Contextualized Activity Tool For Enhancing Grade 7 Science Competencies

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Abstract- *This study aimed to assess the efficacy of using the Contextualized Activity Tool in enhancing the scientific competencies of Grade 7 students at Sto. Domingo Integrated High School during the academic year 2022-2023. The study employs a descriptive-experimental approach and includes a total of forty (40) participants, evenly distributed between twenty (20) males and twenty (20) females. The respondents' scores and ratings were examined using frequency, percentage, mean, and standard deviation. The researchers employed a paired t-test to examine the statistical significance of the differences between the pre-test and post-test scores of the participants. The study's findings indicate that the contextualized activity tool significantly improves the science competencies of grade 7 students.*

Moreover, the research yielded a notable disparity and an augmentation in the evaluation of science learning outcomes between the pre-test and post-test, indicating that it facilitated the students' enhanced understanding of the subject matter. The preliminary assessment indicated that most participants scored at the introductory level. Simultaneously, the post-test findings indicate that students achieved a competency level close to the expected standard after using the instrument. This illustrates that using contextualized activity tools yields a substantial disparity in their science learning outcome. This finding also indicates that integrating contextualization as a learning tool enables students to actively participate in discussions and comprehend the material and concepts in various ways. Consequently, this fosters an elevated cognitive capacity in pupils and enhances their academic achievement..

Keywords- contextualized, collaboration, content, and activity tool

I. INTRODUCTION

The education sector had significant setbacks during the Covid-19 pandemic. While schools globally experienced an average suspension of operations lasting 79 days, schools in the Philippines opted for over a year of conducting classes through online and distant learning methods instead. This information is based on the stance of UNICEF (United Nations International Children's Emergency Fund), which persistently promotes the resumption of face-to-face classes in different nations. Classes were suddenly halted indefinitely, and underprivileged pupils encountered challenges such as inequitable access to technology and internet resources. This incident served as a further obstacle for the country, which was already struggling to enhance the quality of fundamental education before the pandemic (Bisnar, 2022).

Teachers face the greatest challenge in finding ways to succeed with various types of learners despite the educational crisis that we are currently experiencing. The role of teachers is crucial when it comes to assisting students' needs, especially in overcoming difficulties in learning science.According to Simon (2008), relevant changes in the curriculum need to offer explicit instruction; thus, pedagogy plays an important role in achieving curriculum goals (Montilla et al., 2023).

Current developments in scientific education aim to transition from the conventional approach of presenting information and practicing skills to adopting teaching techniques that connect science to real-life situations and foster the growth of students' critical thinking and problem-solving abilities (NCCA, 2012). To adapt to the evolving trends in education, instructors are introduced to novel pedagogical approaches, acquire new information and skills, critically evaluate their instructional methods, and improve the overall quality of their teaching within a dynamic educational setting. Modifications in the educational framework and implementation method directly impact students' performance in the field of science. Teachers should facilitate students in exploring, expressing, and engaging with their scientific aptitude and comprehending other subjects and the surrounding world (Victoria State Government, 2019).

Furthermore, scientific learners encounter numerous obstacles during the learning process, leading to subpar academic performance. Some individuals encounter challenges in understanding educational content, determining problem-solving strategies, and articulating scientific concepts. Education in the mentioned sector is dynamic, intricate, and continuous. Science education activities enhance students' cognitive abilities, enabling them to think logically, methodically, objectively, and comprehensively. Additionally,

these activities foster an objective and receptive mindset when addressing various matters. Moreover, possessing critical thinking abilities enables students to employ advanced and thought-provoking cognitive processes to engage in creative and analytical thinking. The combination of imaginative and critical thinking has the potential to foster national growth and address societal requirements (Yuanita et al., 2018).

Contextualization is an educational approach that establishes connections between concepts and subjects in the curriculum. The science curriculum involves incorporating the desired skills and knowledge into a practical instructional environment to enhance the relevance and effectiveness of the teaching and learning experience for students. Orpwood et al. (2010) state that contextualization can involve several elements, such as interdisciplinary learning, incorporating students' informal knowledge from outside of school, teachers working together to highlight real-world examples, and promoting student collaboration and active learning.

According to Kaphur (2019), one of the core elements that will promote student learning and help achieve academic goals and objectives is the development of teaching-learning materials in educational institutions. Teachers must focus on bringing about improvements in teaching and learning resources. Educators must ensure that they are effective in helping students achieve their learning objectives after they have been implemented.

Background of the study. Science is one of the subjects that students find to be the most challenging. The science topic is taught via a spiral progression in the K–12 Curriculum, Enhanced Basic Education, where the complexity of each of the four scientific disciplines—Chemistry, Biology, Physics, and Earth Science—intensifies or rises as the learner moves from one grade level to the next. In past years, students had trouble understanding the concepts taught in their science classes. Teachers require the latest innovations and the best methods for inspiring students to become actively involved in learning the subject.

The Philippines ranked near the bottom among the 58 nations that participated in the Trends in International Mathematics and Science Study (TIMSS) for evaluating the performance of Grade 4 pupils in mathematics and science. The TIMSS set four international benchmarks to evaluate students' performance in the two topics: the advanced benchmark (625), high benchmark (550), intermediate benchmark (475), and low benchmark (400). An article in the Manila Times stated that most Filipino pupils, specifically 74%, did not meet the minimum standard for math skills, indicating that they possess just basic knowledge in this area. However, a smaller percentage, 19%, did meet this requirement. Merely 6 percent of pupils met the Intermediate Benchmark, while a mere 1 percent met the High Benchmark, indicating their ability to apply conceptual understanding in problem-solving. Given the evidence presented by the TIMSS results, it is imperative to offer scaffolding in the instruction of Mathematics.

Sto. Domingo Integrated High School, situated in Sta. Rosa, Laguna, serves 1,785 junior and senior high school students. During the initial assessment period at the start of the school year, it was discovered that most Grade 7 pupils did not achieve a passing grade in their scientific course. Most sections obtained a poor Mean Percentage Score (MPS) in the findings. The mean score for the Grade 7 Diagnostic Test is 17.25, with a minimum passing score (MPS) of 34.26 and a standard deviation (SD) of 4.77.

Furthermore, the science department has reported the quarterly result of the assessment of Grade 7 with an MPS of 45.87%. Thus, the students' performance clearly shows that their learning is in serious condition, with students not being able to achieve the expected outcomes from the curriculum goals. This result showed that the learners were experiencing difficulties in understanding the lesson and that different strategies are necessary to enable the learners to acquire different skills and ideas useful in learning science.The researcher observed that students met difficulties such as poor vocabulary in science, analysis, representation, and critical thinking skills in understanding the subject. Moreover, the lack of structured education and effective teaching methods in classrooms due to the pandemic has a negative impact on students' proficiency skills (Panergayo & Aliazas, 2023). The learners' lesson comprehension is jeopardized due to the present circumstances.

