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Research Self-Efficacy: Bachelor student & the thesis

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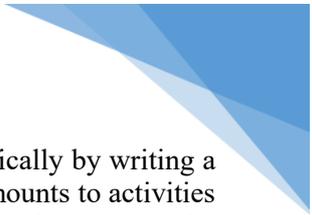
Research Self-Efficacy (RSE) is associated with one's confidence with the capability to perform research-related tasks. High RSE students recognize their weaknesses and strengths in performing research. Therefore, they are more interested and motivated in doing research. Indonesian university students have to conduct an academic research in order to graduate with a Bachelor degree, specifically by writing a bachelor thesis. This study was the first step to explore the RSE of Indonesian students. In this study, we used the RSE scale that has been translated into the Indonesian language. Participants were 50 UKRIDA students who were doing their bachelor thesis and recruited using non-probability, purposive sampling. Our results showed that most of our participants have a high level of RSE ($X = 168.48$). Further details are discussed.

Keywords: *Research Self-Efficacy, bachelor student, bachelor thesis, Jakarta*

1. Introduction

Bandura's self-efficacy concept emphasizes one's belief in her ability to organize and perform tasks (Bandura, 1994, 1997; Chemers, Hu, & Garcia, 2001; Hsieh, Sullivan, & Guerra, 2007; Zimmerman, 2000). This concept can also be applied in a research context. Bieschke, Bishop, & Garcia (1993) explains that self-efficacy in conducting a research can be measured specifically using Research Self-Efficacy (RSE), which is the level of individual confidence on the ability to complete a research-related tasks, including problem identification, survey of literature, methodology, conducting research processes, results and analysis, writing, and publishing the research (Büyükoztürk, Atalay, Sozgun, & Kebapçı, 2011; Welzer-Ward, Baltes, Hoffman-Kipp, & Lynn, 2010). Specifically, (Bieschke et al., 1993) found four factors of RSE, which were a) conceptualization: the ability to formulate ideas about the particular study; b) implementation: the behavioral tasks required to perform and complete research tasks; c) early tasks: individual efforts to find information or resources related to the research topic, as well as thinking about appropriate principles in research; d) presenting the results: individual tasks to prepare and to present the result, both in writing and in oral.

Having a high RSE is associated with the success of students in conducting research (Forester, Kahn, & Hesson-McInnis, 2004). Concretely, students would have higher RSE's if they meet all of four RSE factors. Therefore, to have a high RSE score, students need to have a high level of research skills (Nordin & Mohamed, 2013). RSE can help students to recognize their weaknesses and strengths in conducting research (Rezaei & Miandashti, 2013). Students with a high RSE are confident in their ability to complete research tasks, such as find the relevant literature, identify research questions, be able to formulate problems, select quantitative or qualitative research designs, select appropriate data analysis techniques, and be confident of writing literature reviews, research proposals, and research articles (Van Der Westhuizen, 2014). Studies showed that students who attended trainings on research design, statistics, and sampling methods had higher RSE levels (Bishop, Bieschke, & Garcia, 1993; Salehi, Kareshki, & Reza Ahanchian, 2013; Van Der Westhuizen, 2014). In addition, a high score of RSE makes students more interested and motivated to conduct research (Forester et al., 2004; Overall, Deane, & Peterson, 2011).



University students in Indonesia are required to make an academic research, specifically by writing a bachelor thesis in order to graduate with a Bachelor degree. Writing a bachelor thesis amounts to activities of academic research, which include having critical thinking to point out the phenomenon, determining the research topic, doing a literature review, analyzing results, and writing a research paper. However, in spite of the growing number of RSE studies with students population in various countries (Ashrafi-Rizi, Najafi, Kazempour, & Taheri, 2015; Boswell, 2014; Salehi et al., 2013; Van Der Westhuizen, 2014), RSE studies with Indonesian students were hardly found, especially with university students who were doing their bachelor thesis. Therefore, the authors aimed to explore the RSE of Indonesian students. As the first step, we started by conducting research to describe the RSE of university students who were doing their bachelor thesis at the Krida Wacana Christian University (UKRIDA) - Jakarta.

2. Methods

2.1. Settings and data collections

Participants were UKRIDA students who were doing their bachelor thesis. They were recruited using non-probability, purposive sampling. Students with these characteristics were eligible for this study: (1) UKRIDA students, from the Faculty of Economics, Faculty of Engineering and Computer Science, and the Faculty of Psychology; (2) they were writing their undergraduate thesis at the period of data collection; and (3) they have passed statistics courses and research methods courses.

This study used quantitative method using the RSE scale that has been translated into Indonesian language. The scale was obtained through Julia B. Smith (a researcher from Oakland University, Rochester). This RSE scale consists of 49 items statement and was designed to measure self-confidence about one's ability to succeed in conducting various research-related activities. This scale was based on the four RSE factors reported in Bieschke, Bishop, and Garcia (1993) described above. The conceptualization factor consists of 16 statements, the implementation factor consists of 20 statements, the early tasks factor consists of five statements, and presenting the results factor consists of eight statements. The statements in the RSE scale were arranged using the Likert Scale, which consists of five options. The answer options provided were Very Sure (VS), Sure (S), Doubtful (D), Unsure (U), and Very unsure (VU).

Data were collected face-to-face and using the internet. For the latter, a link of google form was sent via UKRIDA's official mailing list and online media, such as Facebook, LINE, Whatsapp, and Blackberry Messenger (BBM). This was done because most of the university students who were doing their bachelor thesis did not come to the university often. Some students wrote their thesis at home and came to the university, only for consulting with the supervisor. Of the 50 questionnaires, only 19 were filled directly on campus, while 31 questionnaires were collected through google forms. Thus, the total questionnaires filled were 50.

