

Attitude and Anxiety towards Research, Its Influence on the Students' Achievement in the Course

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ABSTRACT

The study used the Attitude Towards Research Scale devised by Elena T. Papanasatiou in 2005 to investigate the attitudes and anxiety level of the students towards research and its influence on their academic achievement. Three hundred thirty eight (338) undergraduate students from the College of Arts and Sciences who had already taken a research course participated in the study. The study used two designs, the descriptive survey and associational research to have a better understanding of the students' attitudes and anxiety towards research. Participants' responses were analyzed through mean, and Pearson correlation using SPSS version 20. Overall, the students have a positive attitude towards research though most of them display a negative attitude on difficulty of research. The male students are more positive compared to their female counterparts. As predicted those with a high academic grade display a high positive attitude towards research. Moreover, the students show anxiousness to research by admitting that it is stressful. However, a no correlation was obtained between the students' academic achievement and usefulness of research to profession and usefulness of research and positive attitudes.

Keywords: Attitudes towards research, research anxiety, academic achievement

INTRODUCTION

In today's fast changing world, research has become one of the most important intellectual possessions for every human being to change his way life in accordance to the needs and demands of the society. It is a key ingredient in shaping up the world that man lives in and the new experiences they see and encounter in their surroundings. It opens new frontiers to many fields like, education, business, economics, medicine and science. Truly, research in itself had made a significant contribution in man's giant leap towards the future.

As research demand increases, every tertiary school require their students to come up with a research paper focusing on problems, issues or topics relative to their interest. This becomes a requirement to every college student who wanted to receive a baccalaureate degree. However, coupled with this demand is the students' apprehension in their research class. Students at the undergraduate level usually tend to view research methods courses negatively (Papanastasiou, 2005). Many records could show evidences of the students' negative attitudes towards research in relation to courses in, statistics and mathematics (Adams & Holcomb, 1986; Wise, 1985). There are problems which were believed to be associated with the negative attitudes of the students towards research such as the difficulty of research, the number of workloads given to the students and their anxiety towards the subject. Normally, those students who find research difficult and stressful develop greater research anxiety thus, sacrificing their grades in the course. Similarly, past literatures regarded attitude as a

significant predictor of one's academic achievement. Most of these researches illustrated the more positive one's attitude towards an academic subject, the higher the possibility for him/her to perform well academically, as what Reynolds and Walberg (1992) identified, attitude had a powerful influence on students' academic achievement.

However, contrary to this claim, there were other researchers arguing that students' attitude might not be correlated to academic achievement. As Mickelson (1990) stated, if ever attitude is significantly related to one's academic achievement, it is dependent on a number of variables, particularly the demographic background of the student. Correspondingly, Ma and Kishor (1997) also argued that the statement "attitude was a significant predictor of academic achievement" was indeed a paradox.

RESEARCH QUESTIONS

The objective of the study is to determine the attitudes of CAS students toward research. Specifically, it finds answer to the following questions:

1. What are the attitudes of the students towards research?
2. What is the level of anxiety of the students enrolled in a research?
3. What is the relationship between the students' research anxiety, attitudes and academic achievement in the course?

MATERIALS AND METHODS

Participants

The sample in this study includes 338 students who had already taken a research 1 class at Rizal Technological University. The students who had participated in the study were all undergraduates from the four departments of the College of Arts and Sciences. There were 85 (25%) males and 253 (75%) females. The participants with a very good academic performance comprise 75 (21%), good performers 110 (33%), fair performers 107 (32%) and passing 46 (14%).

Methods Used

The researchers employed two descriptive research designs in gathering the necessary information needed in the study. The descriptive survey was used because the researchers' objective is to know the present attitudes of the students towards research and the extent of their perception as to the difficulty of the course, the usefulness for the profession, relevance to life, positive attitudes and research anxiety. The causal comparative design was also employed since the researchers wanted more than simply describe a particular situation or events. They also wanted to know if the differences on the attitudes of the students towards research are related to their achievement and if certain variables affect their achievement in the course.

