

Attitudes of Senior High School Students toward Research: An Exploratory Study

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Abstract

Research is the foundation of knowledge and innovation. In the Philippines' basic education landscape, a "research-infused" curriculum was implemented in the senior high school to inculcate research culture among learners. Thus, this convergent parallel mixed-method study explored the attitudes of Grade 12 senior high school students towards research and its relationship to their academic performance. Papanastasiou's Revised Attitude towards Research (R-ATR) scale was administered to 100 randomly-selected Grade 12 senior high school students to gather quantitative data. An open-ended questionnaire was utilized to gather qualitative data from 10 senior high school students. Data were analyzed using descriptive statistics and the Pearson Correlation Coefficient. Microsoft® Excel and IBM® SPSS were used to facilitate the statistical analysis. Excerpts from the qualitative data were provided to support the statistical analysis of data. Results revealed that the students had a generally positive attitude towards research albeit the high level of anxiety they experienced. R-ATR scale attitude domains showed a weak to a strong degree of relationship with each other. Conversely, students' attitudes toward research did not show a significant relationship with students' academic performance in Practical Research 2. The results yielded by this research may be used as a basis for more efficient delivery of research-related courses in senior high school.

Keywords: Attitudes, Mixed-method, Research, Senior High School Students

Introduction

Research plays a vital role not only within the academe but in various areas of life. Through research, learners develop analytical and critical thinking skills, as well as effective communication skills that are crucial in the global arena. Ultimately, research is the foundation of knowledge that paves way for innovation in a vast array of disciplines. In the Philippine basic education landscape, the Department of Education (DepEd) puts forth several initiatives to promote, inculcate, and sustain research culture among elementary and secondary schools in the country (DepEd, 2017). These initiatives include the introduction of two (2) Practical Research subjects in the Enhanced Basic Education (K-12) Curriculum. Students in Senior High School are now exposed to both Qualitative and Quantitative research. However, since students are unaccustomed to research, their appreciation and productivity relative to the discipline may be influenced by different factors such as their attitudes. Reynolds and Walberg (1992) acknowledged that attitude had a significant force on the students' educational attainment.

Fishbein and Ajzen (1980) defined attitude as a learned predisposition to respond in a consistently favorable or unfavorable manner concerning a given object. Several studies emphasized that learners' attitudes towards a particular subject can have serious implications on the learning process and academic performance (Elmore & Lewis, 1991; Ma, 1995; Onwuegbuzie & Wilson, 2003; Papanastasiou & Zembylas, 2008; Wise, 1985; Woelke, 1991; Zeidner, 1991) as cited in Kakupa and Xue (2019). In addition, Ellis (2008) raised that learners with positive attitudes who experience success would have these attitudes reinforced, and learners' negative attitudes may be strengthened

by lack of success. Papanastasiou (2005) also revealed that students' negative attitudes and feelings about research influence the amount of time, effort, and commitment they choose to invest in the course. Similarly, Munir and Bolderston (2009) revealed that students' negative attitude generally results in disinterest in conducting research. It was also emphasized that general disinterest was the most common reason why students do not engage in research. In consonance, Oguan Jr et al. (2014) affirmed in their study that most students had a negative attitude towards research and they found research to be difficult. Conversely, Belgrave and Jules (2015) found that students who perceived research as functional and meaningful to real-life situations had a positive attitude toward research. Hence, it is necessary to determine and understand Grade 12 students' attitude toward research to enhance research productivity and device new pedagogies in the teaching and conduct of research at the senior high school level. Waters et al. (1988) as cited by Muthuswamy et al. (2017) claimed that there was a need to explore the views and attitude of students towards research to enable the instructors develop techniques that would lead to a positive attitude towards research.

This convergent parallel mixed-method study explored senior high school students' attitudes towards research in three (3) domains: Usefulness of Research, Anxiety about Research, and Positive Research Predisposition. Relationships among attitude domains and students' academic performance were also analyzed.

