ONLINE CONTEXTUALIZED PERFORMANCE TASK-BASED ASSESSMENT USING GRASPS MODEL IN SCIENCE, TECHNOLOGY, AND SOCIETY

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Abstract

The primary purpose of the study was to provide a strategy and authentic assessment for the teachers, especially in GEC 107 during the Pandemic, and to answer the question; how effective the online contextualized performance task-based assessment is using the GRASPS Model in Science, Technology, and Society for non-Science students. Specifically, it sought to determine the level of the acceptability of the Goal, Role, Audience, Situation, Performance/Product, and Standards (GRASPS) Model as an online contextualized performance task-based assessment in terms of content, relevance, and mechanics, the perceptions of non-science-related students on the use of the Online Contextualized Performance Task-Based Using the GRASPS model, the mean performance of the students based on the GRASPS Model's Online Contextualized Performance Tasks, the significant difference in the acceptability of the GRASPS Model as Online Contextualized Performance Task-Based as rated by students and experts, and the description students' experiences using the GRASPS model using Online Contextualized Performance Task-Based. The researcher used the mixed-method convergent parallel research design, and data integration approaches employed to test the hypothesis and ensure accuracy truly. The respondents were students and experts from Laguna State Polytechnic University-Sta. Cruz campus who were purposively selected for the quantitative aspect of the study, and in qualitative aspect the students selected through rubrics as the criteria to consider. From the findings gathered, both group of respondents evaluated the level of acceptability of GRASPS model in terms of content, relevance, and mechanics as very high. From the given result, it can be implied that there is no significant difference in the rating of the two respondent groups. Therefore, the null hypothesis is accepted. Overall, the respondents believed that the GRASPS model is a practical knowledge acquisition and learning strategy for non-science-related students. The mechanism of the GRASPS model follows a systematic methodology, prolongs knowledge, and applies the ideas obtained to real-life problems, making it easier to understand the immediate challenges of promoting scientific literacy. This makes it easier to understand the importance and impact of science and technology on society. The respondents got involved and began to love science. It integrates knowledge and skills to solve real-life problems, allows students to experience challenges in real-life situations, and deepens their understanding of important academic content.

Keywords: authentic assessment, GRASPS Model, GEC 107, Science, Technology, and Society, non-Science students, mixed-method convergent parallel research design, and data integration, contextual task-based online performance

1. INTRODUCTION

The Organization for Economic Co-operation and Development (OECD) (2016) states that digital technology has a major impact on education today, transforming how students learn, communicate, engage in and enjoy social activities. They also promoted innovations in many different strategies, even in teaching and learning. The ability of technology to innovate depends on the level of digital skills teachers and learners acquire. It is no wonder that while students were studying, there was a very strong correlation between the education and skills they acquired using digital techniques in various activities. Therefore, the role of education and skills in driving innovation is critical.

Innovation doesn`t happen in one place, but it requires openness and interactions between students, teachers, and their learning mode. This is also very much the case for distance education today. Universities cannot be left alone in these trying times, especially to make the difficult transformation process just to continue education amidst COVID19. They need support not only through policies but also from other effective strategies and stakeholders. In recent years of this new normal, the emergent education industry has taken on a critical role. This role is defined not only by education but also by online learning in schools and is increasingly framed in a broader interest in true innovation.

The outbreak of COVID19 has affected education in the Philippines, including university-level scientific learning. The Online Contextualized Performance Task-Based Assessment Using GRASPS Model in Science, Technology, and Society aims to demonstrate the practice of learning science from home-based online performance tasks using a contextual learning approach. Inspired by Alipasa, 2020, and Iter, 2017, this study consists of G (goal), R (role), A (audience), S (situation), P (product/performance), and S (standards). This model develops a genuine evaluation by creating performance tasks and evaluating different products/performances using different rubrics. In addition, the researcher strives to develop effective learning strategies at home based on hands-on learning.

A performance task is a learning activity or assessment that asks students to perform to demonstrate their knowledge, understanding, and proficiency. Performance tasks yield a tangible product and performance as evidence of learning. The researcher used the First Year Bachelor of Science in Accountancy non-science-related students of LSPU-SCC to nurture scientific literacy and love for science. Even if they are in line in business courses, these students also need to explore science and technology for society's development, improvement, and innovation. It also promotes a collaborative and student-centered learning experience.

Through this, teachers/professors can be assured that students are learning even at home. Students would not find science boring and difficult to understand because they would experience and engage with different activities online. The researcher finds out how students and teachers agree to distance learning. Distance learning is challenging for both sides, but from this study, not only do students learn, but teachers provide quality education despite the pandemic. Teachers aim to form this generation with ability and compassion. There is no reason to stop education. They would find a way only for the future of their students.