2.2. Analysis

The RSE statements had inter-item reliability coefficients of 0.300 – 0.751, with four had coefficients lower than .300. Reliability test for RSE scale showed 0.953 Cronbach's Alpha coefficients. Based on these results, it can be said that the RSE scale was a reliable scale, with statements showing high responses consistency. Scores were grouped using an ordinal categorization level to describe the RSE level of UKRIDA's students who were doing their bachelor thesis. The categories used were Low RSE ($X < 105$); Medium RSE ($105 \leq X < 165$); and High RSE ($165 \leq X$).

3. Results

Participants were 50 students of Krida Wacana Christian University, Jakarta who were doing their bachelor thesis. The characteristics of the participants were divided into four subcategories, which were sex (men: 28 people, female: 22 people), faculty (Faculty of Economics: 10 people, Faculty of Engineering and Computer Science: 20 people, Faculty of Psychology: 20 people), time spent between starting the bachelor thesis until this study's data collection (1 - 6 months: 43 people, 7 - 12 months: 7 people), and proposal seminar (already did: 42 people, not yet: 8 people). Overall, the results showed that university students who were doing their bachelor thesis at UKRIDA have a high level of RSE ($X = 168.48$). To explore this finding further, we looked into the individual scores of the four factors of RSE and further grouped these scores as Low category ($X < (\mu - 1\sigma)$); Medium category ($(\mu - 1\sigma) \leq X < (\mu + 1\sigma)$); and High category ($(\mu + 1\sigma) \leq X$). The conceptualization factor was in the medium category ($X = 47.32$). The implementation factor was in the



high category ($X = 71.84$). The early tasks factor was in the high category ($X = 19.20$). Lastly, the presenting the results factor was in the high category ($X = 30.12$)

Independent-Samples T Test and One-Way Anova were performed to identify any differences of RSE on participant's demographic data. These tests indicated that there was no difference in RSE in sex demographic data (Sig = 0.191), time spent between starting the bachelor thesis until data collection (Sig = 0.052), and faculty (Sig = 0.129). The difference is only seen in the demographic data of proposal seminars comparing the students who have already passed the proposal seminars with the students who have not passed the proposal seminars yet (Sig = 0.015).

4. Discussion

The results of this study showed that overall, the RSE level of the Ukrida students who were doing their bachelor thesis were high. This showed that UKRIDA students had high confidence in doing their bachelor thesis tasks. This high RSE might be influenced by student's participation in statistical, research design, and research methodology courses (Forester et al., 2004; Salehi et al., 2013; Van Der Westhuizen, 2014).

The conceptualization factor of RSE was on medium level. It means that the Ukrida students who were doing their bachelor thesis were confident that they were able to develop a logical reason to determine research variables well and students were confident to generate research ideas based on literature reading. By reading, students were encouraged to think critically so that students were more independent and confident with their ability. Reading also provided an overview of the research ideas and theories that might be used as a research topic (Fagan & Ganobcsik-Williams, 2014). This part cannot be separated from the supervisor's role on assisted student in writing by providing questions and encouraging students to explore research ideas (Overall et al., 2011). The implementation factor of RSE was on high level. This indicated that Ukrida students who were doing their bachelor thesis believed that they were capable of conducting research. This belief was supported by the fact that they were passed the research methods and statistics courses. According to Welzer-Ward et al. (2010), the RSE level can be high if students experienced a positive experience in the research design courses. It showed that students who had joined the research design course had a higher confidence in their ability to perform research procedures, data collection, ensuring reliable data collection, analysis, and interpretation of research results.

The early tasks factor of RSE was on high level. It indicates that the Ukrida students who were doing their bachelor thesis are sure that they could follow the principles of appropriate research, and are able to search the literature. In addition, the participants took the initiative to ask and discuss with professors, even via online communication. Research conducted by Jones and Madden found that nearly 75% of students used the internet in the research process (Purdy, 2012). The student used the internet to access library websites, so that they had an updated information sources to help students understanding the research concepts (Salehi et al., 2013). The presenting the results factor of RSE was on the high level, showing that Ukrida students who were doing their bachelor thesis have a high confidence that they are able to meet the faculty's thesis writing standard, able to present the results in the defense, able to identify the implications for further research, and able to link the results of the research with the literature used. Presenting the result on the defense also encourage students to be more confidence (Birdsong & Schuster, 2006).

5. Conclusion

In conclusion, Ukrida students who were doing their bachelor thesis has high RSE, characterized by the implementation factor, the early tasks factor, and the presenting factor of the results which are in a high category, while the conceptualization factor is in the medium category. Based on demographic data, gender, faculty, and the time spent between starting the bachelor thesis until this study's data collection has no difference on research self-efficacy in the Ukrida students who were doing their bachelor thesis. However, there is a significant difference in research self-efficacy between on the students who have already passed the proposal seminars with the students who have not passed the proposal seminars yet.

6. Suggestion

For further research, researchers suggest to investigate the demographic data of the participant to get a deep understanding about the connection between the demographic data and RSE level, such as the participation on research methods and statistics courses on RSE. The longitudinal research can be done to explore the difference of RSE level in the early stages and the final stage of academic research.

Researchers also suggest to the university to give trainings, such as scientific writing, statistical, and research methods to the students. It can improve students' research skills and increase their confidence in writing their bachelor thesis. This also can be done by providing enough academic sources, such as books, and articles in the library, as some students find it difficult to find references in the UKRIDA library.

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