These insights result in implementing intervention strategies for the learners. To improve the quality of education and boost learners' scientific skills and competence, the researcher aimed to assess the efficacy of contextualized activity tools in enhancing science capabilities. The project will create contextualized activity tools on waves during the third grading period, as outlined in the MELCs (Most Essential Learning Competencies). The forthcoming material will be named the Contextualized Activity Tool for Grade 7 and will function as the principal instrument in the study. Moreover, the study will investigate the impact of using the contextualized activity tool on improving the learners' science abilities and proficiency levels. Furthermore, the outcomes will serve as a foundation for an intervention program to improve the learner's condition.

Objectives of the Study. The main purpose of this study was to determine the effectiveness of the Contextualized Activity Tool in enhancing the science competency of Grade 7 students at Sto. Domingo Integrated High School.Specifically, the study seeks to answer the following questions:

1. How can student respondents describe contextualized activity tools in terms of objectives, content, language, direction, practical exercise, aesthetic value,usefulness and appropriateness?
2. How can curriculum experts describe contextualized activity tools in terms ofcontent presentation and organization?
3. What is the mean score of the student-respondents in Science 7 regarding pre-test and post-test?
4. Is there a significant difference between the pre-test and post-test scores of the respondents?
5. Does a significant difference exist between the pre-test and post-test scores of the respondents when grouped according to sex?

II. METHODOLOGY

Research Design. The researchers employed a descriptive-experimental study design. Gillaco (2014) states that the descriptive approach aims to uncover factual information about a specific situation. This technique also prioritizes the act of describing, contrasting, evaluating, and understanding preexisting data. According to Beb (n.d.), the completion of this study will result in the production of a product. Beb defines the developmental method as a collection of research material closely connected to instructional development. Descriptive developmental research design refers to the methodical examination of the creation, thorough evaluation, and strategic planning of educational methods, products, and programs that must adhere to a specific standard or criterion.

Moreover, Sevilla et al. (2022) define descriptive research as the systematic gathering of data to examine hypotheses or address inquiries regarding the present state of the study's subject. This study uses descriptive research methodology to examine and evaluate the efficacy of contextualized activity items in augmenting science competencies. This study is classified as a pre-experimental research, specifically utilizing a single pre-test and post-test design methodology. The process contains three distinct steps: (1) administering the pre-test, (2) implementing the experimental treatment on the participants, and (3) conducting a post-test. The differences resulting from the implementation of the experimental therapy are then assessed by comparing the scores obtained before and after the treatment.

Respondents of the study.This study involved forty students from grade 7 Quirino, composed of 20 males and 20 females, who were enrolled at Sto. Domingo Integrated High School, School Year 2022-2023 and profiled according to sex.

Sampling Technique. Stratified random sampling is a method to acquire a sample that accurately represents a given population. This approach entails segmenting the population into smaller subcategories, known as strata, according to specific features or attributes pertinent to the research inquiry. Subsequently, the researchers can choose individuals from each stratum in a manner that is directly proportional to the size of that stratum within the population (Creswell, 2012). The selected participants in this study were categorized into two subgroups, namely males and females, who possessed traits representative of the overall community. The Grade 7 students at Sto. Domingo Integrated High School has seven sections: Marcos, Aquino, Ramos, Quirino, Magsaysay, Garcia, and Aguinaldo. The total number of students in Grade 7 is 245. The researchers selected the Grade 7 Quirino group as the sample for the study. Since the skill and nature of the learners in this grade level are identical, the researchers used this group of respondents for the study.
Moreover, the researchers knew there was no discernible disparity in the factors they assessed among the groups. Likewise, the number of Grade 7 students was too large to test the entire population efficiently andpromptly while keeping costs down. Due to the common characteristics of this group of students, the researchers opted to employ this sampling approach for pragmatic purposes to achieve the anticipated study results.

One of the main benefits of using stratified random sampling is that it can help reduce sampling bias and increase the sample's representativeness. By selecting participants from each stratum in proportion to its size, the sample would reflect the distribution of the population concerning the chosen characteristics. This means that the sample would be more likely to accurately represent the population, which can increase the study's external validity.Another advantage of stratified random sampling is that it can increase the precision of estimates for specific subgroups. By assuring proper representation of each stratum in the sample, the researchers can achieve more accurate estimations of population parameters for each subgroup. This is especially crucial when there are substantial disparities in the attributes of the subgroups.

Nevertheless, certain constraints exist when employing stratified random sampling. An important obstacle is identifying suitable strata related to the research question (Rahi, 2017). Stratified random sampling may not be suitable

if the population lacks distinct and significant subgroups. Moreover, finding and selecting individuals from each stratum might be more laborious and demanding in terms of time and resources than alternative sampling techniques. In general, stratified random sampling is a valuable method for acquiring a representative sample from a population, especially when there are substantial variations in the attributes of subgroups. Nevertheless, it is crucial to thoroughly evaluate the suitability of this approach for the study inquiry and to effectively execute the sampling methodology to acquire precise and dependable outcomes.

Research Instrument. The research instruments differ within the study's design to gather the relevant data for this study. Since this research is a descriptive-experimental research design that focuses on using contextualized activity tools for enhancing science competencies, the researchers utilized the following instruments: Teacher-made contextualized activity tools validated by a panel of experts. The design of the contextualized activity tool was based on the elements of contextualized instruction, including a collaborative and student-centered classroom setting. The contextualized activity tool was developed from thefollowing learning competencies: language, content, usefulness, and appropriateness. Before implementing the crafted contextualized activity tool, it was presented to some curriculum experts from other schools to seek assistance for validation. Two master teachers of science validated it, one head teacher of science, one head teacher from the English department and one Teacher III, for the technicalities regarding grammatical errors. The finalized contextualized activity tool was used to conduct the study upon approval.

The accompanying advances continued in developing and approving the pre-test and post-test. (1) Content Validation. Before developing the test items, the researchers developed a specifications table dependent on the target skills. It incorporates every topic of the researchers' instruction in the third quarter, specifically waves. (2) Face Validation. The researchers and subject experts assessed the test items for remarks and ideas. Significant modifications were implemented, including rebuilding each test item's core components and revising test items aligned with specific science learning objectives. Additionally, certain aspects were adjusted and reevaluated. (3) Conducting a preliminary test of a new product or service. The test was administered to Grade 7 pupils to obtain reliable findings. The researchers devised a post-test consisting of thirty items and multiple choice questions as a tool for conducting the investigation. The outcome underwent score analysis for additional assessment.

