

Students' Acceptability of the START Approach as an Extension Tool

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Abstract

In this study, the researcher determined the level of acceptability by students of the START Approach as utilized in a community extension. To do this, the researcher identified the attributes of the approach based on the literature and developed a survey questionnaire. The survey questionnaire was validated by experts in the field and was administered digitally to target respondents in January 2024. Salient findings showed that students rated the approach as highly acceptable in general, with a weighted mean of 3.57 in a scale of 4. The students claimed that the approach is flexible, practical, and doable, among other favorable attributes. Further, they claimed that the approach could be used to teach science investigatory projects. This pioneering approach has been developed as a potential extension tool with a wide range of areas of utilization even in fisheries research education.

Keywords: Acceptability, Extension, Students, START Approach

INTRODUCTION

Effective teaching of a content-based subject primarily requires the teacher to have a deep understanding of the subject matter. In contrast, teaching a skill-based subject demands not only subject expertise but also proficiency in pedagogical strategies and techniques to effectively guide students in acquiring the skill. Research, as a discipline, is skill-based rather than content-based, encompassing several critical skills essential for lifelong learning, such as creativity, critical thinking, and problem-solving. One key skill students must develop is the ability to identify and formulate a research topic, a challenge that has been underexplored in existing studies. Most of the current literature focuses on teaching the structure of research papers across various disciplines, typically covering chapters 1 to 5. Consequently, the process of formulating a research topic remains a significant challenge for educators in research-based subjects.

Contextual teaching and practical learning approaches are increasingly recognized as effective tools for enhancing educational outcomes. These approaches help students construct their own knowledge, develop critical thinking skills, and improve practical abilities (Tari & Rosana, 2019). The unified approach in practical research through contextualization adapts teaching methods to meet societal needs and student contexts (Moral, 2021). By linking research to practice and encouraging reflection, these approaches not only improve the quality of learning but also inspire changes in classroom practices, making them valuable tools for addressing the demands of 21st-century education (Tari & Rosana, 2019; Oranga & Gisore, 2023).

Recent studies have explored innovative approaches to teaching research skills in senior high schools. Integrative tasks and project-based learning have been found to enhance students' research competencies and make research work easier (Layoc, 2023). Instructional scaffolding, particularly using correction symbols, has shown significant improvement in students' research writing skills (Martinez, 2019).

Instructional innovation in formal education encompasses various approaches to enhance teaching and learning. Innovative instructional strategies, such as computer-based simulations and behaviorally based systems, have been developed to address the changing needs of diverse student populations (Kozma, 1985).

Research on teaching in formal education in developing countries reveals significant differences compared to developed nations. Teaching methods typically emphasize knowledge transmission, adherence to prescribed curricula, and summative assessments (Oplatka, 2007). Developed countries, in contrast, are moving towards more specialized and individualized education, incorporating technology and active learning approaches (Mohammad Almasi & Abedini, 2020). These findings have implications for policy-making and curriculum development to foster a research culture among high school students in the Philippines. Instructional innovation and practical tools in teaching are very important. Further, acceptability judgments may differ from actual acceptance during use, highlighting the need for both pre-implementation evaluations and post-implementation studies to ensure the successful integration of new educational technologies (Alexandre et al., 2021). One the approaches that can be used in the teaching is START Approach, a simplified method for generating research topics, which demonstrates high applicability and thought continuity (Camara, 2019). Further, in the study of Camara et al., (2020), it was found that a consistent 2% of the student-respondents, who are college students at the time of data-collection and are K to 12 graduates, (n=1,250) did not participate in writing or defending a research paper individually or even in groups when they were in high school. Further, 623 or 49.8% of the respondents did not have any experience in writing an individual research paper. While it is true that doing research enhances critical thinking and problem solving, a number of Filipino students did not have this opportunity during their high school years.

Existing studies, while addressing research skills more broadly, offer insights into perceived competencies but do not directly focus on topic formulation. For example, Camara et al. (2021) conducted a gendered analysis of perceived competence in research writing, revealing that both male and female college students rated themselves as highly competent in

writing research titles (Males: $M = 3.50$; Females: $M = 3.64$). However, this study did not assess their perceived ability to formulate a research topic.

Usability testing, which measures program need and applicability, is an important aspect of acceptability evaluation (Gould et al., 2008). Key factors influencing acceptability include ease of use, utility, and aesthetics (Alexandre et al., 2021). With this, the present research is relevant and timely.

Based on the background and research gap, this study aims to present the acceptability of the START Approach by the students. The findings from this study will make contributions towards teaching and learning in the 21st century skills. The 21st century skills are very important to be addressed in the teaching and learning process.

METHOD

The researcher utilized a survey method to collect the data. The survey was administered from 2 January to 30 January, 2024 from Science, Technology, and Engineering (STE) students in senior high schools in Philippines. By 31 January 2024, the survey was closed, and the data was presented to the school administration for validation and verification. The data is accessible at the google link. It must be mentioned that this article is an excerpt of an initial impact study of the extension training entitled Project STARTFirst in a senior high school in the Philippines.

RESULTS AND DISCUSSIONS

Acceptability of the START Approach as an Extension Tool

The results of the survey assessing the acceptability of the START (See, Think, Aim, Refine, and Tell) Approach in generating research topic among students in Science, Technology, and Engineering (STE) strand are presented in Table 1. The Table 1 showed the mean scores for each statement regarding the utility and effectiveness of the START Approach, categorized by points of agreement and acceptability weighted mean (WM) and interpretation (I).