Procedure

Data were collected on the second semester of school year 2013 and 2014 so that each student had some exposure to a research course and all participants had taken at least one research method class. All participants were administered the Attitudes Towards Research (ATR) Scale devised by Dr. Elena T. Papanastasiou in a classroom setting by one of the researchers. The administration of the test was done for a day and only those students who were absent that day were not able to participate in the study. The participants were assured that their responses were anonymous because their names did not appear in the questionnaire.

Participation was voluntary and the participants did not receive any credit for their involvement.

Instrument

For the purpose of this study the researchers administered the Attitudes Toward Research (ATR) scale which was devised by Elena T. Papanastasiou in 2005. The Attitudes Toward Research (ATR) scale consists of 32 items measured on a 7- point Likert scale. A value of 1 indicates a response of ‘strongly disagree’, while a value of 7 corresponds to ‘strongly agree’. The items in the ATR were subdivided into five subscales: usefulness of research in the students’ profession; research anxiety; positive attitudes towards research; relevance of research in the students’ personal lives; and research difficulty. The research usefulness subscale included 9 items. The second subscale that of research anxiety included 8 items. The third subscale that of positive attitudes toward research, included 8 items. The fourth subscale that of relevance to life included 4 items. Finally, the last subscale that of research difficulty included 3 items.

The Cronbach’s alpha reliability estimates of the subscales were adequate towards high. The Coefficient alpha reliability for the research usefulness in the profession factor which included 9 items was .912; the reliability for the research anxiety factor which included 8 items equaled .932; the reliability for the positive attitudes toward research factor equaled .924 (8 items). The reliability of the life relevancy factor that included 4 items equaled .713, while the reliability for the research difficulty factor equaled .701 (3 items). The reliability of the whole scale was very high, and equaled 0.939.

RESULTS AND DISCUSSIONS

In order to examine the students’ attitudes in perspective, the average scores of the participants on the five ATR scales were presented on table 1. It can be observed from the table that the factor on which the students have the most negative attitude is the difficulty of research since they had the lowest score on this factor, male ($\bar{x} = 3.05$, $SD = 1.23$) and female ($\bar{x} = 3.08$, $SD = 1.05$). However, the students were not as affected by the usefulness of research, male ($\bar{x} = 4.23$, $SD = 1.05$) and female ($\bar{x} = 4.28$, $SD = 1.01$) because they have a high rating on this factor indicating that the students recognized the usefulness of this course in their professions. The students also responded to the relevance of research to life with a higher score, showing their appreciation as to the goodness that this course will bring to their life.

Table 1. Attitudes of the Students Towards Research by Gender

<i>Attitudes Towards Research</i>	<i>Male</i>		<i>Female</i>	
	<i>WM</i>	<i>SD</i>	<i>WM</i>	<i>SD</i>
Research difficulty	3.05	1.23	3.08	1.04
Usefulness for the profession	4.23	1.05	4.28	1.01
Relevance to life	4.07	1.18	4.38	1.12
Positive Attitudes	3.33	1.02	3.36	1.05
Research Anxiety	3.49	1.25	3.54	1.05
Overall Attitudes Towards Research	3.63	1.15	3.73	1.05

This result is in consonance with the study conducted by Iqbal (2011). He reported that the students in the selected universities in Pakistan revealed difficulty in conducting research. Most of the students from the sampled universities reported the same level of attitudes towards research because of the lack of research orientation and other academic activities related to research.

To determine the students' attitudes towards research based on their performance in the course their mean response to each of the questions in each dimension of the ATR Scale were obtained. Those students who perform very well in the course have a more positive attitude ($\bar{x} = 3.61$). In many researches that have been conducted, it was illustrated that the more positive the attitude of the student towards an academic subject, the higher the possibility for him/her to perform well academically (Reynolds & Walberg, 2002). They also see the relevance of research in their profession ($\bar{x} = 4.51$) and therefore knew that research is useful ($\bar{x} = 4.33$), however, it was surprising to see that they find it more difficult ($\bar{x} = 3.25$) as compared to those students who have only better, fair performance and barely pass the subject since they have the highest mean score on this area. As expected, those with the lowest performance were the most anxious in research ($\bar{x} = 4.00$).