The researchers employed a teacher-created survey questionnaire to assess the respondents' acceptance of the generated contextualized activity tool, which aims to enhance the Science competences of grade 7 students. The construction of the survey instrument was based on the students' acceptability of using the developed activity tool. The researchers asked for the help of the experts and panel in evaluating the validity of its content. After a series of modifications and improvements, it was submitted to the research adviser for final approval. Upon approval, the survey questionnaires underwent pilot testing and were distributed to the respondents. Based on the criteria of the variables, the Cronbach Alpha result indicates that the variables were deemed acceptable (0.71-0.8) and showed good reliability. The results of the pilot testing indicated that both the pre-test (0.80) and post-test (0.87) were deemed satisfactory. Lesson exemplars, based on the most fundamental learning competencies from grade 7 science in the K-12 curriculum, were utilized as instruments in the study.

***Research Procedure*.** The research paper underwent several steps to achieve the target of the study along with the crafting and design of the contextualized activity tool, Most Essential Learning Competencies (MELC) for Science 7 was considered. The researchersthoroughly read various reference materials related to the study. The result of the student's performance in science was also analyzed to ensure an efficient learning product. The design of the contextualized activity tool was based on the elements of contextualized instruction, including a collaborative and student-centered classroom setting. The contextualized activity tool was developed from thefollowing learning competencies: language, content, usefulness, and appropriateness. Before implementing the crafted contextualized activity tool, it was presented to some curriculum experts from other schools to seek assistance for validation. Two master teachers of science validated it, one head teacher of science, one head teacher from the English department and one Teacher III, for the technicalities regarding grammatical errors. The researchers integrated the comments and suggestions into the contextualized learning material, including the appropriate arrangement and alignment of texts. Subsequently, the material was submitted to the research adviser and panel for internal validation. After receiving consent, the researchers sent a formal request letter to the school principal to conduct a preliminary test, and subsequently forwarded the outcome to the study statistician for assessment.

The researchers organized an orientation session and provided the responders with a letter of request to carry out the study. After receiving approval, the researchers conducted the validated pre-test on the responders. The researchers provided

the responders with contextualized learning material for the full duration of the study. A post-test was administered following the intervention of the target population. A survey questionnaire is administered to ascertain the respondents' perception of contextualized activity tools. Following the experimentation, the researchers obtained the necessary records for the study, which were then analyzed and interpreted.

Statistical Treatment of Data.The pre-test and post-test scores were utilized to assess the efficacy of contextualized activity tools in augmenting science competencies. The respondents' scores were measured using mean, standard deviation, frequency, and percent. The Sample Paired t-test was employed to assess the statistical significance of the difference between the pre-test and post-test scores of the respondents.

III. RESULTS AND DISCUSSION

Table1.Perception of the respondents in the use of contextualized learning material for enhancing grade 7 science competencies as to objectives

Indicators	Mean	Std. Deviation	Verbal Interpretation
1. The objectives of the learning material are measurable and attainable.	4.18	0.64	Very acceptable
2. The objectives are clearly defined from the viewpoint of the lessons.	4.28	0.51	Very acceptable
3. These are stated in specific terms.	4.40	0.71	Very acceptable
4. The objectives summarized what will be achieved at the end of the lesson.	4.50	0.68	Extremely acceptable
5. The objectives are aligned with the activity given.	4.50	0.55	Extremely acceptable
Overall	4.37	0.34	Very acceptable

Legend: 4.50 - 5.00 (extremely acceptable); 3.50 - 4.49 (very acceptable); 2.50 - 3.49 (moderately acceptable); 1.50 - 2.49 (slightly acceptable); 1.00 - 1.49 (not acceptable).

The data shown in Table 1 indicates that the student participants approve of the aims of the contextualized learning material highly, as demonstrated by the overall mean of 4.37, with a standard deviation of 0.34. The respondents assigned a mean rating of 4.50 to indication 4, which indicates that the objectives succinctly outline the desired outcomes of the class. The result implies that when contextualization is applied within the lesson context, students caneasily grasp the lessons. Moreover, the result demonstrates that when students are given profound targets for the lesson, they are more engaged and inspired to learn the new concepts being studied. They also show eagerness to meet the expected outcome set by the teacher. Furthermore, students' eagerness to discover new things positively impacts the learning process, boosts their satisfaction, and can influence information analysis, resulting in improved performance.

Indicator 5 achieved the highest mean score of 4.40, indicating that the aims align with the supplied action. This indicates that the contextualized activity tool has achieved the desired level of quality in terms of instructional materials, specifically concerning the predicted learning results. The activity tool utilized by the students provides activities that allow them to explore new ideas and learning concepts on their own, leading to a more fruitful learning outcome. Generally, the result suggests that incorporating contextualized activity tools as a learning resource helps learners feel motivated to learn the topic on their abilities, understand the lesson, appreciate its meaning and usefulness, and connect and apply it in everyday activities. Indicator 1 has the lowest mean of 4.18, indicating that the learning material's aims are measurable and reachable. It might be inferred that not all respondents gave this metric a fair opportunity. However, this was understood as a form of consent, indicating that the educational tasks offered in each subject are achievable and quantifiable, ultimately resulting in the desired objectives outlined in the lesson's content and performance criteria.

The findings from the table above are consistent with Zhou's (2017) assertions that learning objectives aid instructors in selecting and organizing the course's materials and selecting the kinds of assessments and learning activities to include. By writing and reviewing the learning objectives in a lesson, teachers can decide what subjects and materials are most beneficial for the learning outcomes. When learning objectives are precise and actionable, it becomes simpler to quickly weed out inappropriate texts or activities for the course.

This also implies that it is important for teachers to incorporate learning objectives into their lessons so that students understand what to aim for during discussions and before and after completing the given tasks.

Table 2.Perception of the respondents in using contextualized learning material for enhancing grade 7 science competencies as to content.

Indicators	Mean	Std. Deviation	Verbal Interpretation
1. Topics included are relevant.	4.18	0.64	Very acceptable
2. Links between topics are very distinct.	4.30	0.52	Very acceptable
3. Topics help the learners enhance their academic performance in the subject.	4.45	0.55	Very acceptable
4. The topics are aligned in MELCs.	4.20	0.65	Very acceptable
5. The topics cover the essential lesson in the subject.	4.50	0.55	Extremely acceptable
Overall	4.33	0.25	Very acceptable

Legend: 4.50 - 5.00 (extremely acceptable); 3.50 - 4.49 (very acceptable); 2.50 - 3.49 (moderately acceptable); 1.50 - 2.49 (slightly acceptable); 1.00 - 1.49 (not acceptable).

Table 2 displays the student respondents' view of the utilization of contextualized learning material about content. The data indicates that the contextualized learning material is highly satisfactory, as demonstrated by the average score of 4.33, with a standard deviation of 0.25.

