Undergraduates' Perceived Abilities in Research

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Abstract

This descriptive study assessed the undergraduate students' perceived abilities in performing research-related tasks and attempted to identify the students' difficulties in research. Responses were gathered from a convenience sample of 346 students enrolled in thesis writing course. The overall descriptive scores indicate that the students' perceived abilities were only at moderate or satisfactory level. Results further showed that students were most confident when searching for related studies and when writing a summary of their research. On the other hand, a number of students reported difficulties when selecting appropriate statistical treatment and discussing research results. Implications of the findings are discussed.

Key words: perceived abilities, research, undergraduates

1. Introduction

Research skill is one of the most important intellectual abilities that industries demand among graduates. It opens job opportunities to a diverse field of disciplines such as education, medicine, business, technology and agriculture among others. Higher education institutions hence allow students to conduct studies on problems or topics within their course of study and interest. Through the years, the completion of research has become more than a baccalaureate requirement because the experience also prepares students to their future professions.

The conduct of research is perhaps one of the most challenging and exciting undertaking among college students. A lot of learning occurs when students do research. Research offers an opportunity where students are able to apply the theories and concepts they learned inside the classroom. However, students in the college level tend to view research courses negatively (Papanastasiou, 2005). It cannot be denied that many students struggle in various aspects of the

research process. Engagement in academic activities like research requires a lot of laborious work. Students may choose to engage themselves in activities they believe they are capable of doing. Self-efficacy has been defined as an individual's confidence that they have the skills needed to be able to perform a specific task or accomplish a goal (Bandura, 1977). The construct of self-efficacy has also been extended to the research domain (Forrester, Kahn and Hesson-McInnis, 2004; Bieschke, Bishop, & Garcia, 1996). Beliefs of personal competence also influence individuals' amount of effort, persistence and resilience (Pajares, 1997). Students with favorable self-beliefs might be able to develop effective strategies to successfully accomplish their academic activities like research. Hence, the acquired knowledge and skills should be coupled with good self-motivational beliefs for students to pursue the rigorous research process.

Individuals' achievement can also be explained by their beliefs about how well they will do on the activity and the extent to which they value the activity (Wigfield & Eccles, 2000). Students who are confident with their abilities may give more time and efforts to attain their desired academic goals. Students may also pursue academic activities like research because they somehow find it valuable and interesting.

Given the relevance of research in students' academic and professional lives, this descriptive study attempts to evaluate the students' perceived abilities in performing research-related activities. The students' view on research courses could possibly influence the efforts they give in their academic tasks like research. Students with favorable self-beliefs are believed to develop more interest in research. Teaching research courses is undeniably a difficult task especially among students with no prior research experiences. Results of the study are expected to help identify students' strengths and weaknesses with respect to the conduct of research. Gaining better

understanding of the students' research difficulties will be a good basis for creating strategies to assist students in various stages of the research process.

2. Methods

The descriptive survey was conducted during the school year 2015-2016. Responses were gathered from a convenience sample of 346 college students enrolled in thesis writing course at Bulacan State University, Philippines. Some respondents have already completed their research requirements while others were in the final stage of writing their theses. There were 156 (45.1%) males and 190 (54.9%) females in the study. The students also represented various academic disciplines such as nursing (12.7%), mathematics (11.3%), biology (5.8%), mass communication (25.7%), hotel and restaurant management (19.9%), and business courses (24.5%).

A questionnaire was constructed to measure the students' perceived abilities in performing research-related tasks. Other related-instruments and scales were reviewed prior to the development of the questionnaire. The developed items are focused on the major activities involve in the research process (research conceptualization, literature reviews, methods, analysis and writing of results). Responses are based on a five-point Likert type scale (from 1= strongly disagree to 5= strongly agree) where higher scores indicate higher self-perceptions. Face and content validity of the instrument was obtained through consultation with experts in the field. The Cronbach's alpha coefficient for the 15 items of the scale is .87 suggesting good internal consistency. The second part of the instrument consists of open-ended questions to gather information regarding the students' difficulties in research.

Descriptive statistics such as means and standard deviations were used to describe the students' perceived abilities in conducting various research activities. Ranks and frequencies were used to summarize the problems and other research difficulties of the students.

3. Results

Table 1 presents the descriptive summary of the students' perceived abilities in research. Findings revealed that on average, students' research self-beliefs were only observed at moderate level (M= 3.56, SD= .456). Examination of the individual items of the scale showed that students were most confident when searching for related studies (M= 3.69, SD = .795), writing a brief summary of research (M= 3.65, SD= .763) and when choosing appropriate data collection method (M= 3.63, SD= .770).