Table 2. Attitudes by Academic Achievement

Attitudes To Research	Very Good		Good		Fair		Passing	
	WM	SD	WM	SD	WM	SD	WM	SD
Difficulty	3.25	1.25	3.18	1.11	2.77	1.07	3.08	1.11
Usefulness	4.33	1.03	4.30	1.05	4.31	1.01	4.06	1.04
Relevance	4.51	1.05	4.25	1.18	4.15	1.23	3.97	1.10
Positive Attitudes	3.61	1.03	3.30	1.03	3.30	1.03	3.15	1.03
Anxiety	3.29	1.20	3.46	1.10	3.49	1.12	4.00	1.18
Over all attitudes	3.80	1.11	3.70	1.09	3.60	1.09	3.65	1.09

Looking at the anxiety level of the male and the female students, it can be viewed from table 3 that the female students have a higher research anxiety level ($\bar{x} = 3.60$, $SD = 1.15$) as compared to their male counterparts ($\bar{x} = 3.52$, $SD = 1.14$). Both groups identified that research is stressful because this is the factor where they got the highest rating (*male*, $\bar{x} = 4.17$ and *female*, $\bar{x} = 4.19$). The male students find it more difficult ($\bar{x} = 3.78$) as compared to their female counterpart ($\bar{x} = 3.50$). However, despite of the difficulty and stressful work brought by this course, the students never felt nervous whenever they are on a research class since this is the factor where they received the lowest rating.

When students are confronted with new and challenging material, it is likely to trigger a number of responses from them including stress, uncertainty and anxiety. Indeed, recent research on quantitative research methodology and statistics courses shows that college students have difficulties and experience anxiety (Murtonen, 2005; Murtonen & Lehtinen, 2003; Onwuegbuzie & Wilson, 2003).

Similarly, in a series of studies performed by Wilson and his colleagues (Wilson and Onwuegbuzie 2001), it has been found that the main factors that contributed to the increase of students' anxiety in a research methods course were those of the amount of work required, the amount of material covered, test taking, difficulty of the material covered in class as well as preparing individual research projects.

Table 3. Anxiety level of Students towards Research by Gender

<i>Anxiety Towards Research</i>	<i>Male</i>		<i>Female</i>	
	<i>WM</i>	<i>SD</i>	<i>WM</i>	<i>SD</i>
Research makes me anxious	3.58	1.12	3.54	1.08
I feel insecure concerning the analysis of research data	3.17	1.08	3.57	1.18
Research scares me	3.09	1.05	3.17	1.25
Research is stressful	4.17	1.02	4.19	1.01
Research makes me nervous	3.45	1.34	3.51	1.18
Research is complicated	3.33	1.18	3.57	1.07
Research is difficult	3.78	1.08	3.50	1.23
Research is a complex subject	3.60	1.21	3.68	1.19
Overall Anxiety Towards Research	3.52	1.14	3.60	1.15

Overall, table 4 disclosed that the students with high academic achievement have low anxiety in research and those with the lowest academic achievement have the highest anxiety in the course. Conversely, those students with a passing grade find research stressful ($\bar{x} = 4.60$) but surprisingly it appears that they do not find the subject too difficult ($\bar{x} = 3.45$).

Since these students were new to the subject, they find themselves introduced to completely new concepts, and being confronted with new and challenging material is likely to trigger stress, uncertainty and anxiety (Papanastasiou, 2006). Indeed, research on quantitative research methodology shows that college students have difficulties and experience anxiety (Onwuegbuzie & Wilson, 2003).

In order to examine the relationship between the students' attitudes with the ATR Scale, anxiety to research and their academic achievement in research, a Pearson Correlation Coefficient was employed (see Table 7). Strong correlation is seen between research anxiety and research difficulty ($r = 0.771$), research anxiety and academic achievement ($r = 0.718$), research difficulty and positive attitude ($r = 0.712$) and the academic achievement and research difficulty ($r = 0.634$). This results suggests that the students' research anxiety and feeling that research is difficult affects their achievement in the course. Similarly, the difficult experiences of the students towards research trigger their anxiety for the course and since they find the course difficult they tend to have a negative attitude towards research. As what had been revealed by Huh, Kuh & Gayles (2007), students' research experiences (SREs) have a significant effect on learning. Although the diversity of possible topics,

demands, and outcomes makes SREs difficult to assess university-wide, many of the attitudes (motivation, beliefs, and practices) that students develop about research transcend disciplines.