Among the indicators, the student respondents perceived indicator 5, which states that the topics cover the essential lesson in the subject, and it has the highest mean of 4.50. Furthermore, student respondents also perceived indicator 1, which states that the topics included are relevant, having the lowest mean of 4.18. Despite having the lowest mean, the content of the contextualized learning material provides a higher level of thinking development and new ideas about the subject matter. The findings from the table above reveal that using contextualized activity tools allowed the students to relate science concepts to real-life facts, improving their understanding of the subject. Consequently, the results also imply that contextualization can aid the students in connecting concepts and experiences they acquired in learning and applyingthem to unusual and complex issues, discipline, and various settings. Subsequently, the developed contextualized activity tool assists the students in making connections with new ideas and experiences that can help with activities that need more information and expertise to better cope with everyday tasks. Moreover, they confirmed that the contextualized activity tool can incorporate prior knowledge into innovative learning strategies that are essential to the lesson in the subject.

The findings support Krause's (2016) assertion that training with contextualized content can stimulate learners' prior knowledge and promote more effective problem-solving for the initial principle, prior learning. Utilizing interactive classroom engagement activities to provide students with a clear understanding of a subject's importance could enhance learning and promote conceptual transformation. Ultimately, to promote metacognition, providing context for the content enables students to contemplate their learning and establish connections between ideas within a concrete framework, facilitating their comprehension of the link between these concepts.

Additionally, this supports the assertion made by Arora (2021) that sustaining the learners' engagement throughout the learning process is essential to enhance the significance of the experience. The information should be current, concise, and aesthetically pleasing, arousing learners' curiosity and inspiring them to delve deeper into the topic.

Table 3. Perception of the respondents in the use of contextualized learning material for enhancing grade 7 science competencies as to language

Indicators	Mean	Std. Deviation	Verbal Interpretation
1. The language used is concise, concrete, and familiar to the learners.	4.25	0.59	Very acceptable
2. The language is clear and straight forward.	4.68	0.53	Extremely acceptable
3. Significant terms and key concepts are clearly defined and explained before the discussion.	4.50	0.60	Extremely acceptable
4. It follows a style that applies to the learners.	4.50	0.55	Extremely acceptable
Overall	4.48	0.26	Very acceptable

Legend: 4.50 - 5.00 (extremely acceptable); 3.50 - 4.49 (very acceptable); 2.50 - 3.49 (moderately acceptable); 1.50 - 2.49 (slightly acceptable); 1.00 - 1.49 (not acceptable).

Table 3 displays the findings of a survey administered to student participants to evaluate their perception of utilizing contextualized activity tools concerning language. The language of the learning materials was very acceptable to the pupils, as indicated by the overall mean score of 4.48 and a standard deviation of 0.26. This indicates that the language utilized in the implemented contextualized activity tool effectively communicated the intended message to the pupils.

The results corroborate the claims by Puspasari et al. (2021) on the substantial influence of teacher and student language on the efficacy of instruction and knowledge acquisition. More precisely, the choice of language teachers employ during instruction can significantly impact pupils' comprehension level. When teachers utilize the correct language and vocabulary, students are more likely to understand and apply the subject in real-life circumstances.

Furthermore, it is imperative to meticulously select the language employed in educational materials to guarantee its accessibility and comprehensibility for all students. This is especially crucial when students may have various linguistic backgrounds or low competency in the language used for teaching.

In summary, the findings from Table 3 indicate that the language employed in the contextualized activity tool successfully communicated the desired message to the students. These findings emphasize the significance of selecting and employing language deliberately in educational activities to guarantee students' comprehension and application of the subject.

Table 4. The respondents' perception of contextualized learning material for enhancing grade 7 science competencies as to the direction.

Indicators	Mean	Std. Deviation	Verbal Interpretation
1. Ideas, concepts, and points presented are well expressed.	4.53	0.51	Extremely acceptable
2. The materials have specific directions for their use.	4.55	0.50	Extremely acceptable
3. The directions are stated in a straightfor ward manner.	4.35	0.53	Very acceptable
4. Each task has its own directions to follow.	4.53	0.51	Extremely acceptable
Overall	4.49	0.23	Very acceptable

Legend: 4.50 - 5.00 (extremely acceptable); 3.50 - 4.49 (very acceptable); 2.50 - 3.49 (moderately acceptable); 1.50 - 2.49 (slightly acceptable); 1.00 - 1.49 (not acceptable).

The survey results in Table 4 depict the perceptions of student respondents on the utilization of contextualized

activity tools concerning direction. The average score of 4.49 and a standard deviation of 0.23 suggest that the guidance given in the learning materials was highly satisfactory to the pupils. These findings indicate that the instructions given in the produced contextualized activity tool were concise and successful in leading students through learning.

These findings are consistent with the work of Parker (2013), who emphasizes the importance of clear instructions and processes for participating in learning activities. Further, activity sheets can be useful for providing background information, instructions, and processes for learning activities. They can also be mapped against performance standards and learning objectives, making it easier for teachers to assess student progress and ensure students meet their learning goals. Furthermore, the results of Table 4 suggest that the directions provided in the contextualized activity tool effectively guided students through the learning process. This is important because clear and effective direction can help minimize students' confusion and frustration, allowing them to focus on the content being taught.

In summary, the results shown in Table 4 emphasize the significance of providing explicit and efficient guidance in activity tools tailored to specific contexts. Teachers can facilitate effective student engagement and comprehension of the information taught by offering explicit instructions and well-defined learning processes. This can ultimately result in enhanced learning outcomes and increased achievement for pupils.

Table 5. Perception of the respondents in the use of contextualized learning material for enhancing grade 7 science competencies as to practical exercise

Indicators	Mean	Std. Deviation	Verbal Interpretation
1. The exercises enhance understanding of the content.	4.43	0.59	Very acceptable
2. The exercises motivate the learners to learn on their own.	4.43	0.59	Very acceptable
3. The presented activity measures higher-order thinking skills.	4.28	0.64	Very acceptable
4. Exercises are evaluated with correct and definite answers.	4.58	0.59	Extremely acceptable
Overall	4.43	0.27	Very acceptable

Legend: 4.50 - 5.00 (extremely acceptable); 3.50 - 4.49 (very acceptable); 2.50 - 3.49 (moderately acceptable); 1.50 - 2.49 (slightly acceptable); 1.00 - 1.49 (not acceptable).

The survey results in Table 5 depict student respondents' perceptions of using contextualized activity tools for practical exercises. The average score of 4.43, along with a standard deviation of 0.27, suggests that the students well-received practical activities offered in the contextualized activity tool. These findings indicate that the hands-on activities successfully stimulated learners to independently engage in learning, improving their comprehension of the lesson's context and fostering advanced cognitive abilities.

This discovery aligns with the research conducted by Handayani et al. (2017), who highlight the significance of changing the curriculum to improve education for all students.Handayani et al. (2017) differentiate between curriculum changes and curriculum enhancements, with modifications being more focused on meeting the needs of individual students. By emphasizing the definition and nature of curriculum modification, Handayani et al. (2017) provided practical resources and examples that can enhance classroom practices for diverse learners.