Research Objectives and Hypothesis

The study aimed to explore the attitudes of Grade 12 senior high school students towards research. Specifically, it sought to satisfy the following objectives:

1. Identify the relationship among the three (3) domains of

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the attitude of Grade 12 senior high school students towards research;

H_1 - *There is a significant relationship among the three (3) domains of attitudes of Grade 12 senior high school students towards research*

H_0 - *There is no significant relationship between the three (3) domains of attitudes of Grade 12 senior high school students towards research*

2. identify the relationship between the grades of Grade 12 senior high school students in Practical Research 2 and their attitude.

H_1 - *There is a significant relationship between the attitudes and grades of Grade 12 senior high school students*

H_0 - *There is no significant relationship between the attitudes and grades of Grade 12 senior high school students*

Methodology

This study utilized a convergent parallel mixed-method design where the researcher simultaneously implemented the quantitative and qualitative methods during the same stage of the research process. Subsequently, an exploratory approach was employed since only limited studies were done in the context of senior high school in the Philippines.

The respondents of the study were composed of 100 randomly selected Grade 12 senior high school students. The sample was chosen as they were required to take two research subjects in one school year—this made them more exposed to research. Thus, a more authentic exploration of research attitude was acquired. Based on the Post Hoc Power Analysis performed through the G Power software, the sample size of 100 yielded .87 effect size. Experts state that statistical power is adequate if its value is 0.80 or above (Lougheed et al., 1999; Steidl et al., 1997).

Quantitative data were gathered by administering Papanastasiou (2014) Revised Attitude towards Research (R-ATR) scale. The instrument consisted 32 Likert scale items whose scales ranged from 1 to 7. The value of 1 stood for strongly disagree, while 7 stood for strongly agree. The instrument measured the research attitude in three domains: Usefulness of Research; Anxiety about Research; and Positive Research Disposition. Each of the subscales had the following reliability coefficients: Usefulness of Research ($\alpha = .90$); Anxiety about Research ($\alpha = .86$); and Positive Research Predisposition ($\alpha = .92$) (Papanastasiou, 2014). These domains of attitudes were patterned contingent to the tripartite framework originally presented by McGuire (1969), which suggested that attitude may be defined as the cognitive, affective, and behavioral predispositions towards a concept, a situation, an object, a course, and others (Papanastasiou, 2014). Qualitative data were gathered through an open-ended questionnaire administered to 10 participants. Responses in Filipino were translated to English. As the students' attitudes toward research was correlated to their

grades in Practical Research 2, consent was obtained from the respondents in getting their grades from their respective subject teachers.

Descriptive statistics was carried out to analyze the quantitative data (mean and standard deviation) for the entire scale and each of the sub-scales. Negatively-worded items of the "Research Anxiety" sub-scale of the R-ATR scale was reverse-coded before running the analysis. Pearson Correlation Coefficient was used to identify the relationship between students' attitudes and grades in Practical Research 2. Microsoft© Excel and IBM© SPSS software were used to facilitate the statistical procedures.

Results and Discussion

1. The Attitude of Grade 12 Senior High School Students towards Research

As presented in Table 1, Grade 12 senior high school students had a generally positive attitude in domains 1 and 3. This result indicates that the students generally perceived research as useful for their future professional practice and relevant to their lives. On the other hand, it was shown that for Factor 2, students generally experienced difficulty and anxiety in research. This may be due to the very technical and demanding nature of research. Based on the overall mean, students had a generally positive attitude towards research. These findings are aligned with the study of Gallos (2017) which revealed that SHS students have an optimistic attitude toward research. In support, some of the respondents stressed:

"I view research subject as a vital part of enhancing our minds in understanding different concepts while expanding our knowledge and contributing in our growth as a student academically."

– Respondent #3

"I see research as an applied subject that should be taken seriously by the students. It is an area of discovering new knowledge and information..."