Table 4. Anxiety by Academic Achievement

<i>Anxiety Towards Research</i>	<i>Very Good</i>		<i>Good</i>		<i>Fair</i>		<i>Passing</i>	
	<i>WM</i>	<i>SD</i>	<i>WM</i>	<i>SD</i>	<i>WM</i>	<i>SD</i>	<i>WM</i>	<i>SD</i>
Research makes me anxious	3.38	1.10	3.51	1.12	3.62	1.08	3.73	1.10
I feel insecure concerning the analysis of research data	3.05	1.05	3.26	1.18	3.45	1.12	3.72	1.17
Research scares me	3.07	1.15	3.10	1.08	3.15	1.04	3.20	1.11
Research is stressful	3.69	1.02	4.04	1.00	4.27	1.01	4.60	1.01
Research is complicated	3.27	1.13	3.39	1.10	3.47	1.11	3.59	1.12
Research makes me nervous	3.37	1.25	3.45	1.23	3.56	1.13	3.54	1.43
Research is difficult	3.43	1.25	3.80	1.11	3.80	1.20	3.45	1.16
Research is a complex subject	3.38	1.25	3.41	1.10	3.40	1.21	3.45	1.29
Overall Anxiety	3.33	1.15	3.50	1.12	3.59	1.11	3.66	1.17

Likewise, from the Factor Structure of the Attitudes towards Research Scale study of Papanastasiou (2005), she revealed that people feel favorably to activities or objects that are useful in their lives. Hence, a strong relationship existed between the usefulness factor and the relevancy to life factors. Another strong relationship was found in the data that have to do with affective factors, including those of research anxiety, research difficulty and positive attitudes towards research. However, issues of whether research is difficult, or if it causes anxiety to the students do not appear to be highly correlated with the usefulness factors.

Table 5. Correlation of Research Anxiety, Attitudes and Academic Achievement

	<i>F1</i>	<i>F2</i>	<i>F3</i>	<i>F4</i>	<i>F5</i>	<i>F6</i>
F1- Usefulness for the Profession	1					
F2- Positive Attitudes	0.27	1				
F3- Relevance to Life	0.23	0.24	1			
F4- Research Difficulty	0.15**	0.71**	0.31*	1		
F5- Research Anxiety	0.27**	0.51**	0.36**	0.77**	1	
F6- Academic Achievement	0.30	0.54**	0.12	0.63**	0.72**	1

Note: **Correlation is significant at 0.01 level (two-tailed).

*Correlation is significant at 0.05 level (two-tailed).

Surprisingly, a correlation was not visible between the students' academic achievement and usefulness of research to profession and usefulness of research and positive attitudes. Based on the past literature, there was a general consensus that attitude could be regarded as a significant predictor of one's academic achievement. Most of these researches illustrated the more positive one's attitude towards an academic subject, the higher the possibility for him/her to perform well academically. As what Reynolds and Walberg (1992) identified, attitude had a powerful influence on students' academic achievement.

Even though most of the studies suggested that there was a positive relationship between attitude and academic achievement, there were other researchers arguing that students' attitude might not be a significant predictor of their academic achievement. In a study conducted by Mickelson (1990), he stated that whether attitude could significantly predict one's academic achievement, depended on a number of variables, particularly the ethnic background and social class. Correspondingly, Ma and Kishor (1997) also argued that the statement "attitude was a significant predictor of academic achievement" was indeed a paradox. Attitude might not necessarily predict one's academic achievement as it also depended on different factors, like race, sample selection and sample size.

RECOMMENDATIONS

By identifying the factors that comprise students' attitudes towards research, instructors may strengthen their discussion about the importance of learning research and its relevance on making academic and professional career choices. They may also modify students' attitude by asking them to attend research forums and conferences, skills and behavior to facilitate the learning of research and foster a deeper appreciation of this subject and thereby lessen their anxiety to the course. Students' research papers may be started even in their introductory research classes to lessen their works during the final construction of their papers so they will not find the subject stressful and difficult. Finally, replication of this research is recommended using other demographic description of the participants to further identify what other factors contribute to the students' attitudes and anxiety to research.

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