

Effect of 21st century skills to research writing abilities of senior high school students

Aporbo, Russel

russel_aporbo@umindanao.edu.ph

Faculty-University of Mindanao Taqum College, Taqum City, Davao del Norte, 8100, Philippines

Abstract

This descriptive correlation study aimed to describe the level of 21st century skills of senior high school students and its effect on the research writing abilities of senior high school teachers in Datu Balang National High School. Two (2) sets of survey questionnaire were administered to the target respondents to measure their 21st century skills and research writing abilities. Data were treated using mean and pearson-r correlation to attain the objective of the study with likert scale to identify the level of both 21st century skills and research writing abilities. Data revealed that the 21st century skills got a mean rating of 3.09 which means these were utilized by respondents in moderate occasions. The research writing skills also got 2.89 mean rating which also indicates that these were utilized by senior high school students moderately. The coefficient of determination got 0.7056 which means that the null hypothesis is rejected and that the level of 21st century skills has significant effect on the research writing abilities of senior high school students. School administrators may take concern about the needs of students in their learning process; teachers may further explain or evaluate their past lessons for additional knowledge in the given discussion to the students; teachers may taught how to gather the main ideas and important information in their presentation; parents may provide the necessary things the students need to enhance their engagement in learning; students may research for a comprehensive meaning of a given topic in 21st century skills and research writing; reading, searching, will help to understand the difficult topic in research subject.

Keywords: 21st century skills, research writing abilities, senior high school students

I. Introduction

Research writing today is necessary because this is now requirement even in basic education. The senior high school students today are required to develop and conduct research as partial requirements before graduating senior high school. Many students often overlook the importance of writing a research paper. They take it as a burden. They don't realize that it is an opportunity to acquire skills that will be essential to whatever future career plans they may have especially now that the global context requires a productive research culture that can work along with the newest trends in education. They seldom remember that a research paper tests the student's ability to search, collect information, write, compile, analyze and interpret a topic.

After the opening of classes, teachers would often observe that the previously thrill-filled classroom is painted with boredom, passiveness, and lack of interest and motivation when they start teaching the rigors of research paper writing. It is also observed that Senior High School students, when given a topic on research writing, are not confident and are unsettled to further the writing activity itself. Sometimes, it is the reason of not being able to advance in terms of subject accomplishments that may lead to getting a failing grade in a specific subject.

However, in Africa unfortunately, here is only little research investment in productivity growth of the nation. For example, in 2017 when worldwide expenditure on research was 1.77% of the total global gross domestic product, Kenya spent 0.1% of its GDP and South Africa spent 0.76% of its GDP on research. Declining investment in research has been cited as a reason for deteriorating research quality on the continent. In medicine, only 10% of research is performed in developing countries and only 2% of the 3000 journals from the developing world are listed (Medline, 2018).

In the Philippines, research as a field which is undervalued in the Philippines the new committee chairman on Science and Technology during the discussion on the proposed Magna Carta for Scientist. In the K to 12 Curriculum, academic writing is now a vital part of the continuous summative assessments in most academic courses in the Senior High School. Senior High School students are required to present write-ups of scientific inquiry process, draft experiments, business concepts, marketing ideas, essay on current social issues, critique papers, project plans, livelihood projects and other such summative assessments. More so, transparent in the Curriculum Guide for Senior High School is the inclusion of the subjects Practical Research 1 – Qualitative Research, Practical Research 2 – Quantitative Research and Inquiries, Investigations and Immersion that require Senior High School students to master research writing and that Senior High School teachers are indebted to discuss it in a more creative (Aquino, 2016).

In Datu Balang National High School, the Senior High School students are hesitant to engage research. The research teacher reported that no research papers submitted in hard bound during the pandemic period, in spite of the virtual meet up with students. He explains further that there are numbers of difficulties experienced by the student in

writing the research proposals and projects such as: difficulty in deciding the topic for research, lack of good knowledge of the methodology, inability of finding modern, specialized and related references, lack of interest in research, and especially, poor internet connection. There are many reasons students avoid writing. They struggle to organize and use mechanics of writing. They are slow and inefficient in retrieving the right word to express an idea. They struggle to develop their ideas fluently to complete their research work

1.1 Theoretical lens

This study is anchored on the concept of Tracing research trends of 21st - century learning skills (British Journal of Educational Technology 2019). Recently, learning technologies have become a pivotal constituent of teaching – learning processes. Contemporary studies indicate that in order to effectively utilize these technologies, instructors and learners alike must master a range of cognitive and socio - emotional competencies, commonly termed digital literacy competencies or 21st century skills. Based on well - established frameworks of digital literacy competencies, this research examined seven skills: Collaboration, Communication, Creativity, Critical thinking, (2020). The research skills as cited by the National University of Ireland (2022) are refer to the ability to locate, extract, organize and evaluate information.