– Respondent #1

Conversely, some students experienced doubts and pessimism since they could not fully understand the basics and essence of research, as well as its laborious and complex process. As the respondents expressed:

"...I'm dealing with hard-to-do activities related to research. Honestly, it needs to be a step-by-step method and it will surely take a lot of time to accomplish. Since I am a short-tempered person, I find it hard because the process is too long so that I can't help to finish a good and organized work."

– Respondent #5

"...Having an understanding that research as a whole has different parts and a complex process in a way makes it harder for me to get a good

Table 1. Attitudes towards research of grade 12 senior high school students

	Mean	SD
1. Usefulness of Research for Professional Practice	5.74	1.71
2. Anxiety about Research	2.66	1.68
3. Positive Research Predisposition	4.93	1.45
Overall mean	4.44	

Mean value >4 indicates a positive attitude; mean value <4 indicates a negative attitude. Items in factors 2 were recoded such that the higher the respondents' scores in this domain, the less anxiety in research the respondent's experience.

performance because I can't fully grasp the meaning of it as a whole."

– **Respondent #1**

Interestingly, doubts and pessimism also fueled some students in improving their performance in research and somehow develop a more optimistic view.

"I felt pressured. Teachers and the subject itself help us to adopt high standards in producing a better and efficient research papers. I sometimes stuttered when I felt so nervous talking in front. I also compared myself to other people whenever I felt disappointed. When I tend to make mistakes, it pushed myself not to stop learning from it and be humble."

– **Respondent #7**

"Research is known as a very hard subject that deals with our skills, capacity, and our whole being as a student. I admit that it gives me hardship and breakdowns, but in exchange of that, I admit again that it is the research subject that triggered me to go beyond my limits. Honestly, I'm not into research before, not until this subject made me learn a lot."

– **Respondent #10**

"Research is a challenging subject but research has a lot to offer when it comes to maximizing your potentials mainly on academic writing. It opens your mind and makes you think out of the ordinary."

– **Respondent #3**

2. Relationship Among the Three (3) Domains of Attitude of Grade 12 Senior High School Students Towards Research

Table 2 shows the relationship among the three (3) domains of attitude of Grade 12 senior high school students towards research. The result showed that there was a negative weak correlation between Usefulness of Research for Professional Practice and Anxiety about Research, which means that if students experience high level of anxiety, they may find research less useful. On the other hand, if the students experience low level of anxiety, they may view research as more useful. Nevertheless, since

the correlation was low, it suggests that students' level of anxiety does not completely hamper them from seeing the usefulness of research in their lives, future professions, and research undertakings. In relation, one of the respondents expressed:

"Research is exploratory, I still don't appreciate the purpose of why we are still having a Curriculum like research in Senior High but I know this is also a preparation for College and our future careers, thinking that research has a purpose really affects my performance in my research subject."

– **Respondent #1**

On the other hand, Usefulness of Research for Professional Practice and Positive Research Predisposition had a strong positive correlation which indicates that when the students view research as useful in their future profession, they are also likely to have a positive research disposition.

Similarly, the respondents' positive research predisposition was evident as they further claimed that doing research in senior high school would prepare them for their future research undertakings such as in college. Also, they asserted that they acquired relevant knowledge through research. They also believed:

"Para sa kinang ang research sa SHS ay isang napakalaking tulong para sa amin, kasi through research mas nagiging aware kami sa mga nangyayari sa kapaligiran tulad nang mga social issues at marami pang iba. Dahil din sa research we gained knowledge that would be helpful para sa field or profession na anong kukunin in the future." [For me, research in SHS is a big help for us, because through research, we tend to become more aware of the things happening around us like social issues, and many more. Also, through research, we gained knowledge that would be helpful for the field or profession that we will pursue in the future.]"