1.1 Statement of the Problem

The main purpose of this study was to provide a strategy for the teachers, especially in GEC 107, during this pandemic and to answer the question; How effective is Online Contextualized Performance Task-Based Assessment Using GRASPS Model in Science, Technology, and Society for Non-science-related Related Students?

Specifically, this study sought to answer the following questions:

1. What is the level of the acceptability of the GRASPS Model as an Online Contextualized Performance Task-Based assessment in terms of:
1.1.   Content;
1.2.   Relevance; and
1.3.   Mechanics

2. What is non-science-related students' perception of using the Online Contextualized Performance Task-Based assessment Using the GRASPS model?

3. What is the mean performance of the students based on the GRASPS Model's Online Contextualized Performance Tasks?

4. Is there any significant difference in the acceptability of the GRASPS Model as an Online Contextualized Performance Task-Based assessment as rated by:
4.1.   Students; and
4.2.   Experts

5. How do the non-science-related students describe their experiences with using Online Contextualized Performance Task-Based assessment using the GRASPS model?

2. METHODOLOGY

2.1 Research Design

The researcher decided to employ a mixed-method research design because it allowed the researcher to collect both quantitative and qualitative data at the same time, taking into account both perspectives. It offers the advantages of both methods. Creswell and Plano Clark explained in 2014 that mixed-method research is a study design that includes philosophical assumptions and research methods. The central premise is that the combination of quantitative and qualitative approaches would give a better understanding of the research problem than using either approach alone.

The researcher chose the convergent parallel design. Razali et al., (2019) pointed out that the mixed approach of convergent parallel design is to comprehensively analyze research problems by converging or merging quantitative and qualitative data. In this design, researchers typically collect data in both formats simultaneously, prioritize methods equally, make the data analysis independent, and mix the results during the overall interpretation of the two data sources. Look for convergence, divergence, contradictions, or relationships.

2.2 Respondents of the Study

According to Alchemer (2021), purposive sampling, also known as judgmental, selective, or subjective sampling, is a form of non-probability sampling in which researchers rely on their judgment when choosing members of the population to participate in their surveys.

In this study, 49 1st-year students of LSPU-SCC CBMA BS Accountancy would be the participants in the implementation of the GRASPS Model as an online contextualized performance task-based assessment in GEC 107: Science, Technology, and Society. They are the Non-science-related students that experienced Science Learning at home and are empowered with collaborative and independent learning. Because of Slovin's formula, the researcher came up with 40 total respondents from CBMA Students, 20 students from BSA 1A, 20 students from BSA 1B, and another 40 experts to answer the survey.

To conduct the Online focus group interview the researcher used the criteria made standards retrieved from Linways Technologies Pvt. Ltd. (2021) to pick the selected 5 students from BS Accountancy 1st year students. The researcher also randomly selected Forty (40) Experts to test the acceptability of online contextualized performance task-based assessment using the GRASPS Model in Science, Technology, and Society. Implementing the GRASPS model as contextual task-based online performance, the researcher also measured the performance of non-academic students based on the content, evidence, and clarity of each activity's presentation.

2.3 Research Instrument

For quantitative, the primary instrument used in collecting data in this study was the Likert Scale for the questionnaire. It was made to determine the acceptability of Online Contextualized Performance Task-Based and is composed of three (3) parts: Content, Relevance, and Mechanics. Each question is answerable using the five (5) Likert scale with the designated verbal interpretation of the research shown in Table 2. The researcher gathered data through the evaluation process utilizing selected 80 respondents. After evaluation, the data were tabulated and interpreted.

Numerical data	Scale	Content	Relevance	Mechanics
4.20 – 5.00	5		Highly Acceptable	
3.40 – 4.19	4		Acceptable	
2.60 – 3.39	3		Moderately Acceptable	
1.80 – 2.59	2		Less Acceptable	
1.00 – 1.79	1		Not Acceptable	

The Likert scale also served as a secondary research tool for assessing the performance of non-science-related students. It consists of three parts: content, evidence, and clarity. Each question can be answered using four (4) Likert scales with the specified oral interpretation of the survey shown in Table 3. Researchers collected data through an evaluation process using an implementation of Online Contextualized Performance Task-Based using the GRASPS model. There are two sections of respondents, BSA 1A and 1B, each of which is divided into five (5) groups. After evaluation, the data were tabulated and interpreted.

Numerical data	Scale	Content	Evidence	Clarity
3.51 – 4.00	4		Above Standards	
2.51 – 3.50	3		Meet Standards	
1.51 – 2.50	2		Below Standards	
1.00 – 1.50	1		Far Below Standards	

For qualitative, after the researcher implemented the GRASPS Model in each topic of STS, it gave way to the collection of data from the Online Focus Group Interview and made it easy through rubrics to select the five (5) right students for this study.

