | 0.551865698           |
| 10. Explaining a concept to another student    | 0.584286889           |
| 11. Asking a professor in class to review a concept you don’t understand | 0.506403286 |
| 12. Earning good marks in most courses         | 0.569749137           |
| 13. Studying enough to understand the content thoroughly | 0.613398857 |
| 14. Running for student government office      | 0.467130187           |
| 15. Participating in extracurricular events (sports, clubs) | 0.440804021 |
| 16. Making professors respect you              | 0.604518856           |
| 17. Attending class regularly                  | 0.370707104           |
| 18. Attending class consistently in a dull course | 0.370945014     |
| 19. Making a professor think you’re paying attention in class | 0.498162016 |
| 20. Understanding most ideas you read in your texts | 0.594945253 |
| 21. Understanding most ideas presented in class | 0.654702216 |
| 22. Performing simple math computations        | 0.355512959           |
| 23. Using a computer                           | 0.422797728           |
| 24. Mastering most content in a math course    | 0.547199858           |
| 25. Talking to a professor privately to get to know him or her| 0.539467257 |
| 26. Relating course content to material in other courses | 0.669507477 |
| 27. Challenging a professor’s opinion in class | 0.495178096          |
| 28. Applying lecture content to a laboratory session | 0.515047917 |
| 29. Making good use of the library            | 0.568842655           |
| 30. Getting good grades                        | 0.458992182           |
| 31. Spreading out studying instead of cramming | 0.512886873           |
| 32. Understanding difficult passages in textbooks | 0.589809113         |
| 33. Mastering content in a course you’re not interested in | 0.516637513 |

### Table 2. The Result of Reliability Analysis

| Reliability Statistics | Cronbach’s Alpha | N of Items |
|------------------------|------------------|------------|
| Cronbach’s Alpha       | .931             | 33         |

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.

REFERENCES

Al Mutir, A. (2015). Student Choice in Continuing to Study high School Science.
Alavi, A., Zargham-Boroujeni, A., Yousefy, A., & Bahrami, M. (2017). Altruism, The Values Dimension of Caring Self-Efficacy Concept in Iranian Pediatric Nurses. Journal of Education and Health Promotion, 6.
Axford, K. M. (2007). Attachment, Affect Regulation, and Resilience in Undergraduate Students. Walden University.
Azwar, S. (2014). Penyusunan Skala Psikologi Edisi II. Yogyakarta: Pustaka Pelajar.
Bandura, A. (1995). Self-Efficacy in Changing Societies. Cambridge University Press.
Bandura, A. (1997). Self-Efficacy: The Exercise of Control. Macmillan.
Bariyyah, K. (2015). The Effectiveness of Peer-Helping to Reduce Academic-Stress of Students. Addictive Disorders & Their Treatment, 14(4), 176–181.
Brislin, R. W. (1980). Translation and Content Analysis of Oral and Written Materials. Methodology, 389–444.
Brouwer, S., Reneman, M. F., Bültmann, U., Van der Klink, J. J. L., & Groothoff, J. W. (2010). A Prospective Study of Return to Work Across Health Conditions: Perceived Work Attitude, Self-Efficacy and Perceived Social Support. Journal of Occupational Rehabilitation, 20(1), 104–112.
Canino, G., & Bravo, M. (1999). The Translation and Adaptation of Diagnostic Instruments for Cross-Cultural Use. In Shaffer, D., Lucas, C. P., & Richters, J. E. (Eds.), Diagnostic Assessment in Child and Adolescent Psychopathology (pp. 285–298). New York: Guilford Press.
Chan, F., & Thomas, K. R. (2015). Counseling Theories and Techniques for Rehabilitation and Mental Health Professionals. Springer Publishing Company.
Clifford, M., Menon, R., Gangi, T., Condon, C., & Hornung, K. (2012). Measuring School Climate for Gauging Principal Performance: A Review of the Validity and Reliability of Publicly Accessible Measures. A Quality School Leadership Issue Brief. American Institutes for Research.
Cronbach, L. J. (1951). Coefficient Alpha and The Internal Structure of Tests. Psychometrika, 16(3), 297–334. https://doi.org/10.1007/BF02310555
Csikszentmihalyi, M., & Larson, R. (2014). Validity and Reliability of The Experience-Sampling Method. In Flow and The Foundations of Positive Psychology (pp. 35–54). Springer.
Datu, J. A. D., Yuen, M., & Chen, G. (2017). Grit and Determination: A Review of Literature with Implications for Theory and Research. *Journal of Psychologists and Counsellors in Schools, 27*(2), 168–176.

Downes, P. E., Kristof-Brown, A. L., Judge, T. A., & Darnold, T. C. (2017). Motivational Mechanisms of Self-Concordance Theory: Goal-Specific Efficacy and Person–Organization Fit. *Journal of Business and Psychology, 32*(2), 197–215.