Table 1. Descriptive measures of the students' perceived abilities in research (n=346)

Items	Mean	SD
Indicate your degree of confidence in performing the following research-related tasks:		
Conceptualize research problem	3.57	.711
Formulate research questions and hypotheses	3.58	.680
Measure study variables and its attributes	3.54	.764
Efficiently search for related studies using internet and other library resources	3.69	.795
Evaluate/criticize research articles and write a comprehensive literature review	3.53	.739
Use literature review in enhancing the problem	3.53	.803
Define the scope and limitations of the study	3.54	.802
Write a research abstract	3.65	.763
Choose appropriate research design	3.54	.779
Design a suitable sampling plan	3.56	.822
Choose and execute an appropriate data collection procedure	3.63	.770
Apply appropriate statistical treatment	3.52	.777
Report and interpret statistical results	3.59	.688
Discuss research findings with depth	3.50	.766
Draw implications of the research findings	3.51	.762
Overall Mean	3.56	.456

On the other hand, lowest means were observed in situations where students discuss research findings (M= 3.50, SD= .766), when they draw implications of research results (M= 3.51, SD= .762) and when applying appropriate statistical treatment (M= 3.52, SD= .777).

The study also documented the problems or difficulties encountered by the students while doing their respective research studies. Table 2 summarizes the results of the survey.

Table 2. Problems encountered by the students while doing their research

Items	Frequency	Rank
Problems in selection and computation of the statistical treatment	56	1
Problems in discussing and interpreting study results	40	2
Time frame given is not enough	26	3
Lack of concentration and focus	24	4
No experience	22	5
Role and participation of group members	10	6

Based on the data gathered, the top problem experienced by some students was during the selection and computation of statistical treatment followed by problems in discussing research results and the insufficient time given to finish the research. Other difficulties reported by the students were lack of focus, no prior research experience and problems related to the participation of group members.

4. Discussion and Implications

This study assessed the undergraduate students' perceived abilities in performing research-related tasks and attempted to identify the problems and research difficulties experienced by the students. The overall descriptive scores indicate that the students' research self-beliefs were only at moderate or satisfactory level. Results showed that students were most confident when searching for related studies using internet and other library materials. This is probably because of the accessibility and current exposure of students to media like internet. This also gives students an advantage because internet offers the easiest and most convenient way of searching for studies related to their respective researches. Studies have shown that internet has impact on students'

research works (Ilo and Ifijeh, 2010) and a large percentage of students were also found to be using internet for research and education purposes (Kumar, 2013). However, the respondents' ability to evaluate, use and write a comprehensive literature review were somewhat rated lower than the other items.

On the other hand, the lowest computed means were obtained in situations where students discuss research findings, when they draw implications of the research results and when applying appropriate statistical treatment. The aforementioned situations were also the top problems experienced by some students while doing their research. Based on the qualitative responses, some students reported difficulties in understanding the concept of hypothesis because statistical inference was not covered during their statistics course. A number of students also reported frustrations when trying to do statistical computations while others opted to pay for the services of a statistician. Others also signified their interest to learn statistical software. With regards to problems in the interpretation of research results, reasons given by some students include lack of writing experience and confusion in the manner of presenting and interpreting research findings. Few also responded that even though they had frequent consultation meetings with their thesis instructor and adviser, the interpretation of research results was not formally taught in the classroom.

Given the students' overall score in the scale, it becomes important to develop instructional strategies to increase students' confidence in performing research-related tasks. Findings suggest that there is a need to strengthen statistics courses to possibly reduce students' anxieties when analyzing and applying statistical tools. Though students expressed themselves as competent when searching for related studies, their perceived abilities to evaluate and use related literatures were not remarkable. Hence, it might be helpful to design classroom activities where students can critique journal articles and get immediate feedback from their instructors. Engaging students in group-

based research projects is also believed to be an excellent way of teaching research methods (Ball and Pelco, 2006).

The present study has also some limitations. The study developed a research instrument with good internal consistency measure however it does not imply unidimensionality of the scale. Furthermore, the low response rate on the second part of the instrument may not provide a complete scenario of the students' difficulties in research. The perceptual responses of the participants may not also reflect their actual research competence. Thus, other quantitative and qualitative approaches may be employed in future research.

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