2.4 Statistical Treatment

The calculations made were based on the data gathered from the respondents that had been analyzed and interpreted. The calculations were based on the data gathered from the respondents that had been analyzed and interpreted. The responses of the selected respondents were organized and tabulated. Then, these data were subjected to the statistical tool to arrive at the desired results.

Purpose	Statistical Treatment
1. **Validity of survey questionnaire.** 2. **Performance of the Non-science-related Students**	Mean, Standard Deviation
3. **Acceptability of Online Contextualized Performance Task-Based Assessment Using GRASPS Model in Science, Technology, and Society**	Standard Deviation, T-test

3. RESULTS AND DISCUSSION

This section is composed of the presentation, analysis, and interpretation of data to measure the acceptability and the performance of non-science-related students in each topic of Online Contextualized Performance Task-Based Assessment Using GRASPS Model in Science, Technology, and Society and its effectiveness for non-science-related Students.

1. What is the level of the acceptability of the GRASPS Model as an Online Contextualized Performance Task-Based assessment in terms of:
1.1.   Content;
1.2.   Relevance; and
1.3.   Mechanics

The content was one of the variables for testing acceptable levels of contextualized online performance based on tasks using the GRASPS model of science, technology, and society. Contextualized task-based online performance using the content of the GRASPS model has been shown to apply a higher level of thinking through a true task-based learning experience and meaningful context. It can develop different perspectives and share reality. The content of online contextualized performance task-based using the GRASPS model encouraged the students to reflect on the situation given and show their intelligence, talent, and creativity. It promoted experiential and independent learning among college students.

STATEMENT	STUDENTS			EXPERTS		
	MEAN	SD	REMARKS	MEAN	SD	REMARKS
1. The GRASPS Model as Online Contextualized Performance Task-Based activity content is appropriate to the subject matter.	4.90	0.30	Highly Acceptable	4.88	0.33	Highly Acceptable
2. Its activity content increases my science understanding.	4.88	0.33	Highly Acceptable	4.83	0.38	Highly Acceptable
3. It leads to the new construction of ideas about science, technology, and society.	4.88	0.33	Highly Acceptable	4.88	0.33	Highly Acceptable
4. It promotes scientific literacy.	4.85	0.36	Highly Acceptable	4.73	0.45	Highly Acceptable
5. The activity content helps me to synthesize new information even at home.	4.85	0.36	Highly Acceptable	4.73	0.45	Highly Acceptable
6. It applies students' higher-ordered thinking skills that develop different viewpoints.	4.88	0.33	Highly Acceptable	4.83	0.38	Highly Acceptable
7. It deepens students' understanding of key academic content.	4.83	0.38	Highly Acceptable	4.88	0.33	Highly Acceptable
8. It helps students to process and foster the real-life transfer of learning.	4.80	0.41	Highly Acceptable	4.90	0.30	Highly Acceptable
9. It develops a more authentic assessment learning experience.	4.83	0.38	Highly Acceptable	4.88	0.33	Highly Acceptable
10. It provides clear roles, learning experiences, and content to support students' new ways of learning.	4.83	0.38	Highly Acceptable	4.83	0.38	Highly Acceptable
Overall Mean	4.85			4.83		
SD	0.36			0.37		
Verbal Interpretation	Very High			Very High		

Rating		Scale	Remarks
5	-	4.21 – 5.00	Highly Acceptable
4	-	3.41 – 4.20	Acceptable
3	-	2.61 – 3.40	Moderately Acceptable
2	-	1.81 – 2.60	Less Acceptable
1	-	1.00 – 1.80	Not Acceptable

Table 1. Level of Acceptability of the GRASPS Model as Online Contextualized Performance Task-Based in terms of Content

Table 1 illustrates the level of acceptability of the GRASPS Model as Online Contextualized Performance Task-Based in terms of Content.

The evaluation was made by the two groups of respondents. The first group was the students. As seen in the table, the evaluation of the content of the GRASPS model was Very High with the (M=4.85, SD= 0.36). The students observed that the overall content of the GRASPS Model was appropriate to the subject matter and helped them experience a new way of learning. On the other hand, the content of the GRASPS model, as seen in the activity, increases a deeper understanding of science topics (M=4.88, SD=0.33). This implies that the activity helped the learners to synthesize new information.

The second group made a similar evaluation of respondents, which are the experts (university instructors). The content of the task in the GRASPS model process the transfer of real-life learning (M=4.90, SD=0.30). Furthermore, the content of the task applies to students' higher-ordered thinking skills. This implies that almost the same observation was seen in the evaluation in terms of the content of the GRASPS model being Very High with the (M=4.83, SD= 0.37).