Fan, W., & Williams, C. M. (2010). The Effects of Parental Involvement on Students’ Academic Self-Efficacy, Engagement and Intrinsic Motivation. *Educational Psychology, 30*(1), 53–74.

Geisinger, K. F. (1994). Cross-Cultural Normative Assessment: Translation and Adaptation Issues Influencing the Normative Interpretation of Assessment Instruments. *Psychological Assessment, 6*(4), 304.

Gordon, V. N., & Steele, G. E. (2015). *The Undecided College Student: An Academic and Career Advising Challenge*. Charles C Thomas Publisher.

Hambleton, R. K., Merenda, P. F., & Spielberger, C. D. (2004). *Adapting Educational and Psychological Tests for Cross-Cultural Assessment*. Psychology Press.

Jiang, Z. (2016). Emotional Intelligence and Career Decision-Making Self-Efficacy: Mediating Roles of Goal Commitment and Professional Commitment. *Journal of Employment Counseling, 53*(1), 30–47.

Jones, P. S., Lee, J. W., Phillips, L. R., Zhang, X. E., & Jaceldo, K. B. (2001). An Adaptation of Brislin’s Translation Model for Cross-Cultural Research. *Nursing Research, 50*(5), 300–304.

Kamkari, K., Tojari, K., & Kamkari, K. (2013). Standardization of Exercise Self-Efficacy Scale. *Advances in Environmental Biology*, 3969–3981.

Kesici, S. (2015). Psychological Needs as Predictors of Human Values in High School Students. *The Anthropologist, 19*(2), 499–506.

Lenz, A. S., Gómez Soler, I., Dell’ Aquilla, J., & Uribe, P. M. (2017). Translation and Cross-Cultural Adaptation of Assessments For Use in Counseling Research. *Measurement and Evaluation in Counseling and Development, 50*(4), 224–231.

Lightsey Jr, O. R., Maxwell, D. A., Nash, T. M., Rarey, E. B., & McKinney, V. A. (2011). Self-Control and Self-Efficacy for Affect Regulation as Moderators of The Negative Affect–Life Satisfaction Relationship. *Journal of Cognitive Psychotherapy, 25*(2), 142–154.

Maxwell, B. (1996). Translation and Cultural Adaptation of The Survey Instruments. *Third International Mathematics and Science Study (TIMSS) Technical Report, 1*, 159–169.

Mullen, P. R., Uwamahoro, O., Blount, A. W., & Lambie, G. W. (2015). Development of Counseling Students’ Self-Efficacy during Their Preparation Program. *The Professional Counselor, 5*, 175–184. doi:10.15241/prm.5.1.175

Owen, S. V., & Froman, R. D. (1988). *Development of A College Academic Self-Efficacy Scale*.

Popović, V. B. (2011). Weiner IB & Greene RL: *Handbook of Personality Assessment*, John Wiley & Sons, Hoboken, New Jersey, 2008. *Psihijatrija Danas, 43*(1), 111–114.

Prieto, A. J. (1992). A Method for Translation of Instruments to Other Languages. *Adult Education Quarterly, 43*(1), 1–14.

Raqshin, S., & Nirjar, A. (2012). Accruing Individual Potential for Creativity and Innovation in Biotechnology Firms. *International Journal of Innovation and Learning, 11*(2), 162–181.

Roberts, K. A. (2007). Self-Efficacy, self-Concept, and Social Competence as Resources Supporting Resilience and Psychological Well-Being in Young Adults Reared Within the Military Community. *Dissertation Abstracts International, 68*(2-B), 1319.

Roddenberry, A., & Renk, K. (2010). Locus of Control and Self-Efficacy: Potential Mediators of Stress, Illness, and Utilization of Health Services in College Students. *Child Psychiatry & Human Development, 41*(4), 353–370.

Roush, C. M. (2016). *The Effects of Clickers on High School Students’ Self-Efficacy and Integrative Motivation to Learn and Acquire A Second Language*.

Schweizer, K., & DiStefano, C. (2016). *Principles and Methods of Test Construction: Standards and Recent Advances (Vol. 3)*. Hogrefe Publishing.

Sharf, R. S. (2016). *Applying Career Development Theory to Counseling*. Nelson Education.

Shikalepoh, P. P. (2016). *Learners’ Self-Efficacy Beliefs in Reading Comprehension in English Second Additional Language In A Namibian Rural School*. (Doctoral Dissertation) North-West University (South Africa), Potchefstroom Campus.
Susanto, H. (2016). The Effect of Crossword Puzzle on The Students’ Vocabulary Mastery at Second Grade of Muhammadiyah Junior High School of Palangka Raya. (Doctoral Dissertation) IAIN Palangka Raya.

Van Dinther, M., Dochy, F., & Segers, M. (2011). Factors Affecting Students’ Self-Efficacy in Higher Education. Educational Research Review, 6(2), 95–108.