SENIOR HIGH STUDENTS' ATTITUDE AND BARRIERS IN CONDUCTING A RESEARCH: A PLATFORM TO ENHANCE SCIENTIFIC PEDAGOGICAL LEARNING

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Abstract

Background and objective: Research is an essential and powerful tool in leading man towards progress. Insufficient attention to research by a government and the educated members of a community may contribute to scientific and knowledge lags within the national community but also in the world as a whole.

Methods and Findings: Three hundred six students from an autonomous university in the Philippines served as participants and were selected through stratified random sampling. Data collection was done through survey questionnaire, checklist and open-ended questions. Results show that students have positive attitude toward research.

Conclusion: The students recognized that learning research is useful and acknowledged that research is relevant to daily life. Students' barriers to research include limited time, lack of motivation, lack of research skills and inadequate financial support.

Keywords: Attitude Toward Research, Research Challenges, Positive Disposition, Senior High School Students.

Introduction

Research is an essential and powerful tool in leading man towards progress. The key to success and progress in the knowledge-based societies is a positive attitude towards research [1]. The attitude towards research basically means a detailed study of thinking, feeling and the person's behavior towards research. The importance of understanding the perceptions and attitudes of students toward research which can lead to improvement of research practices among students [2].

A number of studies had shown positive attitude towards research among participants. Participants expressed positive perceptions of the importance of research [3]. Majority of medical students understood the necessity for research and had a positive attitude towards the same [4]. Likewise, students have recognized the importance and usefulness of research for professional work, exhibited a personal interest in research and ability to do research [5]. The university teachers considered research useful for their professional performance as well as in their daily lives[6]. Moreover, according to studies conducted female teachers have more positive attitudes towards the applicability of educational research to classroom practice than their male counterparts [7, 8].

On the other hand, the students have favorable knowledge of research, but their attitude to the field was inadequate, hence, more attention must be placed on these parameters in the curriculum to improve student interest in research. To bring positive change among students, professional development activities may be initiated. There must be promotion of research culture because it is not only valuable for students' professional pathway but also for the community where they will serve.

Collaboration and personal commitment were critical for the success of any research endeavor. However, several barriers such as lack of time and lack of prior experience in research may hinder students in accomplishing these tasks. The perceived barriers to research such as time constraint, inadequate training [9] lack of awareness, funds, and difficulty in follow-up need to be addressed [9]. In Switzerland, it is confirmed that research orientation and research anxiety should be considered and addressed by teachers when conceptualizing research courses [10]. There are problems which were believed to be associated with the negative attitudes of the students towards research. Some reasons for such negative attitudes are lack of student conferences and research workshops on how to write and organize research papers and insufficient encouragement of those young researchers. One of the barriers to pursuing research is lack of time. Adequate time should be

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provided to students for improving the research activities [11].

The findings of a study hold significance for those aiming to strengthen meaningful encounters with research among prospective teacher researchers through the use and conduct of educational research within an intensified context [12]. It is suggested that structured research skills training and effective support system will help students overcome the barriers and motivate them to undertake research and also pursue research as a career [13].

In the Philippines, there is a revision of the basic education system through Republic Act 10533, also known as the Enhanced Basic Education Act. The enhanced basic education program encompasses at least one year of kindergarten, six years of elementary, and six years in secondary education. The secondary has four years junior high school and two years senor high education. The Senior High School offers a wide range of subjects from which students can choose a track leading to college or university entrance or a career in business or industry. One of these tracks is the academic track with four strands: Accountancy, Business and Management (ABM), Science, Technology, Engineering and Mathematics (STEM), Humanities and Social Sciences (HUMSS) and General Academic Strand (Gas). Students must take core subjects including two research classes. As research demand increases, St. Paul University Philippines Senior High School requires their students to come up with a research paper focusing on problems, issues or topics relative to their interest. Research subjects offer the potential for each student to be exposed to a variety of research topics, skills, and learning experiences. Participation in research contributes to critical thinking, a skill that the education curricula of countries seek to cultivate [14].

Based from the aforementioned studies, it is therefore valuable to evaluate students' attitudes towards research. This study aims to investigate students' attitudes and challenges towards research, with the purpose of improving the teaching-learning of research and make every student research-oriented.

Conceptual Framework
Based from related literature, the three main factors seen to impact on research success are attitude, knowledge, and barriers toward research. One of the most important factors underlying any study is the researchers' beliefs, as it is these that motivate them to undertake a study in the first place. The attitude to research stems from the researchers' curiosity and interest in a particular subject or their wish to solve a problem within a community. Adequate knowledge of the study subject and awareness of research principles are essential prerequisites for any study. The final factor directly affecting the performance of research lies in the barriers against researchers.