The results show that both students and experts rated the GRAPS model content as highly acceptable. On the other hand, in the qualitative aspect of the study, the five selected students had a perception of the GRAPS model's content. They have this awareness of how they facilitated learning. The content of the GRASPS model made it as easy as possible for students to understand and learn about science, technology, and society. It supported their needs and provided a clear and organized process of knowledge transfer and learning experience, helping students better understand important academic content and integrate new information at home. These were some statements of the students regarding the perception of the GRASPS model's content:

Student B: "Yes, the content greatly aids my understanding of the topic because it is relevant to the subject."

*Student C: "Yes, it helps me easily understand the topics because the goal and everything are clear and organized. In additio*n, it is ea*sier for us to know the obje*ctives of our instructor/school.*"*

*Student E: "Yes, the GRASPS Model as Online Contextualized Performance Task-*Based in STS helps me understand the topic/s easily. Why? Because the purpose of the performance task became more precise and clearly stated. It also allows us, students, to experience challenges when facing real-*life situations."*

Also, all of the first five topics in STS caught students' attention. These are the subjects for researchers to complete online contextualization performance tasks based on the GRASPS model; Historical precedents where social considerations changed the course of science and technology, the intellectual revolution that defined society, science and technology, and national construction, science education implemented in the Philippines, science, and technology of the indigenous people of the Philippines. They digest all the information they receive. They can learn it as they complete the task and gain better insights because they can easily understand STS at home. They also know how to convey rubrics, evaluation expectations, and the right learning approach. These were some statements of the students:

Student B: " So far, my favorite topic has been the Introduction to STS because it has provided me with additional knowledge and has helped me fully understand how science, technology, and society are interconnected. Science is the main idea, while technology assists us in determining how it would be applied and, finally, the society in which it would be applied"

Student D: "Actually, through this online contextualized performance task-based, I can digest our all lessons, which are about historical antecedents of science and technology, intellectual revolutions that defined society, science and technology and nation-building, science education in the Philippines, and the indigenous science and technology in the Philippines even though it contains many pieces of information."

Student E: "And the topic in STS that is easier for me to understand using the GRASPS model is the performance tasks in modules 1-5 wherein, we as a group played the role of advocate leaders, researchers, president of the Philippines, teachers, and scientists that help the environment and society and this topic focuses on the issues and problem in STS, and for that, we have gained a better insight and additional knowledge regarding the topic and also because of that, we discover the pros and cons of our roles regarding on what they do. We better understand how it impacts and contributes to our current well-being as humans. As a result, we understand the value of studying STS as an academic field because it helps us tackle a societal issue or problem. To conclude, we have gained a better understanding of our topics because of the use of the GRASPS model. As it includes clear communication of rubrics, assessment expectations, and appropriate approaches to learning."

From Hammond (2021), a revisiting of the GRASPS model for project-based learning, the GRASPS model more clearly expresses the purpose and content of project-based or performance task-based queries through the way GRASPS queries are designed. As a result, the request's goal, content, and purpose would be clearer. In short, the content is simple, clear, and organized for students to understand. Based on Wiggins and McTighe's 2012 design understanding, accomplishment tasks use goals, roles, audience, situations/scenarios, products, and standards to give students an understanding of important academic content and processes. Deepen and facilitate the transmission of actual learning. And the Success Criteria (GRASPS) model. This also serves the defined purpose of performance tasks by the Ministry of Education. By running and learning the process, students can generate new ideas through the content of the GRASPS model.

The relevance between the task-based online contextualization achievement model using GRASPS and the student's actual learning experience tests the acceptance of the task-based online contextualization achievement model using GRASPS in science, technology, and society. It was one of the variables. Contextualized online performance based on the relevance of the GRASPS model allows students to experience challenges in real-life situations, solve these problems, find solutions, address situations, and see different perspectives. It was shown to be able to develop.