The discussion about the results the survey assessing the acceptability of the START (See, Think, Aim, Refine, and Tell) Approach in generating research topic among students in Science, Technology, and Engineering (STE) strand also presented in the discussion part after te results presented in Table 1.

Table 1. Acceptability of START Approach of STE Learners

Points of Agreement	WM	I
I can perform the START Approach without assistance.	3.24	A
I can generate a research topic in a short period using the START Approach.	3.41	A
I found the steps of the START Approach as flexible.	3.51	HA
I can narrow down general topics into manageable topics using the START Approach.	3.54	HA

Points of Agreement	WM	I
The steps of the START Approach are doable.	3.54	HA
The use of the START Approach is time-friendly.	3.54	HA
The START Approach is a consistent way of generating research topics.	3.58	HA
I found the steps of the START Approach as understandable.	3.61	HA
Each step in the START Approach is relevant with all the other steps.	3.61	HA
I found the steps of the START Approach as user-friendly.	3.63	HA
I found the steps of the START Approach as easy to follow.	3.64	HA
The START Approach can be used in science investigatory projects under STEM.	3.66	HA
I found the START Approach as a practical tool in generating research ideas.	3.68	HA
The START Approach is simple to use.	3.68	HA
AWM	3.57	HA

Legend: SD – 1.00 – 1.49; D – 1.50 – 2.49; A – 2.50 -3.49; HA – 3.50 – 4.00

Based on Table 1, the results of the survey assessing the acceptability of the START (See, Think, Aim, Refine, and Tell) Approach in generating research topic among students in Science, Technology, and Engineering (STE) strand are presented in Table 1. The table shows the mean scores for each statement regarding the utility and effectiveness of the START Approach, categorized by points of agreement and acceptability weighted mean (WM) and interpretation (I).

Common difficulties for students include searching for literature, cooperation among research partners, and time management (Escalona & Fiscal, 2020) To address these issues, teachers employ strategies such as strengthening assistance from research advisers, using instructional videos (Limgas, 2024), and providing regular assessment and feedback (Almazan & Viñas, 2023). Creating and maintaining a high school research program can be rewarding but requires substantial time commitment and dedication from both students and teachers (Horton & Vondracek, 2004). With the use of the START Approach, the time used by the teachers in assisting students in topic generation and especially the challenges faced by the students in generating their research topic will be saved for other academic endeavors. The START Approach further support the recommendation for improvement including the utilization of enhanced and new pedagogical approaches and educational technologies (Almazan & Viñas, 2023).

Moreover, participants reported that they could efficiently generate research topics within a short timeframe ($\bar{x} = 3.41$). According to Jimenez (2024), writing difficulties among senior high school students include issues in word choice, sentence structure, and grammar. START Approach invites students to be simple in the “See” part and improve and be technical and comprehensive in the “Think” part thereby allowing students to gradually improve their topic generation. With this, they could avoid the flow of thoughts that could affect their research topic

generation or include a broad research topics. The use of models and/or approach helps students in faster topic generation. For example, the ThoughtFlow, a visual analysis tool using topic models, assists in bridging information gaps during research ideation (Gou & Laidlaw, 2020). Another example is Bodh model helps researchers extract information efficiently, providing summaries of current work, previous research work, and future scope (Motwani & Madan, 2015). The latter example may be irrelevant to topic generation. These examples only prove that with a mode or approach in writing, and with START Approach it will be faster to generate a topic for research. A high rating of $\bar{x} = 3.41$ indicating the approach's efficacy in facilitating the initial stages of research ideation in a short timeframe. This is further confirmed by the results with a high acceptability of $\bar{x} = 3.54$ that the START Approach is time-friendly, indicating its suitability for students balancing academic commitments with other school responsibilities.

The flexibility ($\bar{x} = 3.51$) and simplicity ($\bar{x} = 3.68$) of the START Approach were highly regarded by respondents suggesting its adaptability to diverse research contexts and ease of use. Increased student interest and motivation in research learning after implementing strategies to help students find research topics was evident in the research study conducted by Dorji, (2020).

So, the high level of acceptability of the approach to students is a manifestation that the approach could be integrated in teacher trainings for research instruction. In the future, the START Approach should be implemented to increase 21st century skills of students in the school level. Furthermore, need more further studies to investigate 21st century skills of students in the school level such as communication skills, critical thinking skills, collaborative skills, and creative thinking skills. Additionally, the START approach should be integrated with many teaching strategies as Project based Learning, Problem Based Learning, Cooperative Learning Model, Inquiry Learning Model, and soon to get more impact on students' learning outcomes.

CONCLUSION

Based on the results and discussion we can concluded that students rated the START approach as highly acceptable in general, with a weighted mean of 3.57 in a scale of 4. The students claimed that the approach is flexible, practical, and doable, among other favorable attributes. Further, they claimed that the approach could be used to teach science investigatory projects. The high level of acceptability of the approach to students is a manifestation that the approach could be integrated in teacher trainings for research instruction.

SUGGESTIONS

The START Approach should be implemented to increase 21st century skills of students in the school level. Furthermore, need more further studies to investigate 21st century skills of students in the school level such as communication skills, critical thinking skills, collaborative skills, and creative thinking skills. Additionally, the START approach should be integrated with many teaching strategies such as Project based Learning, Problem Based Learning, Cooperative Learning Model, Inquiry Learning Model, and soon to get more impact on students' learning outcomes.

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