In the context of contextualized activity tools, the results of Table 5 suggest that practical exercises can effectively engage students and enhance their understanding of the material being taught. Practical exercises can help foster a deeper understanding of the subject by providing hands-on learning and higher-order thinking.

Moreover, the results presented in Table 5 indicate that adapting the curriculum to cater to the specific requirements of each student can be an effective approach to improving education. It is crucial because kids have diverse learning styles, and changing the curriculum can guarantee that all students may access learning materials and activities specifically designed to meet their individual learning requirements.

In summary, the findings from Table 5 emphasize the significance of hands-on exercises in activity tools that are relevant to real-life situations, as well as the potential

advantages of making changes to the curriculum to improve education for all children. Through experiential learning and customization of the curriculum to accommodate the unique requirements of each student, educators may guarantee equal access to an exceptional education that nurtures their advancement and maturation.

Table 6. Perception of the respondents in the use of contextualized learning material for enhancing grade 7 science competencies as to aesthetic value

Indicators	Mean	Std. Deviation	Verbal Interpretation
1. The S-CALATE contains icons that are visually pleasing and easy to understand.	4.50	0.60	Extremely acceptable
2. It uses appropriate text font, size and type.	4.58	0.55	Extremely acceptable
3. It makes use of illustrationsthat are interesting and suited to the lessons.	4.45	0.50	Very acceptable
4. It has a strategic design.	4.45	0.60	Very acceptable
Overall	4.49	0.29	Very acceptable

Legend: 4.50 - 5.00 (extremely acceptable); 3.50 - 4.49 (very acceptable); 2.50 - 3.49 (moderately acceptable); 1.50 - 2.49 (slightly acceptable); 1.00 - 1.49 (not acceptable).

Curriculum experts have long recognized instructional materials essential to effective teaching and learning. As stated by Kasi (2017), using instructional materials helps enhance students' cognitive skills and promotes their engagement in the learning process. Instructional materials are important because they provide concrete examples and enable students to experience and see things differently. This can lead to a deeper understanding of concepts and the ability to apply them to new situations.

Furthermore, using aesthetic and visually pleasing instructional materials can also contribute to the emotional engagement of learners in the classroom. As Rodriguez and Cassany (2017) stated, the visual representation of learning materials can enhance students' motivation and lead to a more positive attitude toward learning. Aesthetically pleasing instructional materials can make learning more enjoyable and promote a positive learning experience.

Furthermore, utilizing instructional resources can facilitate the involvement of students with diverse learning styles in the subject matter. Oyebade (2016) asserts that utilizing instructional materials can effectively address the varied requirements of learners by offering several forms of representation, including visual, aural, and kinesthetic.

Using visually appealing and captivating instructional materials can greatly enhance the effectiveness of the teaching and learning process. It has the potential to enhance comprehension, foster emotional involvement, and accommodate the varied requirements of learners.

Table 7. Perception of the respondents in the use of contextualized learning material for enhancing grade 7 science competencies as to usefulness

Indicators	Mean	Std. Deviation	Verbal Interpretation
1. The S-CALATE provides learning tasks designed to develop the target competencies.	4.48	0.60	Very acceptable
2. It has lessons that are relatable to the target learners' personal experiences.	4.45	0.55	Very acceptable
3. It offers various activities that are localized	4.48	0.55	Very acceptable

	and that can be easily accomplished.			
4.	It can substitute for standardized materials, which may be difficult to process.	4.53	0.51	Extremely acceptable
Overall		4.48	0.29	Very acceptable

Legend: 4.50 - 5.00 (extremely acceptable); 3.50 - 4.49 (very acceptable); 2.50 - 3.49 (moderately acceptable); 1.50 - 2.49 (slightly acceptable); 1.00 - 1.49 (not acceptable).

The statement explores the perspective of student participants regarding the efficacy of contextualized activity instruments. The data presented in the study demonstrates that most students see the learning content as both relevant and pleasurable. Based on the total mean score of 4.48 and standard deviation of 0.29, it can be inferred that the students view the learning content as valuable. Contextualized activity tools facilitate the integration of ideas across different courses. In science education, it is important to situate the desired scientific concepts within a practical framework to ensure that the learning experience is both meaningful and interesting for the students. In addition, the enhanced contextualized activity tool incorporates exploratory tasks that foster cooperation, thereby involving students and facilitating enhanced learning and skill acquisition. It was also observed during the implementation of the contextualized activity tool that students' attention was captured; thus, they could illustrate the relevance of their own learning experience and relate the concept of the subject matter to real-world situations.

According to Dumajog (2020), using localized examples, exercises, and illustrations when teaching about force can improve student success in science. This teaching strategy involves incorporating local data into the educational material, which can make it more relatable and engaging for students. Curriculum experts recommend using authentic and native examples and exercises to make this teaching approach effective.

Therefore, it can be concluded that using contextualized activity tools can enhance student learning and engagement. Incorporating localized examples and exercises can make the material more relevant and meaningful for students, leading to a more enjoyable and effective learning experience.

Table 8. Perception of the respondents in the use of contextualized learning material for enhancing grade 7 science competencies as to appropriateness

Indicators		Mean	Std. Deviation	Verbal Interpretation
1.	The S-CALATE provides ideas according to the level of understanding.	4.63	0.49	Extremely acceptable
2.	It appropriately uses knowledge, skills, and concepts learned in the lesson to deal with different tasks and activities.	4.53	0.51	Extremely acceptable
3.	It provides application to daily-life.	4.65	0.53	Extremely acceptable
4.	4. It contains activities that are suited to learners' needs.	4.45	0.60	Very acceptable
5.	5. It develops students' creativity and critical thinking skills.	4.68	0.53	Extremely acceptable
Overall		4.59	0.23	Extremely acceptable

Legend: 4.50 - 5.00 (extremely acceptable); 3.50 - 4.49 (very acceptable); 2.50 - 3.49 (moderately acceptable); 1.50 - 2.49 (slightly acceptable); 1.00 - 1.49 (not acceptable).

The statement analyzes the findings of Table 8, which displays the perception of student participants on the suitability of the contextualized activity tool. The data presented in the table indicates that most students perceive the material as highly satisfactory, as evidenced by the overall mean score of 4.59 and a standard deviation of 0.23. These findings indicate that the created activity tool matches the student's learning styles and requirements well, and it promotes creativity, critical thinking abilities, and practical application in everyday life.

These findings align with the study conducted by Spring (2010), which proposes that contextualized teaching can be achieved by associating real-life context with the culture of the learners. This approach involves linking the lesson directly to a specific application appealing to the students' interests, as Perin (2011) suggested. Therefore, teachers should incorporate activities, events, issues, or real materials into their lessons to meet the needs of their learners.
In terms of appropriateness, the developed contextualized activity tool provides students with an avenue of engagement and motivation, making the learning experience more relevant and meaningful. By incorporating real-life examples and activities into the lessons, students can see the practical application of the knowledge and skills they are acquiring, which can enhance their understanding and retention of the material.