STATEMENT	STUDENTS			EXPERTS		
	MEAN	SD	REMARKS	MEAN	SD	REMARKS
1. The GRASPS Model as Online Contextualized Performance Task-Based relevant to the subject matter's content.	4.83	0.38	Highly Acceptable	4.83	0.38	Highly Acceptable
2. It is relevant to the subject matter's objectives.	4.88	0.33	Highly Acceptable	4.83	0.38	Highly Acceptable
3. It treasures the importance of science and technology in society.	4.90	0.30	Highly Acceptable	4.88	0.33	Highly Acceptable
4. It helps to integrate knowledge and skills to solve real-life problems.	4.88	0.33	Highly Acceptable	4.85	0.36	Highly Acceptable
5. It is relevant to produce and manage solutions for the issues faced by society.	4.83	0.38	Highly Acceptable	4.80	0.41	Highly Acceptable
6. It makes related reflections and shares real-life experiences.	4.88	0.33	Highly Acceptable	4.80	0.41	Highly Acceptable
7. It allows students to experience challenges when facing real-life situations.	4.88	0.33	Highly Acceptable	4.83	0.38	Highly Acceptable
8. It made students use the experts' (professionals) experiences in real life.	4.83	0.38	Highly Acceptable	4.83	0.38	Highly Acceptable
9. It provides an authentic context to their own lives.	4.83	0.38	Highly Acceptable	4.85	0.36	Highly Acceptable
10. In the relevance of their own experiences, students acquire a critical and creative type of learning.	4.90	0.30	Highly Acceptable	4.80	0.41	Highly Acceptable
Overall Mean	4.86			4.83		
SD	0.35			0.38		
Verbal Interpretation	Very High			Very High		

Rating		Scale	Remarks
5	-	4.21 – 5.00	Highly Acceptable
4	-	3.41 – 4.20	Acceptable
3	-	2.61 – 3.40	Moderately Acceptable
2	-	1.81 – 2.60	Less Acceptable
1	-	1.00 – 1.80	Not Acceptable

Table 2. Level of Acceptability of the GRASPS Model as Online Contextualized Performance Task-Based in terms of Relevance

Table 2 illustrates the level of acceptability of the GRASPS Model as Online Contextualized Performance Task-Based in terms of Relevance.

The two groups evaluated respondents. The first group was the students. As seen in the table, the evaluation of the context of the GRASPS model was Very High with the (M=4.86, SD= 0.35). The students observed that the overall relevance of the GRASPS Model was relevant to their own experiences. Students acquire a critical and creative type of learning. On the other hand, the relevance of the GRASPS model, as seen in the activity, treasures the importance of science and technology in society. (M=4.90, SD=0.30). This implies that the activity is relevant and allows students to experience challenges when facing real-life situations.

The second group evaluated respondents similarly, which are the experts (university instructors). The relevance of the GRASPS model, as seen in the activity, treasures the importance of science and technology in society. (M=4.90, SD=0.30) same as the students. Furthermore, it helped to integrate knowledge and skills to solve real-life problems. This implies that almost the same observation was seen in the evaluation in terms of the relevance of the GRASPS model being Very High with the (M=4.83, SD= 0.38).

Both students and experts evaluated that the acceptance of the GRAPS model's relevance to the learning experience was highly acceptable, and from focus group interviews, five students were selected from the rubrics. They explained the learning experience concerning the relevance. What they were given was a fun and interactive way of learning. The relevance of the GRASPS model helps students integrate their knowledge and skills to solve real-world problems, and through the relevance of their experiences, students learn critical and creative learning methods. For them, as non-science-related students, the GRASPS model is very important to them. It helps them deal with the new normal setup. They used digital skills to integrate, organize ideas and acquire new knowledge. Online education has been a challenge for them, but completing the task helps them adapt and gain new insights. Here are some statements of the non-science-related students about the relevance of their experience in the new normal set-up to the performance tasks they did:

Student A said: *"I must say that the new normal set-*up has provided a large learning
capacity that integrates modern technology. And it's important to remember that even in a new normal set-up, we can cope in numerous ways. As a non-science-related student, The GRASPS Model was beneficial and is used to create a better-organized manner of learning *through assignments and assessments that benefited us as students."*

Student B said: *"Apart from the fact that it generates new kn*owledge even at home,
the GRASPS Model is essential because it has assisted a non-science-related student like me in easily adapting and expanding my understanding of science. After all, the additional information we gained from its content is appropriate *to its subject matter."*

Student E said: *"As a non-*science-related student, the GRASPS model is important for
while learning in the new normal set-up because it helps us understand the topic that was being discussed a lot better by doing the performance task. The assessment associated with the inquiry is structured around the following expectations and goals of both students and teachers, and because of this, the sequence of events being presented to us students can be better understood. So with that, the GRASPS model means that we could effectively know how a scientist thinks or how they focus and devote their time to a study. Working with the group and reporting it to our classmates contributes a lot to our knowledge and helps us to know the subject even more. As students, we have improved our thinking and communication skills since using the GRASPS model, we learned how to present our *outputs coherently and efficiently."*

