Reality Bites: Secondary Students Facing the Demand for Research Skills

Teody Lester V. Panela

College of Education, Northwest Samar State University, Philippines

ABSTRACT

Research is a fundamental function of every institution. What does it take to learning research? Does a student prioritize learning research or gives more emphasis to non-research related activities? This research study employed a Two-Tiered Research Design to identify and explore the duties, and determined the current research skills among students. Tier I involved the conduct of focus group discussion using a scripted questionnaire to further assess the respondents' consistency in their answers. Tier II involved survey research design, specifically in-person or face-to-face survey research design to report the students' current research skills and level of comfort in conducting research and teaching the research subject. From the data analyses, it was found out that students' perceived level of research skill as well as their comfort level is low. The results were significantly used in the creation of online research manual for students and introduction of qualitative research design as a potential area to explore and improve to. As it was revealed in the study, concerned agency should provide support and development program for the students especially in areas of research. The agency should invest into innovative research activities for the improvement of research skills of students.

KEYWORDS : Research Skill, Attitude, Research, Secondary Student, Research Manual

I.   INTRODUCTION

The need to develop students' scientific research skills during their high school studies is an answer to the challenges faced in the secondary education level (Brew, 2013). The goal is to have competitive students with strong thinking skills, intellectual analysis, creativity and flexibility, and the capability to create and replicate knowledge. As a learning process, research resulted from conception during the freshmen year of students and not as culmination of their academic journey. The reality is, most of the students start their training in research during their postgraduate studies and not from the secondary level that makes the students think that research is more like a requirement to pass and eventually complete their studies that a foundation of their high school studies. Research is a fundamental function of every institution and is not only linked to teachers but also to the learning of the students (Rojas, 2007). The research-based learning is one of the strategies best suited to develop research skills, and learning is built on real scenarios that link teachers and students in a knowledge-building process inspired by the process of scientific research. Benefits from participation in research projects involve the nurturing of a scientific mentality and the need to become scientist in the future (Hunter, Laursen, & Seymour, 2005). Moreover, students indicated that getting immersed in research projects facilitated their learning (Ward, Bennett, & Bauer, 2003).But with the question remains, what does it take to learn research? Does a student prioritizes learning research or gives more emphasis to non-research related activities? These are the questions that made me delve on the topic of learning of the research subject and how are they coping up with the demands of producing quality researches. From the recently concluded Division Science Fair, the number of participating schools does not add up to the expected number of schools. Out of 81 expected high schools, only ten (10) were able to join. The number is quite alarming, considering that teachers expected to coach students were trained on crafting science investigatory projects. Finally, there is a need to look closely into how the student's utilized learning received related to crafting researches. The present study is, in the sense, a means by which the it will respond to the need of increasing the outputs generated from researches by assessing the perceptions and current research skills of high school students for School Year 2019-2020, hence the conduct of the study.

II. REVIEW OF LITERATURE

A thorough knowledge of research can equip a learner with the skills among other – creative thinking, making inferences, critical thinking, and analytical reading but just the same, cannot be activated without teacher's prodding (Dapiawen, n.d.). In like manner, the need for a good understanding of research principles and developing research projects is increasingly required for teacher (Moriarty, 2018). It is important to know that one cannot teach research if he/she is incapable of doing research. Teachers must be equipped with necessary research know-how to impart fundamental information to students. Motivation at an early age could trigger a positive academic development in the field of research. According to (Morris, 2018), teachers need to navigate their student to hone the following information literacy skills:

1.   Clarify – information one is looking for, keywords and synonyms.
2.   Search – simple terms, be more specific and use quotation mark.
3.   Delve – look beyond the first few results.
4.   Evaluate – do not believe everything you read.
5.   Cite – write information in own words or quote and say who and where it is from.

The need for the students to do research is also a necessity. Salleh (2014) said that students should do research because it can help them face new challenges and become better practitioners. He further expanded the idea that research conducted by students would give them broader outcomes, broader pedagogies, increase learning and development, produce knowledge and improve practice, and increase building capacity for research.To sum it up, the above literature discussed the benefits of doing research for the learner. Not only did it focus on the effects but also to the overall personal, professional and pedagogical development of an individual in relation to research management. The foregoing studies help the researchers in establishing the rationale and the concepts in the conduct of the study.

III. METHODOLOGY

This research study employed a Two-Tiered Research Design to determine the current research skills among secondary school teachers. Tier I involved the conduct of focus group discussion using a scripted questionnaire to further assess the respondents' consistency in their answers. Respondents were randomly selected to be a part of the focus group. Such method also collected feedbacks from the respondents. Responses were recorded and transcribed for comparison. Tier II involved survey research design, specifically in-person or face-to-face survey research design to report the students' current research skills and level of comfort in conducting research.