In summary, the results of Table 8 indicate that the contextualized activity tool is appropriate for the student's learning styles and needs. This finding supports the importance of contextualized teaching, which involves linking the lesson directly to a specific application appealing to the student's interests and culture. By doing so, teachers can foster creativity, critical thinking skills, and daily-life application among their students, leading to a more effective and enjoyable learning experience.

Table 9. Perception of the experts on the contextualized learning material as to content

Indicative Statement	Mean	Std. Deviation	Interpretation
1. Content is suitable to the student's level of development.	4.00	0.00	Very Satisfactory
2. Material contributes to achieving specific objectives of the subject area and grade/year level for which it is intended.	4.00	0.00	Very Satisfactory
3. The material provides for developing higher cognitive skills such as critical thinking, creativity, learning by doing, inquiry, problem-solving, etc.	4.00	0.00	Very Satisfactory
4. Material is free of ideological, cultural, religious, racial, and gender biases and prejudices.	4.00	0.00	Very Satisfactory
5. Material enhances the development of desirable values and traits.	4.00	0.00	Very Satisfactory
6. Material has the potential to arouse the interest of the target reader.	4.00	0.00	Very Satisfactory
7. Adequate warning/cautionary notes are provided in topics and activities concerning safety and health.	3.67	0.58	Very Satisfactory
Composite	3.95	0.13	Very Satisfactory

Legend:3.50-4.00 (Very satisfactory); 2.50-3.49 (Satisfactory); 1.50-2.49 (Poor); 1.00-1.49 (Not satisfactory).

The statement discusses the results of Table 9, which shows the perceptions of curriculum experts on the contextualized activity tool as to content. The table reveals that all variables yielded a mean score of 4.00, with a standard deviation of 0.00, except for the statement regarding safety and health cautionary notes. The overall mean score of 3.95 with a standard deviation of 0.13 indicates that the curriculum experts consider the contextualized activity tool very satisfactory. As perceived by the validators, the developed contextualized activity tool shows that the content provides students with detailed instruction to guide and help a learner acquire the necessary knowledge, skills, and attitude for a specific unit of competency. The contextualized activity tool also contains assessments that measure the learners' cognitive domain, such as knowledge, skills, and processes. Since the contextualized activity tool focuses on the context of

contextualized instruction, which entails collaboration and learning by doing, the learning activities have rubrics to meet students' learning styles and interests. In addition, the developed contextualized activity tool enhanced students' critical thinking skills as they could independently make inferences, analyze, discover, and acquire new concepts through experienced learning. Furthermore, the contextualized activity tool provides students with lessons, concepts, activities, and exercises with the competencies needed to develop the skills required in 21st-century education.

The findings in Table 9 are consistent with the statement made by Khare (2018) that contextualized instruction involves teaching students knowledge in a context that makes sense to them. This approach promotes student learning by making the concepts more approachable and engaging students in worthwhile activities. Khare (2018) emphasizes the importance of using meaningful contexts and learning activities to teach students the necessary skills, such as problem-solving and analytical thinking.

The contextualized activity tool's overall high mean scores as to content suggest that it effectively provides students with meaningful contexts and learning activities that promote their learning and development. However, the slightly lower score for the safety and health cautionary notes statement number 7 indicates that the experts may have some concerns about the safety of the learning material. This highlights the importance of appropriately addressing safety and health considerations in contextualized activity tools.

Overall, Table 9's results show that the contextualized activity tool as to content is perceived as very satisfactory by the curriculum experts, except for safety and health cautionary notes. This supports the importance of using meaningful contexts and learning activities to promote student learning, as Khare (2018) emphasized. However, it also underscores the need to appropriately address safety and health considerations in contextualized activity tools.

Table 10. Perception of the experts on the contextualized learning material as to presentation and organization

Indicative Statement	Mean	Std. Deviation	Interpretation
1. The presentation is engaging, interesting, and understandable.	4.00	0.00	Very Satisfactory
2. There is a logical and smooth flow of ideas.	4.00	0.00	Very Satisfactory
3. Vocabulary level is adapted to the target reader's likely experience and level of understanding.	4.00	0.00	Very Satisfactory
4. Length of sentences is suited to the comprehension level of the target reader.	4.00	0.00	Very Satisfactory
5. Sentences and paragraph structures are varied and interesting to the target reader.	4.00	0.00	Very Satisfactory
Composite	4.00	0.00	Very Satisfactory

Legend:3.50-4.00 (Very satisfactory); 2.50-3.49 (Satisfactory); 1.50-2.49 (Poor); 1.00-1.49 (Not satisfactory).

The statement presents the findings of the validation process for the contextualized activity tool, as assessed by curricular experts, in terms of its effectiveness for presentation and arrangement. Based on the provided table, it is clear that there is no disparity in the scores of the generated contextualized activity tool as evaluated by experts. This indicates that the contextualized learning material is highly satisfactory. The designed contextualized activity tool incorporates images, photographs, and diagrams that align with the instructional materials to enhance presentation and organization. The tool also features straightforward and user-friendly methods to facilitate ease of use for learners. This text encapsulates the fundamental characteristics of a created module, namely in terms of its structure and display. In addition, the contextualized activity tool has few technicalities regarding language and form. This means that the tool was designed carefully considering the learner's abilities and degree of understanding, as confirmed by validators. The material exhibits a coherent progression of ideas, and the presentation captivates, intrigues, and is comprehensible to the learners.

The validation findings from curriculum experts are consistent with the study by Dodd (2015), which suggests that supplemental materials can help motivate students and aid them in understanding and remembering information from a particular source. These materials ease the burden of

delivering instructional materials, saving teachers time and energy.

Overall, the validation results of the contextualized activity tool in terms of presentation and organization by curriculum experts show that the contextualized activity tool is an effective instructional tool for promoting student learning. This supportsusing supplemental materials to aid students in understanding and remembering information, as Dodd (2015) emphasized. Additionally, the well-organized and engaging presentation of the material can help motivate students to learn and ease the burden of delivering instructional materials for teachers.\

Table 11. Students' scores in Science 7 in terms of Pre-test and Post-test

	Male		Female		All Student-Respondents		
Test	Mean	SD	Mean	SD	Mean	SD	Interpretation
Pre-test	9.10	2.47	10.10	2.85	9.60	2.68	Developing
Post-test	18.15	3.92	19.20	4.89	18.68	4.41	Approaching Proficiency

Legend: 28-34 (Advanced); 21-27 (Proficient); 14-20 (Approaching proficiency); 7-13 (Developing); 0-6 (Beginning).