In relevance to students' learning experience, they enjoyed performing performance tasks with their classmates and groupmates. Because they enjoyed different roles in each performance, especially scientists, advocates, presidents, researchers, teachers, and thinking, they saw all the roles they had and the important purpose of all the presentations that were excited to have fun while learning. Make relevant considerations and share real-life experiences. It is appropriate to develop and manage solutions to social problems. These were some statements of the students:

Student A: *"Yes, I* enjoy using it, particularly in Modules 1-5: Performance Task 1-5, where it is organized in such a way that we can GRASPS what goals we must achieve. Next, what is our role in responding to the situational questions that have been presented, as well as who is our target audience, where we can demonstrate our strength in formulating the theme of our presentation, and finally, *what performance and standards we must be aware, to develop a great output."*

Student B: *"Yes, I enjoyed learning while engaging in t*he activities because I gained additional knowledge while recalling the lessons we covered. While participating in the activities, I felt both nervous and excited because I couldn't help but wonder if what I was doing *and my answer were correct."*

Student E: *"Yes, because by the use of the GRASPS Model, every time we have an activity helps us, students, to enhance our knowledge* regarding the topic, and at the same time, it was entertaining learning when everyone in the group is contributing something that could make every answer in every question valid and reasonable. While doing the performance tasks using the GRASPS model in each activity, I experienced how important it is to come up with a good purpose since we should think like scientists in those perfor*mance tasks."*

They also enjoyed it because it's easy to follow in any direction the GRASPS model gives. It also produces meaningful results and output from each performance task. It provides a genuine context for their lives and appreciates science and technology's importance in society. Here are some of the answers of the students:

Student C: *"Yes, I enjoy learning while doing the activities with the use of the GRASPS model. The first performance task we* had was easier for us to do because everything was organized, from the goal to the standards of the activity. We can do it easily because we have *the GRASPS. All we need is to answer and follow the model."*

Student D: *"Yes. At first, I am wondering why our performance task contains goal, role, audience, s*ituation, product, and standard. But as we finished our activity, I realized that it plays a great role in our learning experience as it brought meaningful results and benefits *for our group."*

Revisiting the GRASPS model for project-based learning from Hammond (2021) again, it develops a full-fledged learning experience because the GRASPS Model allows students to identify a more authentic learning experience that drives our unit of inquiry. Guide you in choosing the learning experience, content, and skills you need to succeed. By planning the unit around the GRASPS framework, teachers can think critically and creatively about the types of learning experiences needed to support their inquiry. As Gündogan and Gültekin pointed out in 2018, the content of the GRASPS model is a real task-based learning experience, formulating GRASPS for students, applying higher levels of thinking, and developing different perspectives, and developing different perspectives. Share real-world experiences, collaborate and collaborate with others, communicate outside the classroom, play multiple roles, and bring the real context to your own, with appropriate reflection through meaningful contexts involved. Associate with life and take advantage of the real experience of professionals.

The mechanics of the task-based online contextualization performance model using the GRASPS model was one of the variables to test the acceptance level of the task-based online contextualization performance model using the GRASPS model in science, technology, and society. This layout device reinforces common performance challenges with an emphasis on context and position play. Acronyms represent stages within a process that consist of goals, roles, audiences, situations, overall product performance objectives, and potentially standards developed for success. The mechanism of the GRASPS model has evolved the student's intellectual learning process. The students encouraged and substantiated the organization of their ideas, the evidence collected, and the presentation of their creative knowledge. The GRASPS model motivated students to go beyond talent, skill, and creativity.

STATEMENT	STUDENTS			EXPERTS		
	MEAN	SD	REMARKS	MEAN	SD	REMARKS
1. The GRASPS Model as Online Contextualized Performance Task-Based mechanics follow a systematic methodology based on evidence.	4.80	0.41	Highly Acceptable	4.80	0.41	Highly Acceptable
2. Its mechanics improves my personal decisions with my groupmates.	4.83	0.38	Highly Acceptable	4.78	0.42	Highly Acceptable
3. It helps to interact with each other.	4.83	0.38	Highly Acceptable	4.75	0.44	Highly Acceptable
4. It pursuits and applies knowledge while doing the online task.	4.85	0.36	Highly Acceptable	4.73	0.45	Highly Acceptable
5. The mechanics pro-longs knowledge while doing and finishing the online tasks.	4.80	0.41	Highly Acceptable	4.78	0.42	Highly Acceptable
6. The purpose of inquiry in every task is clear.	4.85	0.36	Highly Acceptable	4.90	0.30	Highly Acceptable
7. The methodologies developed to assess well-being from the personal perspective of the students contribute useful, relevant, and reliable data to society.	4.88	0.33	Highly Acceptable	4.88	0.33	Highly Acceptable
8. The teacher can construct a scenario from a performance task that leads students to role-play.	4.85	0.36	Highly Acceptable	4.88	0.33	Highly Acceptable
9. It allows students to communicate and cooperate with others outside of the class environment.	4.88	0.33	Highly Acceptable	4.85	0.36	Highly Acceptable
10. It has a clear communication of rubrics, assessment expectations, and approaches to learning.	4.93	0.27	Highly Acceptable	4.85	0.36	Highly Acceptable
Overall Mean	4.85			4.82		
SD	0.36			0.39		
Verbal Interpretation	Very High			Very High		