Attitudes influence the amount of effort one is willing to expend on learning a subject. Therefore, assessing students' attitudes toward a research methods course is important in order to enable instructors to develop instructional techniques leading to more positive attitudes toward the subject.

Research Methodology
1 Research Design
The researchers employed descriptive research design in gathering the necessary information in the study. The descriptive survey was used to determine the attitude of the students towards research as to the difficulty of the course, the usefulness for the profession, relevance to life, positive attitudes and research anxiety.

2 Respondents of the Study
The sample in this study were the senior high school students who had already taken at least 1 research class at St. Paul University Philippines SHS Set A. Stratified Random Sampling was used to select the participants in the study.

3 Research Instrument
The Attitudes toward Research (ATR) scale which was devised by Elena T. Papanastasiou in 2005 was used [15]. The Attitudes toward Research (ATR) scale consists of 32 items measured on a 5 - point Likert scale. A value of 1 indicates a response of 'strongly disagree', while a value of 5 corresponds to 'strongly agree'. The items in the ATR were subdivided into five subscales: usefulness of research in the students' profession (9 items); research anxiety (8 items); positive attitudes towards research (8 items); relevance of research in the students' personal lives (4 items); and research difficulty (3 items). The Cronbach's alpha reliability of the whole scale is very high (0.939).

Challenges encountered by the participants in the conduct of research were determined through a checklist and the suggestions for the improvement of research instruction were determined through open-ended questions.

4 Statistical Treatment of Data
Weighted mean was used to determine students' attitude toward research. A weighted mean of at least 2.50 implies a favorable or positive attitude while a mean less than 2.50 implies unfavorable or negative attitude. Frequency, percentage, and rank

were used to determine the challenges toward research as well as the participants' suggestions to improve the instruction of research.

5 Ethical Consideration

Ethical guidelines were followed for the whole research period. The researcher submitted the study for review and approval of the Ethics Review Board of the university. It followed the National Ethical Guidelines for Health and Health-Related Research 2017 prepared by the Philippine Health Research Ethics Board.

Results

Table 1: Profile of the Participants

Gender	Frequency	Percentage
Male	83	27.12
Female	223	72.88
Age		
16	31	10.13
17	150	49.02
18	125	40.85
Grade Level		
11	146	47.71
12	160	52.29
Academic Strand		
ABM	71	23.21
HUMMS	74	24.18
STEM	161	52.61
Number of Research Subjects Finished		
1	74	24.18
2	72	23.53
3	71	23.20
4	89	29.09
Total	**306**	**100.00**

Table 1 shows the profile of the participants according to gender, age, grade level, academic strand and number of research subjects finished. It further reveals that majority of the participants are female. About 90% of the participants are aged 17 and 18 years old. Majority are Grade 12 students. Majority of the participants are enrolled in the STEM strand. When grouped according to number of research subjects finished, the participants are almost equally distributed.

Table 2: Attitude of the Participants Towards Research

	Mean	Interpretation
Usefulness		
2. Research should be taught to all students	4.23	Strongly Agree
8. Research is useful for my career	3.91	Agree
14. Research is connected to my field of study	3.66	Agree
17. Research is very valuable	3.87	Agree
20. The skills I have acquired in research will be helpful to me in the future	4.04	Agree
21. Research is useful to every professional	4.25	Strongly Agree
22. Knowledge from research is as useful as writing	3.98	Agree
24. Research should be indispensable in my professional training	3.31	Neutral
27. I will employ research approaches in my profession	3.35	Neutral
Categorical Mean	3.84	Agree (positive)
Research Anxiety		
1. Research makes me anxious	3.54*	Agree
6. I feel insecure concerning the analysis of research data	3.19*	Neutral
7. Research scares me	3.35*	Neutral
16. Research is stressful	4.07*	Agree
18. Research makes me nervous	3.70*	Agree
25. Research is complicated	3.73*	Agree
28. Research is difficult	3.89*	Agree
32. Research is a complex subject	3.89*	Agree
Categorical Mean	3.67* (2.33)	Agree (negative)
Positive Disposition		
3. I enjoy research	3.33	Neutral
4. Research is interesting	3.61	Agree
5. I like research	3.25	Neutral
12. I love research	3.19	Neutral
13. I am interested in research	3.33	Neutral
15. Most students benefit from research	3.80	Agree