Table 11 displays the comprehensive outcomes of the pre-test and post-test in science for the Grade 7 students. The male students achieved a mean score of 9.10 with a standard deviation of 2.47 in the pre-test, whereas the female students obtained a mean score of 10.10 with a standard deviation of 2.85. The combined average score for males and females is 9.60 (SD=2.68), indicating that most pupils perform at the developing level. The majority of the kids failed to comprehend the concept of the lesson. Before implementing the contextualized activity tool, students demonstrate inadequate skills in analyzing and deconstructing information to enhance their comprehension of the course. This illustrates the inadequate capacity of students to analyze each statement and deliver an accurate response to each question.

The students' deficient analytical aptitude hindered their ability to respond accurately to each question due to their unfamiliarity with the terminologies employed in the session. However, following the implementation of the contextualized activity tool, the post-test results of the students in the class showed a significant improvement. The average score increased by 18.68 points, with a standard deviation 4.41. These findings indicated that the students were nearing a level of proficiency. Consequently, the outcome suggests that students could employ the contextualized activity tool to effectively examine each issue and reach an accurate solution. The post-test indicated that the student's analytical abilities were evident, as most students thoroughly understood the lesson's key concepts. They could critically evaluate and analyze the given question and provide accurate responses for each question. Using their expertise and perspectives on the topic, they could effectively assess the circumstances, resulting in accurate responses to the provided inquiry. The students' analytical abilities have been enhanced due to their utilization of contextualized activity tools, enabling them to achieve mastery of the learning concept through practical application and demonstration. The students' experience of learning science through collaborative and localized interactive and engaging science activities facilitated a deeper comprehension of the lesson, resulting in improved performance in their assessment.

In addition, the results presented in Table 11 corroborate Meier's (2018) assertion that the presence of an intervention teacher is vital for the academic achievement of students facing challenges in the classroom. An intervention teacher with expertise in special education offers support and guidance to students who demonstrate challenges in conduct, social interaction, and academic performance (Arban et al., 2023). The school's size will dictate whether intervention educators will serve as generalists or be assigned support responsibilities for specific topics.

Contextualizing the material and ideas of the course helps improve students' motivation, retention, and learning. Evidence has shown that including contextualized content in training might enhance students' ability to use prior knowledge and promote more effective problem-solving. Enhancing learning can be achieved by contextualizing knowledge through interactive classroom engagement activities that excite students by highlighting the value of the new topic. On the contrary, contextualizing content promotes metacognition by helping students establish connections between ideas in a tangible and familiar context, thus enhancing their comprehension of these concepts (ASEE Annual Conference & Exposition, 2016).

According to a case study conducted by James et al. (2011), content adaptation is essential to effectively fulfill and address the requirements of students in the classroom. Furthermore, the subject's content is firmly rooted in the cultural, geographic, and socioeconomic contexts where teachers impart knowledge to their students. This comprehension of the significance of commodities is created locally and tailored to the cultural context. Theories of education in mathematics and science emphasize contextual learning, which aims to provide students with a clear understanding of the importance and purpose of their studies by fostering an appreciation for their social and cultural values. It reinforces the perception of the importance of

information that is created locally and is culturally appropriate.

According to the research conducted by Egcas et al. (2017), the authors recommend that schools provide resources to enhance teacher capacity in adapting the curriculum to local needs while still adhering to the existing curriculum guidelines set by the education department. Examples of competency building include developing a teaching approach specific to a particular location, implementing effective methods and techniques, integrating content into instruction, understanding cultural knowledge, and creating high-quality, adaptable instructional materials created by teachers and reflecting the local context.

Garin et al. (2017) proposed that teachers incorporate localized materials, such as examples, exercises, and visualizations, into their statistics instruction to enhance students' academic performance. Curriculum designers can utilize incorporating local data into statistics instruction as a key teaching and learning strategy. To maximize effectiveness, a teacher must utilize exercises, examples, and educational resources that are dependable and specific to the local context. The careful selection of suitable instructional materials is crucial for the success of the course. Although textbooks provide advantages, they must be complemented with additional pertinent resources. Not all educational materials are of the same quality. Certain entities are more conspicuous than others, and their velocities vary.

Moreover, effectively utilizing educational resources requires a comprehensive comprehension of reading and evaluating information. To effectively utilize these resources, reviewing them before the class and subsequently revisiting them alongside your notes is advisable. If you find any concepts perplexing, you should seek additional resources from the instructor or conduct independent research to clarify them (Writer, 2020). As defined by Torres (2015), contextualization is the educational practice of connecting the curriculum to a particular environment, circumstance, or field of application to make the skills and knowledge applicable, significant, and valuable to the learners. Localization refers to connecting educational content outlined in the curriculum and relevant information and materials sourced from the learner's community.

Table 12.test of difference between the pre-test and post-test scores of the respondents

Pre-test		Post-test		t	Df	Sig. (2-tailed)
Mean	SD	Mean	SD			
9.60	2.67754	18.68	4.41087	-12.481	39	.000

***Significant at .01 level*

The table displays a comparative analysis of the pre-test, which had a mean value of 9.60, and the post-test, which had a mean value of 18.68. The analysis revealed a significantly lower p-value of .000. Hence, it can be inferred that there is a substantial disparity in the average results achieved by the Grade 7 students before and after the test. It indicates a substantial enhancement in their science learning outcome, and pupils attained proficiency in the post-assessment. Using everyday life scenarios to establish connections between science and the actual world significantly improved students' proficiency in essential skills. Presenting the lesson using a contextual approach motivates students, as it challenges them to apply scientific reasoning to different contexts and actively engages them in higher-order thinking. The table also demonstrates that students engage in various collaborative activities, actively investigate concepts through practical involvement, and generate explanations for their outcomes within a contextualized framework. Under the guidance of the teachers, students engaged in the analysis, synthesis, and clarification of their ideas, as well as the construction of models.

Furthermore, the substantial disparity between the students' pre-test and post-test indicates that students actively generate novel information through more meaningful and collaborative means by utilizing the contextualized activity tool. They have transitioned from being passive recipients of knowledge. Instead, people examine their existing knowledge and past learning encounters, seek knowledge from each other, and independently uncover information.

The study's findingssupport the assertion made by Picardal et al. (2022) that implementing contextualized training has enhanced students' comprehension of science. High effect sizes and placement on the favorable side of the forest plot characterize each study in the meta-analysis. Enhancements in scientific performance can be associated with several characteristics, such as the year of publication, the location of the study, the research design, the educational level, and the specific topic of science. However, these factors do not significantly influence future learning. Implementing contextualization can enhance students' learning and performance across different contexts. To enhance science education for children, the K-12 basic education system must incorporate contextualization, localization, and indigenization. These findings align with those of Ballesteros (2015), indicating that mostrespondents demonstrate competency levels categorized as "developing" based on their prior grades

in earth science. They exhibited a "positive" disposition towards science; the majority indicated a preference for hands-on learning. The learners' performance in earth science significantly improved after exposure to localized and contextualized science activities, reaching a "proficient" level. Consequently, there was a notable difference in the pre-test and post-test scores of the respondents, indicating a significant relationship between the learners' previous grades in earth science and their performance.