Rating		Scale	Remarks
5	-	4.21 – 5.00	Highly Acceptable
4	-	3.41 – 4.20	Acceptable
3	-	2.61 – 3.40	Moderately Acceptable
2	-	1.81 – 2.60	Less Acceptable
1	-	1.00 – 1.80	Not Acceptable

Table 3. Level of Acceptability of the GRASPS Model as Online Contextualized Performance Task-Based in terms of Mechanics

Table 3 illustrates the level of acceptability of the GRASPS Model as Online Contextualized Performance Task-Based in terms of Mechanics.

As seen in the table, the evaluation of the mechanics of the GRASPS model was Very High with the (M=4.85, SD= 0.36). The students observed that the overall mechanics of the GRASPS Model has the methodologies developed to assess well-being from the personal perspective of the students and contribute useful, relevant, and reliable data to society. On the other hand, the mechanics communicate rubrics, assessment expectations, and approaches to learning (M=4.93, SD=0.27). This implies that the mechanics of the tasks allowed students to follow a systematic methodology based on evidence.

The second group evaluated respondents similarly, which are the experts (university instructors). The mechanics of the GRASPS model, as seen in the activity, have the purpose of inquiry in every task straightforwardly (M=4.90, SD=0.30). Furthermore, it helped the teacher construct a scenario from a performance task that leads students to role-play. This implies that almost the same observation was seen in the evaluation in terms of the relevance of the GRASPS model being Very High with the (M=4.82, SD= 0.39).

Both students and experts were very tolerant of accepting the mechanism of the GRASPS model, and from interviews with focus groups, five selected students developed new ideas and characteristics for the mechanism of the GRASPS model from the qualitative aspect of the study. Here's a summary of how it helped students build their creativity. Methods developed to assess happiness from a student's perspective provide socially useful, relevant, and reliable data. The mechanism strengthens personal choices with groupmates, and the purpose of investigating each task is evident. Students also acquired different learning habits, including time management, self-motivation, self-discipline, responsibility, creativity, obedience, enthusiasm for learning, and extra effort in what they are doing. The GRASPS model not only develops the acquired knowledge but also builds the student's learning characteristics. Students in the 21st century want to learn, so doing things while learning is fun. Here are some answers from the non-science-related students:

Student A: *"Because the GRASPS Model is simplified and arranged, it helped me develop various study habits. Although, for exa*mple, the Performance Task uses GRASPS Model that provides simple and direct-to-the-point instructions, I developed time management in each activity. As a result, I save time when it comes to analyzing the activities. In addition, I learned how to organize ideas and test *various strategies."*

Student B: *"I learned to be self-*motivated and self-disciplined due to my experiences. Responsibility comes with the freedom and flexibility of the online environment. However, to keep up with the process flow, the online process necessitates a significant amount of commitment and discipline. Before beginning the task, it is critical to read the instructions carefully. Also, to see if I have a stable internet connection, I would be unable to complete tasks in STS effectively if I *have a problem with my connection."*

Student D: "Honestly, I learned how to be obedient. In doing task performance, I always think outside the box, not realizing that I might miss the pieces of information needed in performing activities. But through the GRASPS Model, I am sure my ideas would bring a meaningful result to our group as there are certain directions to follow which contain goal, role, audience, situation, product, and standard."

*Student E: "One of the characteristics or study habits that I ha*ve gained while doing the Online Contextualized Performance Task-Based Assessment Using GRASPS Model in Science, Technology, and Society is that it eagers me to research more about a certain topic that was discussed to us to have a more clarified understan*ding in some terms that I didn't know or I want to know more. Even though* it took me much time to study and analyze the questions that I need to answer, and with that it allows me to manage my time. However, this work helped me to put extra effort into finding the answers to every question. And providing a good solution to every problem, especially, we as a student should know how to express our understanding so that we can have effective learning and so that our teachers would know if we have learned some information from them. And with this performance task using the GRASPS model, we learned how *to study with the group as it allows us to exchange information for better results of ideas and presentations."*