This research study involved two main variables namely, the students' research skills and level of comfort in performing research. The variables were collected with the aid of a questionnaire, semi-structured interview, focus group discussion, and field observation of the respondents.This research study was conducted in Eastern Visayas (Region VIII), Philippines. Secondary school students served as respondents for the study. This study resorted to stratified random sampling in recruiting students for the two tiers. The goal was to have all 50 students as respondents for the tier I of the study. This research study employed a Two-Tiered Research Design to determine the current research skills among students.Tier I involved the conduct of focus group discussion using a scripted questionnaire to further assess the respondents' consistency in their answers. Respondents were randomly selected to be a part of the focus group. Such method also collected feedbacks from the respondents. Responses were recorded and transcribed for comparison.Tier II involved survey research design, specifically in-person or face-to-face survey research design to report the teachers' current research skills and level of comfort in conducting research.For Tier 1, coding and thematic analysis of qualitative data were used. The following steps represent Colaizzi process for phenomenological data analysis (Speziale, Streubert, & Carpenter, 2010). (1) Each transcript should be read and re-read to provide a general understanding of the material as a whole. (2) Relevant statements pertaining to the phenomenon under review should be extracted for each transcript. These statements must be documented on a separate page note sheet and line numbers. (3) Meaning should be formulated from these significant statements. (4) The formulated meanings should be sorted in categories, cluster of themes, and subthemes. (5) It is important to incorporate the results of the analysis into an exhaustive summary of the phenomenon under study. (6) A definition of the fundamental structure of the phenomenon. (7) Eventually, the study participants could seek confirmation of the findings in order to compare the descriptive results of the researchers with their experiences.For Tier 2, to identify response rate, frequency count, weighted mean, percentage were used. To identify the degree of correlation of the three main variables, Pearson's R Product Moment Correlation was utilized thoughtfully.The statistical tools mentioned helped in answering the following null hypotheses at 0.05 level of significance: There is no significant relationship on the student-respondents' level of research skills and their level of comfort in conducting research.The data analysis was facilitated using Microsoft Excel Data Analysis and SPSS.

IV.   RESULTS AND DISCUSSION

Based on Table 1, the students "rarely" practiced the following skills, five skills with weighted means ranging from 1.52 to 1.70, respectively. Statement number 17 obtained the lowest weighted mean with statements stating: "I am confident in producing a well-researched work." These five statements are ranked from the least practiced.The student-respondents viewed themselves as less confident in producing a research paper. While some of them find it hard to even start a research output. Others felt that they lack the capability to shared information to target members of the society comes the end of the study, citing references and not even aware of copyrights.

Table 1. Level Research Skills of Secondary School Students

Statements	Mean	Interpretation
17. I am confident in producing a well-research work.	1.52	Rarely
1. I write down the purpose of collecting information before identifying the sources for collecting information.	1.57	Rarely
22. I am capable of disseminating relevant and beneficial information to the target groups.	1.58	Rarely
23. I know how to cite references as per standard procedure.	1.63	Rarely
24. I am aware of copyrights and plagiarism policy.	1.70	Rarely

In relation to the findings reflected above, rarity in the utilization of the skills is illustrated in the following participants' statements:

(1)   "Makuri para ha akonna mag-himohan research kay diri man sugadkadati."
        (It is hard for me to create a research study because I am not that good.)
(2)   "Diritalagaakodati mag-research tungodnadiri man maupayakopundasyonhiton."
        (I am not really good in doing research since my foundation is not that good)
(3)   "Gin-kopya man la namonsa internet tanan, diri man ngani gin-kikitahanamon teacher."
        (We just copy everything from the internet, our teacher does not even check them)
(4)   "Waray man malainhannagkopya ha internet, kay kuntadiri man ngeanpwede, gintatanggal nala nira."
        (There is nothing wrong with copying from the internet, if they don't want such incidents, they should remove it)
(5)   "Mahuman man ngani, perowaray man gamit kay abot la ha papel."
        (Though it is finished [talking about completed researches], it is still useless if it is just in paper)
(6)   "Waray gamit an research kay diri man itonakakabulig ha akon, maskiamonpag-himo, nag-babayad kami."
        (Research is useless since it does not help me or do me any good, even our paper, we payed someone to make it)

The student's comfort level in conducting research also comes into play as it showed a significant finding. Most of the students are not comfortable in learning research. The students have "low" comfort level in terms of their learning, physical and environmental comfort ranging from 1.60 to 1.90, respectively.