– **Respondent #2**

"I find it helpful because it makes the SHS students become more equipped it terms of doing research and SHS is the best time to introduce research as a subject for us (SHS students) to practice and experience what research is all about. Maybe most of the students are struggling doing research but how much more if we have faced thesis and such. Based on my experience in doing research for two years, I learned a lot in many aspects. One example is, it teaches me how to manage pressure in doing defense and it enhances my self-confidence."

– **Respondent #3**

"Of course, ngayong SHS, marami kang natutunan at madadala mo sa college. As a leader alam ko na yung experience at hirap at pagod. I am thankful madadala ko ang aking kaalaman sa college at sa mga susunod pang panahon..." [Of course, in the

Table 2. Pearson correlation of grade 12 senior high school students' R-ATR domains

	1. Usefulness of Research for Professional Practice	2. Anxiety about Research	3. Positive Research Predisposition
1. Usefulness of Research for Professional Practice	1	-.244*	.665**
2. Anxiety about Research	-.244*	1	-.341**
3. Positive Research Predisposition	.665**	-.341**	1

*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (1-tailed)

SHS, I have learned a lot and I may be able to use this knowledge when I enter college. As a leader, I learned from my experiences—the hardships and exhaustion. I am thankful because I will be able to use those learning in the future.”]

– Respondent #8

“Research is vital and must be taught to students before entering college. This subject was prior introduced to us when we were in JHS, specifically grades 9 and 10. I think they must include this subject before SHS and introduce the basic foundations of research. Having knowledge about Research, specifically its methods and uses, is necessary. Because researching (about) specific theories, ideologies, and aspects of today’s culture (brings) progress (to) society. . . ”

– Respondent #7

Lastly, Anxiety about Research and Positive Research Predisposition had a negative medium correlation, which implies that the students’ high level of anxiety may cause a decrease in positive research outlook and vice versa. This finding was somehow parallel with the study of Gallos (2017) which posited that SHS student would likely to have a positive attitude toward research, if he or she minimally experience hardship in doing research.

Therefore, the null hypothesis that there is no significant relationship between the attitudes of Grade 12 senior high school students towards research was rejected as the domains showed low to high degree of relationship with each other.

3. Relationship between the Grades in Practical Research 2 and Attitude of Grade 12 Senior High School Students

Table 3 indicated that Grade 12 students’ attitudes toward research were not significantly correlated with their grades or academic performance in Practical Research 2. It implies that attitude was not a sole indicator of students’ performance in research as other factors may also implicate academic performance such as teachers’ quality and quality of instruction (Andaya, 2014), curriculum, instructional strategies, school context, and facilities (Andaya, 2016). Additionally, the “teacher factor” ranked first among other factors such as time management, loaded school work, and financial problem, lack of interest in research, anxiety in conducting research, the relevance of research to life/studies, and family concerns (Garancho and Marpa, 2019).

Table 3. Pearson correlation of grade 12 Senior High School Students’ Grades in Practical Research 2 and Attitude Toward Research Scale Domains

	Grades in PR 2
1. Usefulness of Research for Professional Practice	.017
2. Anxiety about Research	-.024
3. Positive Research Predisposition	.075

Therefore, the study failed to reject the null hypothesis that there is no significant relationship between the attitudes and grades of Grade 12 senior high school students as attitudes toward research did not show a significant relationship with students’ grades in Practical Research 2.

Conclusion and Recommendation

The following conclusions were formulated anchored on the results of the study:

1. Grade 12 SHS students had a generally positive attitude towards research. They perceived research as significant to their future professions and undertakings. Albeit, students still experienced high level of anxiety towards research. Students’ high level of anxiety may cause a decrease in positive research outlook and may find research less useful and vice versa. Yet, statistical correlation (low or weak correlation) suggests that students’ level of anxiety in research does not completely impede them from seeing its usefulness to their lives, future professions, and research undertakings
2. The students claimed to experience anxiety since they could not fully understand the basics and essence of research, as well as its laborious and complex process. Interestingly, doubts and pessimism also fueled some students to improve their performance in research and somehow develop a more optimistic view.
3. When the students view research as useful to their future profession or undertakings, they are also likely to have a positive research predisposition.
4. Grade 12 students’ attitudes towards research is not significantly correlated with their grades or academic perfor-

mance in Practical Research 2. Various factors contribute to students' academic performance in research.