Another study on 21st Century Skills (2013), twenty-first century skills of communication, collaboration, critical thinking, and creativity (4Cs) are considered essential for achievement in today's society and are best taught within the context of core subject areas. Researchers know little about the prevalence of twenty-first century based activities in the classroom, despite a report citing a survey of chief executive officers of the global marketplace which stated the need for individuals who possess twenty-first century skills. Research skills refer to the ability to locate, extract, organize, and evaluate information that is relevant to a particular topic (Betroot, 2020).

1.2. Research Questions

This study aims to determine whether the Datu Balong Senior High School students are significantly affected in their lacking capability in academic writings, especially in making a research. Also if they're ready to enter college with these inabilities.

Specifically, it seeks to answer these questions:

1. What is the level of 21st century skills in terms of:
 - 1.1 Collaboration ,
 - 1.2 Critical Thinking,
 - 1.3 Creativity, and
 - 1.4 Communication
2. What is the level of research writing of the students in terms of:
 - 2.1 Locate;
 - 2.2 Organize; and
 - 2.3 Evaluate information ?
3. Is there a significant relationship between the 21st century skills and research writing of grade 12 students of Datu Balong National High School?

2. Method

2.1 Research Design

This study engages on quantitative non-experimental design, relies on interpretation, observation or interactions to come into conclusion. Method to gather data, facts and information needed of study. It explores on the levels of the independent and dependent variables of 21st Century and on Research writing performance of the Grade 12 students of Datu Balong National High School. Furthermore, it assesses in the prevailing relationship between the 21st Century and the research performance of Grade 12 students of Datu Balong National High School.

2.2 Research Subject

The respondents of this study are the Grade 12 students of Datu Balong National High School. A simple random sampling was used to determine the respondents of this study. To identify the percentage of students who are having difficulties on the 21st Century skills and research writing, we interviewed the Grade 12 students virtually. Table 1 shows the distribution of respondents. The respondents of grade 12 students in Datu Balong National High School 67 total population composed of 17 TVL students and 24 GAS students.

GRADE 12	POPULATION	SAMPLE POPULATION
Gas A	29	24
Gas B	32	26
TVL	20	17
TOTAL	81	67

Table 1
Distribution of Respondent

2.3 Research Instruments

The study composes downloaded edited and modified questionnaire for the 21st century skills of learners. The first set questionnaire is the 21st century skills of learners with the indicators: critical thinking, communication skills. Questionnaire will be used in this study. The first set will be a researcher- based questionnaire. This questionnaire determined the extent of the students who struggled in the 21st century skills and on academic performance.

Parameter limits	Descriptive Equivalent	Interpretation
4.50 -5.00	Very High	This indicates that the research writing ability is observed in all occasions.
3.50 – 4.49	High	This indicates that the research writing ability is observed in most occasions.
2.50 – 3.49	Moderate	This indicates that the research writing ability is observed in moderate occasions.
1.50 – 2.49	Low	This indicates that the research writing ability is rarely in occasions.
1.00 – 1.49	Very Low	This indicates that the research writing ability is not observed in occasions.

The responses for research writing ability of Grade 12 students in Datu Balong National High School are recorded accordingly. Likert scale stated below is the basis of responses in all items of each indicator. This provided a typical index of the statements in the said questionnaire.

Parameter limits	Descriptive Equivalent	Interpretation
4.50 -5.00	Very High	This indicates that the 21 st century skills are utilized in all occasions.
3.50 – 4.49	High	This indicates that the 21 st century skills are utilized in most occasions.
2.50 – 3.49	Moderate	This indicates that 21 st century skills are utilized in moderate occasions.
1.50 – 2.49	Low	This indicates that 21 st century skills are rarely utilized.
1.00 – 1.49	Very Low	This indicates that the 21 st century skills are not utilized.

Data Gathering Procedure

Appropriate instructions were accorded to the respondents on how to answer the questionnaires.

Seeking Permission for the Conduct Study. The researcher asked permission from the School Head of the school to conduct a study. After the approval of the School Head a letter asking permission to conduct a study was sent to the Subject Teacher of the researchers as well the subject teachers of the participants that the researchers will personally conduct survey and collect data.

Administration and Retrieval of Questionnaire. After the request was granted, the researchers personally conduct the survey questionnaire to the respondents of the study. Prior to the answering of questionnaires, instruction was given to ensure honest, clear and complete answer. Questions and clarifications about the items were entertained. After the respondents answered the questionnaires, researchers personally retrieved them to ensure complete retrieval.

Checking, Collating and Processing of Data. On the same day, the questionnaires will be checked and ensured one hundred percent retrieval. Checking of questionnaires will be done based on the provided answers. Scores will be translated as provided in the instrument in correspond to each descriptive equivalent.

Statistical Treatment of Data. The data will be gathered, tabulated, analyzed and interpreted using the appropriate statistical tools as follow:

Mean. This was used to describe the level of severity in student's lacking ability in 21st century skills and research writing.

Pearson-r. The pearson product-moment correlation which is the most widely used measure of correlation. This statistical tool was used to evaluate the significant relationship between the level of the students engagement in academic performance among grade 12 student's

3. Results and Discussion

Level of 21st Century Skills

Table 2 presents the level of 21st century skills. Critical Thinking Skills got the highest mean of 3.18 with a description of Moderate. It is followed by Communication Skills that got a mean of 3.16 with a description of Moderate. The lowest mean of 3.00 with a description of Moderate is the Organize Skills. The whole mean of the level of student's ability in 21st Century Skills got 3.09 with a description of Moderate.