Creus (2019) found a notable disparity in the learners' test scores between the pre-test and post-test. The variability in the students' pre-test scores indicates uniformity; however, the post-test shows that the students in the experimental group fared admirably after utilizing localized educational materials. Based on survey data, the Mean Percentage Score (MPS) of the control group showed a 19.54 increase, whereas the MPS of the experimental group grew to 32.56 following localization. He determined that utilizing localized educational resources leads to elevated levels of student achievement. The selection of content and activities should be derived from the immediate community and educational institution, ensuring its accessibility and comprehensibility.

In addition, Abaiz (2019) determined in his research that although the pre-test scores of both groups were not significantly different, suggesting they were equal and unbiased, there was a significant disparity in the post-test scores of the two groups. This indicates that the students gained more knowledge from the contextualized and localized lesson than the traditional lesson. There was a substantial difference between both groups' pre-test and post-test outcomes. Nevertheless, there was no noticeable disparity in the learning gain scores of the two groups. Consequently, employing contextualized and localized training, along with normal teaching approaches, can enhance students' knowledge and abilities in a way that has long-lasting effects on their learning. In addition, Dioneda (2019) confirmed that the implementation of localization and contextualization strategies proved effective in the instruction of biology.

Table 13. Test of Difference in the Pre-test and Post-test scores of the respondents as to sex.

Sex	Pre-test		Post-test		T	df	Sig. (2-tailed)
	Mean	SD	Mean	SD			
Male	9.10	2.47	18.15	3.92	-9.417	19	.000
Female	10.10	2.85	19.20	4.89	-8.1	19	.000

50

***Significant at .01 level*

Table 13 displays the statistical analysis of the pre-test and post-test scores of the participants based on their gender, indicating a p-value of .000. The female respondents' mean scores in the pre-test are judged to be higher (10.10) than the male respondents' mean scores (9.10). In the post-test, the average scores of the female participants (19.20) were higher than those of the male participants (18.15). Both results exhibited lower p-values, indicating a substantial disparity in the pre-test and post-test scores of the participants based on their gender. The superior marks achieved by the female students indicate their objective proficiency in completing the learning activity. They adhere to the instructions of the activity and establish educational objectives for themselves. They have higher standards compared to guys. They strongly desired to engage actively in their learning and consistently sought clarification by asking questions whenever they faced difficulties or misunderstandings regarding the lesson's content.

According to Gnaulati (2014), girls excel academically compared to boys due to their higher propensity for strategizing, goal-setting, and diligent effort toward achieving their objectives. They exhibit a higher propensity to formulate strategies in advance proactively, set educational objectives, and diligently strive to attain those objectives. Moreover, girls exhibit a higher propensity than boys to experience intrinsic satisfaction from organizing their work and possess a stronger inclination to please themselves and their professors.

According to Ullah (2019), after examining multiple research conducted in different societies, it can be concluded that there is a noticeable worldwide pattern of girls surpassing boys in academic performance. The review highlights the superior academic performance of girls compared to boys in higher education, school, and college. The problem is more intricate than the simplistic assertion that "girls are currently surpassing boys in academic performance." Nevertheless, the underperformance of boys differs throughout societies and even within a single community due to many causes.

According to an article from The Economist from 2015, girls achieve better academic results than their male colleagues. To begin with, girls exhibit a higher propensity for reading than boys. Reading competency is the fundamental basis for all other forms of learning. Boys' proficiency in other academic disciplines is negatively impacted when they have difficulties in reading. Furthermore, girls require a greater amount of time to complete their assignments. On average,

boys allocate less than four and a half hours a week to homework, while girls dedicate five and a half hours.

Girls consistently exceed boys in academic achievement, especially in mathematics and science, regardless of age. Based on a comprehensive survey of academic performance encompassing 1.6 million students throughout elementary, high school, and college levels, it has been shown that girls consistently outperform boys across all age groups. Australian researchers say this encompasses disciplines such as science, technology, engineering, and mathematics (Fox, 2018).

In addition, Hilburn (2014) also stated that a new study examining academic achievement in over 30 countriesover a century found that girls consistently outperform boys in math, science, and other areas. In achievement exams, where gender disparities often align with stereotypical patterns, and boys tend to outperform in math and science, females possess an edge irrespective of the subject area.

According to the results of PISA 2009, girls demonstrate superior performance compared to boys in 21 out of the 65 nations and economies. Conversely, boys outperform girls in 11 nations, while there is no significant disparity in performance between the sexes in 33 nations. Girls in four partner economies (Albania, Dubai (UAE), Jordan, Kyrgyzstan, and Qatar) and one partner economy demonstrate a substantial academic advantage in science, surpassing boys by 20 points. Boys in Colombia are the only ones who outperform girls by a margin of at least 20 points. The OECD nations exhibiting the most significant disparities in gender performance, ranging from 10 to 20 points, include Finland, Slovenia, and Turkey, where girls outperform boys, and Denmark and the United States, where boys outperform girls (OECD, 2011).

The study by Taylor & Francis Group (2022) revealed that girls often achieved superior grades, even when they possessed equivalent intellectual qualifications to those of guys. An extensive study involving many students and teachers has revealed that ladies often achieve superior marks compared to guys with similar academic capabilities. When utilizing the outcomes of standardized assessments, which employ a predetermined scoring framework, it is often observed that females consistently surpass males in humanities, languages, and reading skills, while males excel in mathematics. Nevertheless, when educators evaluate academic performance, females consistently surpass males.

IV. CONCLUSION

The study's findings lead to the following conclusions: A notable difference exists between the pre-test and post-test results of the students who used the contextualized activity tool. There is a notable disparity in the scores of students who took the pre-test and post-test when categorized by gender.

The study's results and conclusions indicate that due to the limited sample size of forty (40) respondents, it is recommended that all Grade 7 pupils in the school be included as respondents to enhance the study's reliability.Since the study revealed the effectiveness of using the contextualized activity tool for enhancing Grade 7 science competencies, it is suggested that the study be conducted at a different grade level.

School administrators may support the reproduction of the contextualized activity tool, for this can help enhance science competencies and improve the learning outcomes of students in the school. Since contextualization has improved students' assessment, teachers may be encouraged to incorporate contextualization into all subject areas' teaching and learning processes. Future researchers may as well consider the contextualized activity tool and incorporate it into their studies to further validate the study's findings. Training and seminars on creating instructional materials, workbooks, and modules are recommended for school administrators to train teachers to create instructional materials to help learners improve their learning outcomes.

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