The following recommendations were formulated anchored on the results of the study:

1. Research teachers may devise new strategies to lessen students' anxiety towards research. Research must be enjoyed by the students and not become a burden for them. Additionally, teaching of research shall be situated in real-life contexts for the students to realize its relevance.
2. Further studies shall be pursued relative to identifying other factors that affect senior high school students' (both grade 11 and 12) academic performance in Practical Research subject. A qualitative exploration on the same topic may also be considered.
3. The results yielded by this research may be used as a basis for a more efficient delivery of research-related courses in senior high school.

References

- Andaya, O. (2016). Factors that affect the academic performance of indigenous people (ip) students of philippine normal university-north luzon. *Asia Pacific Journal of Research*, 2(36):108–115.
- Andaya, O. J. F. (2014). Factors that affect mathematics achievements of students of philippine normal university-isabela campus. *Researchers World Journal of Arts, Science and Commerce*, 5(4):84–90.
- Belgrave, K. L. and Jules, J. E. (2015). Students' attitudes towards research: Applying best practice principles through a student-centred approach. Unpublished thesis.
- DepEd (2017). D.O. No. 16, S. 2017. Research management guidelines. Accessed from: https://www.deped.gov.ph/wp-content/uploads/2017/03/DO_s2017_016.pdf.
- Ellis, R. R. (2008). *Understanding Second Language Acquisition*. New York, NY Oxford University Press.
- Fishbein, M. and Ajzen, I. (1980). Understanding attitudes and predicting social behaviour.
- Gallos, B. (2017). Senior high school students' attitudes towards research. Available at SSRN: <https://ssrn.com/abstract=3263496> or <http://dx.doi.org/10.2139/ssrn.3263496>.
- Garancho, G. A. G. and Marpa, E. P. (2019). Teacher education students' attitude towards research studies: a case study. *Rangsit Journal of Educational Studies*, 6(1):12–25.
- Kakupa, P. and Xue, H. (2019). Students' attitudes towards research: A study of graduate education students at a chinese normal university. *Educational Process: International Journal*, 8(2):97–110.
- Lougheed, L. W., Breault, A., and Lank, D. B. (1999). Estimating statistical power to evaluate ongoing waterfowl population monitoring. *The Journal of wildlife management*, pages 1359–1369.
- Munir, N. and Bolderston, A. (2009). Perceptions and attitudes toward conducting research: A nuclear medicine student perspective. *Journal of medical imaging and radiation sciences*, 40(4):183–189.
- Muthuswamy, P., Vanitha, R., Suganthan, C., and Ramesh, P. (2017). A study on attitude towards research among the doctoral students. *International Journal of Civil Engineering and Technology*, 8(11):811–823.
- Oguan Jr, F. E., Bernal, M. M., and Pinca, M. C. D. (2014). Attitude and anxiety towards research, its influence on the students' achievement in the course. *Asian Journal of Management Sciences & Education*, 3(4):165–172.
- Papanastasiou, E. C. (2005). Factor structure of the "attitudes toward research" scale. *Statistics education research journal*, 4(1):16–26.
- Papanastasiou, E. C. (2014). Revised-attitudes toward research scale (r-atr); a first look at its psychometric properties. *Journal of research in education*, 24(2):146–159.
- Reynolds, A. J. and Walberg, H. J. (1992). A structural model of science achievement and attitude: An extension to high school. *Journal of educational Psychology*, 84(3):371.
- Steidl, R. J., Hayes, J. P., and Schaubert, E. (1997). Statistical power analysis in wildlife research. *The Journal of Wildlife Management*, pages 270–279.