This implies that less students has the ability of using the 21st century skills which are more important to students today than they have ever been. They not only provide a framework for successful classroom learning, but these skills also ensure students' ability to thrive in a world where change is constant and learning never stops. These 21st century skills are also critically important for the well-being of our country.

This is supported by the study of Chalkidaki (2018) that the current literature examines the discussion of 21st century skills in primary education. According to the literature review research questions, a sample of texts satisfying the predetermined inclusion criteria ($n = 40$) was analyzed with the goals of synthesizing the proposed frameworks that are most cited by authors interested in 21st century skills and competencies in primary education ($n = 6$) and the dimensions of the skills and competencies most emphasized and researched in the specific context. The findings revealed a particular interest in skills and competencies related to the conditions of the development of information and communications technology, globalization, and the need for innovation. However, a need for research focusing specifically on primary education was identified.

Table 2
21st Century Skills of Senior High School Students

ITEMS	MEAN	DESCRIPTION
Collaboration Skills	3.03	Moderate
Critical Thinking Skills	3.18	Moderate
Creativity Skills	3.00	Moderate
Communication Skills	3.16	Moderate
OVERALL	3.09	MODERATE

Research Writing Skills and Use of Writing Strategies

Table 3 shows the student's Research Writing Skills and Use of Writing Strategies. Organize got the highest mean of 3.07 with a description of Moderate. It is followed by Evaluate with a mean of 3.04 with a description of Moderate. The lowest mean of 2.70 is the Locate with a description of Moderate.

This means that the Grade 12 Student's of Datu Balang National High School are not really profound in Research Writing Skills and in Writing Strategies. The mean of the results of the survey clearly presented us that the students are lacking the ability of the Research Writing Skills and Writing Strategies. The result has shown us that we need to enhance the students knowledge and ability in Research Writing Skills and Writing Strategies.

This is supported by the ResearchCraze.com (2017) they stated that writing is required for the completion of a research paper, so it assists you in developing good writing skills. Writing a research paper teaches you about the process of scientific discovery and how to document it so that it can be shared with others.

By practicing research you will be taught the fundamentals of writing a thesis, dissertation, or future scholarly essays. Writing a research report prepares you for future scholarly works. The student not only learns the research process, which includes selecting a topic, reviewing the literature, collecting data, and analyzing data, but it also teaches you how to find scientific answers to questions.

Writing a research paper on your own gives you a sense of independence and satisfaction that you have accomplished something. It also satisfies your curiosity and gives you pleasure to find answers to your questions. They also stated that research writing also improves your critical thinking skills and makes you a more creative thinker. When a student writes sources with references, he or she must consider who wrote it, where it was published, and when it was written. These questions assist the student in developing critical thinking and reading abilities

Table 3
Research Writing Skills and Use of Writing Strategies

ITEMS	MEAN	DESCRIPTION
Locate	2.70	Moderate
Extract	2.73	Moderate
Organize	3.07	Moderate
Evaluate	3.04	Moderate
OVERALL	2.89	MODERATE

Relationship between 21st Century Skills and Research Writing

Table 4 shows the significant relationship between the 21st century skills and writing skills. The coefficient of 21st century skills and writing skills is 0.7056. This indicates a high positive correlation. The computed p-value is 0.00 is less than $\alpha=0.5$ therefore, the null hypothesis is rejected and alternative hypothesis accepted.

Table 4. Significant Relationship between 21st century skills and writing skills

Variable	r-value	Interpretation	P-Value $\alpha=0.05$	Decision	Conclusion Relationship
21 ST Century Skills	0.84	Very High Positive Correlation	0.00	Reject	Significant
Writing Skills					
Coefficient of Determination (r^2) = 0.7056					

4. Conclusion

The findings revealed that the overall mean score obtain on the 21st century skills results to 3.09 with a descriptive equivalent of moderate with indicators: collaboration skills, critical thinking skills, creativity skills, and communication skills. The research writing reach to a mean of 2.89 with a descriptive equivalent of moderate with indicators: locate, extract, organize, and evaluate. There is a significant relationship between the 21st century skills and research writing of grade 12 students of Datu Balang National High School.

Based on the findings of the study, the following conclusions were drawn: The level of 21st century skills is moderate; the level of research writing is moderate; there is a significant relationship between the 21st century skills and research writing ; the 21st century skills significantly influence students research writing /making ability.

After careful review of the findings and conclusions of the study, the following recommendations are given: school administrators may take concern about the needs of students in their learning process; teachers may further explain or evaluate their past lessons for additional knowledge in the given discussion to the students; teachers may taught how to gather the main ideas and important information in their presentation; parents may provide the necessary things the students need to enhance their engagement in learning; students may research for a comprehensive meaning of a given topic in 21st century skills and research writing; reading, searching, will help to understand the difficult topic in research subject.

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