Item	Mean	Category
29. I am inclined to study the details of research procedures carefully	3.52	Agree
30. Research is pleasant	3.35	Neutral
Categorical Mean	3.42	Agree (positive)
Relevance to Daily Life		
19. I use research in my daily life	3.46	Agree
23. Research is irrelevant to my life	2.80*	Neutral
26. Research thinking does not apply to my personal life	2.60	Neutral
31. Research-oriented thinking plays an important role in my daily life	3.58*	Agree
Categorical Mean	3.11* (3.46)	Neutral (positive)
Research Difficulty		
9. I find it difficult to understand the concepts of research	3.18*	Neutral
10. I make many mistakes in research	3.53*	Agree
11. I have trouble with arithmetic/statistics	3.36*	Neutral
Categorical Mean	3.36* (2.64)	Neutral (positive)
Over-all Mean	**3.14**	**Neutral (positive)**

*items were recorded

Table 2 reveals the attitude of the participants towards research in terms of usefulness, anxiety, disposition, relevance, and difficulty. It further shows that participants agreed on research usefulness (mean = 3.84), positive disposition (mean = 3.42), and relevance of research to daily life (mean = 3.46). This implies that participants have favorable or positive attitude towards research in terms of three aspects. Participants also agreed on experiencing anxiety when doing research (mean = 3.67). This implies participants' unfavorable or negative attitude toward research. In terms of research difficulty, participants rated it as neutral with a mean of 3.36. This implies that participants find research difficult but still they have perceived research positively.

Generally, with an over-all mean of 3.14, the participants have favorable or positive attitude toward research. This finding supports the studies of Landicho (2020), Dsouza (2017) and Halabi (2016) who concluded that students had a positive attitude towards research and recognized the importance of research to practical life[3,4,5].

Table 3: Challenges Encountered By The Participants in Conducting A Research

Challenges/Barriers	Frequency	Percentage
Limited time	216	70.59%
Lack of researcher motivation/interest	151	50.65%
Lack of research knowledge and skills	134	43.79%
Inadequate financial support	126	41.18%
Preference for academic instruction over research	117	38.23%
Lack of mentorship	53	17.32%

Table 3 presents the challenges encountered by the respondents when doing research. Out of 306 participants, 216 or 70.59% stated that limited time is the most challenging part of conducting research. As reported by students, this limited time is due to many requirements in other subject areas. Lack of motivation and lack of research knowledge/skills are mentioned by other participants. Some participants revealed that financial support from their parents or benefactors is inadequate. Preference for academic instruction over research and lack of mentorship are barriers to finishing research work as experienced by few participants. These barriers are similar challenges faced by students in the study of Manju, et al (2017) [11].

Discussion
The result encompasses challenges and the students' attitude towards research through the usefulness, research anxiety, positive disposition, relevance to daily life, and research difficulty. This study have demonstrated that students take part in various approaches when attempting to achieve a learning task in research. Every one of the distinctive ways to deal with challenges envelops an intention in learning and a set of appropriate strategies to accomplish the task. Teacher positive hopes were related with high academic achievements and the teacher negative hopes related with decrease in academic achievements. Learner's perception of the instructor's behavior influences the interaction [16].

This implies that educators should become aware of the efforts of students made for learning in order for them to reach knowledge. It is important to know the ways of learning, develop expectations and have no anxiety for learning in order to be successful. Learning will follow such a process. Students desired that their teachers provide proper guidance and assistance in the different stages of the completion of research. They suggested that teachers should be more considerate and give

students more time to finish their research papers. Also, it was suggested that there should no more periodic examination instead focus on the writing of research, and the need for library sources/books, laptops, projectors, internet connection must be provided to effectively instruct students to conduct their researches. With these improvements huge extensions have risen to the top to give learning in a substantially more effective and interactive way [17].

Conclusion
Students have a positive attitude towards research as expressed in their high rating of research usefulness, positive disposition and research relevance to daily life. However, the students show research anxiety by admitting that it is stressful and some found conducting research a difficult task. Moreover, they disclosed some challenges such as limited time, lack of motivation, lack of research skills and inadequate financial support that may hinder them in the completion of research output. School administrators, teachers and other stakeholders should plan and take action to address these challenges. For the successful learning of research, teachers should consider their students' attitude and innovate strategies that will motivate students to love research. The classroom environment performs an important role in maintaining student curiosity and interest. When the students observe a sense of control and security in the learning environment, they are more involved because they look to the learning with eagerness and strength [11].

Recommendations
Based from the findings and conclusion of this study, the following recommendations were made. Instructors may enhance the discussion about the importance of learning research and its relevance to one's professional life to foster deeper appreciation of the subject. Students may attend research forums and conferences to improve their research knowledge and skills and thereby lessen their anxiety to the course. Research instructors, with the students, may plan and decide together for the timetable in the conduct of research from conception of title to final construction of research paper. Other researchers may conduct a similar study to further identify factors that contribute to the students' attitudes and anxiety to research.

Conflicts of Interest
The author declares there are no significant competing financial, professional, or personal interests that might have influenced the performance or presentation of the work described in this manuscript.

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