Table 2. Comfort Level in Research among Secondary School Students

Dimensions	Mean	Interpretation
Learning Comfort	1.60	Low
Physical Comfort	1.85	Low
Environmental Comfort	1.90	Low
Grand Mean	**1.78**	
Interpretation	**Low**	

In relation to the findings reflected above, level of comfort is illustrated in the following participants' statements:

(1) "Waray klaro an research para ha akon, diringani hiya mahimo-himo."
   (Research is unclear to me, I don't even have the urge to create one.)
(2) "Waray naupay an topic, waray pa gudbuyodnalibromaski guide nala."
   (The topic [referring to research is not good, not to mention, no available books or even a guide for the same.)
(3) "Pa iba-iba an impormasyonkada teacher, dirinalugodmaupay mag himohan research."
   (With different information coming from each teacher, I felt discouraged doing research.)
(4) "Mabutlawnangani an kinabuhihanestudyante, madungan pa inina research, diri man nganiimportante."
   (It is already physically taxing to be a student, adding research into the mix seems not important.)
(5) "Mag-reresearch ka perokulangnamanlibrotaposgamit, waray la gamit."
   (You are going to conduct research but there's scarcity of books and materials, seems useless.)
(6) "Diringaninaayon an usanasenadorhan research, ako pa kaya?"
   (If a certain senator doesn't like research, so why would I.)

Table 3 discussed the correlation between the two main variables of the study. As shown on the table, correlation is >.700 with 50 degrees of freedom, so all are highly significant. Since the computed p-value is less than .05 level of significance, therefore the null hypothesis is rejected. Therefore, there is a significant relationship on the student-respondents' level of research skills and their level of comfort in learning and doing research.

Table 3. Relationship between Level of Research Skills and Level of Comfort among Secondary School Students

		Comfort Level in Research
Level of Research Skills	Pearson Correlation	.734
	Sig. (2-tailed)	.041
	N	50

V. CONCLUSION

The following conclusions were drawn based from the findings above:
1. The students' level of research skill is low.
2. The students' comfort level in learning and doing research is low.
3. There is a significant relationship on the student-respondents' level of research skills and their level of comfort in learning and doing research

VI. RECOMMENDATIONS

Based on the findings of the study the following were the recommendations:
1. As it was revealed in the study, concerned agency should provide support and development program for the student especially in areas of research.
2. The agency should also focus on innovative research activities.
3. Creation of a centralized research manual should be considered

REFERENCES

[1] Brew, A. (2013, November). Understanding the Scope of Undergraduate Research: A Framework for Curricular and Pedagogical Decision-Making. *The International Journal of Higher Ediucation and Educational Planning*, 603-618. Retrieved from https://eric.ed.gov/?id=EJ1036276

[2] Central Washington University. (2015). *CWU Teacher Time Study: How Washington Public School Teachers Spend Their Work Days*. Retrieved from Central Washington University: https://www.cwu.edu/sites/default/files/images/teachertimestudy.pdf.

[3] Dapiawen, A. A. (n.d.). *Research Skills of the Students of the School of Teacher Education*. Retrieved from University of Baguio: htttp://www.uabguio.edu/rdc/?p=872

[4] Hunter, A.-B., Laursen, S. L., & Seymour, E. (2005). Becoming a Scientist: The Role of Undergraduate Research in Students' Cognitive, Personal, and Professional Development. *Science Education, 91*, 36-74. doi:DOI 10.1002/sce.20173

[5] Moriarty, B. (2018). *Research Skills for Teachers: From Research Question to Research Design.* Allen & Unwin Book Publishers.

[6] Morris, K. (2018, February 23). *Five Tips for Teaching students How To Research and Filter Information*. Retrieved from Kathleen A. Morris: www.kathleenamorris.com/2018/02/23/research-filter/

[7] Ozgelen, S. (2012). Students' Science Process Skills within a Cognitive Domain Framework. *Eurasia Journal of Mathematics, Science and Technology Education, 8*(4), 283-292. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.1000.7197&rep=rep1&type=pdf

[8] Rojas, N. N. (2007). Desarrollo de Habilidades para la Investigación (DHIN). *Revisita Iberoamericana de Educacion, 44*(6), 6-15. Retrieved from https://rieoei.org/RIE/article/view/2200

[9] Salleh, H. (2014, February). *Why Should Teachers Do Research?* Retrieved from SingTeach : http://www.singteach.nie.edu.sg/issue46-bigidea/

[10] Savery, J., & Duffy, T. M. (1996). Problem Based Learning: An Instructional Model and Its Constructivist Framework. In B. G. Wilson, *Designing Constructivist Learning Environments.* Englewood Cliffs, NJ: Educational Technology Publications.

[11] Speziale, H. S., Streubert, H. J., & Carpenter, D. R. (2010). *Qualitative Research in Nursing: Advancing the Humanistic Imperative* (5th ed.). Lippincott Williams and Wilkins.

[12] Ward, C., Bennett, J. S., & Bauer, K. W. (2003, January). *Content Analysis of Undergraduate Research Student Evaluations*. Retrieved from Research Gate: https://www.researchgate.net/publication/253558456_Content_analysis_of_undergraduate_research_student_evaluations