For non-science-related students, the GRASPS model is an effective knowledge acquisition and learning strategy. The mechanism of the GRASPS model follows a systematic methodology, prolongs knowledge, and the ideas obtained can be applied to real-world problems, making it easy to understand the task set that promotes scientific literacy. Furthermore, this makes it easier for them to understand the importance and impact of science and technology on society. These were some statements of the students regarding the perception of the GRASPS model's mechanics:

Student B: "It is very effective because, aside from promoting scientific literacy, it allows me to learn new things because its mechanics adhere to a systematic methodology based on evidence. It also pursues and applies knowledge while performing an online task, and it *introduces me to a better way of understanding the STS."*

*Student D: "Overall, using GRASPS Model in our subject, Science, Technology, and Society, to non-*science-related related students like me is recommendable. Honestly, science has been my weakness since elementary, but through this model, I can deepen my knowledge of a forte that I am not good at. It also gives me this importance on how science and technology develop and help our society *today."*

*Student E: "Overall, the Online Contextua*lized Performance Task-Based Assessment Using GRASPS Model in Science, Technology, and Society as a Non-science-related Related Students is very effective because it presents a clearer presentation of the purpose and content of the topic, and it allows us, students, to demonstrate our understanding with some options in the performances and products. It helps us students improve our learning experience and evaluate the effectiveness of lesson plans. The GRASPS model measures how well we understand and apply the knowledge we've learned to a certain problem that arises in our society, and it doesn't focus on what knowledge we recall regarding the topic. It seems that what we have learned in our subjects is more important because we can apply it to ourselves and society, rather than just memorizing one-by-one definitions of terms in each topic that has been discussed every time *that we have a task to do."*

O`Toole, & Kropf, (2012) pointed out that students have to be expertise manufacturers and are now no longer the handiest expertise clients or keepers. The query is how this would be achieved. Allowing college students to enjoy demanding situations while dealing with real-lifestyles conditions and remedy those troubles permits them to provide solutions, control conditions, and increase distinct perspectives. These techniques combine expertise and abilities in numerous ways. Thus, methodologies need to be advanced to evaluate wellness from the non-public angle of kids and younger people that could make contributions useful, relevant, and dependable statistics; those statistics can then be a foundation for coverage formulation, implementation, and evaluation.

In 2015, Mayes & Myers pointed out that the performance task GRASPS a mechanism is a design tool for developing performance tasks with an emphasis on context and role-playing. Acronyms represent steps in a process that include goals, roles, audiences, situations, product performance, objectives, and standards that are the criteria developed for success. The GRASPS design tool contains stem statements that teachers can create in performance task scenarios and rubrics to evaluate student products/performance. In this scenario, students are given a clear role and responsibility for each task.

2. What is non-science-related students' perception of using the Online Contextualized Performance Task-Based assessment Using the GRASPS model?

To recognize non-scientific students, the GRASPS model supported their needs and provided a clear and organized process of knowledge transfer and learning experience. They processed all the information they received and learned it when performing the task. This makes STS easier to understand at home and gives you better insights. The GRASPS model provided clear communication of rubrics, evaluation expectations, and appropriate learning approaches. This actual assessment is very important to them and helps them deal with the new normal situation. They used digital skills to integrate and organize ideas and gain new knowledge. Online education has been a challenge for them, but completing the task helps them adapt and gain new insights.

3. What is the mean performance of the students in terms of Performance Task Based on the GRASPS Model:

This section presents data collected by assessing the performance of non-academic students in the first five disciplines of science, technology, and society in terms of content, evidence, and clarity. These ratings are based on rubrics related to the 2013 Brookhart Criteria.

Criteria	Mean	SD	Remarks
Content	3.50	0.53	Meet Standards
Evidence	3.60	0.52	Above Standards
Clarity	3.70	0.48	Above Standards

Rating		Scale	Remarks
4	-	3.51 – 4.00	Above Standards
3	-	2.51 – 3.50	Meet Standards
2	-	1.51 – 2.50	Below Standards
1	-	1.00 – 1.50	Far Below Standrads

Table 4. Performance of Students in Science and Technology Issues That Affect The Society

Table 4 showed the performance of the students in the task, Science And Technology Issues That Affect Society. The criteria of the task were based on the content, evidence, and clarity. Non-science-related students got (M = 3.50, SD = 0.53) as their evaluated rating was between 4 and 3, which implies that the content presented by the students based on the rubrics was clear. An adequate amount of material and evidence support the written product. Most material is relevant. This material includes details. Information is mostly accurate; any inaccuracies are minor and do not interfere with the points made. The pieces of evidence prepared by the students exceeded the rubric criteria (M = 3.60, SD = 0.52). Their evaluated rating was also between 4 and 3, which implies that the evidence based on the rubrics, the students' used materials are intended for support. Information is organized logically and is presented concisely. Flow is good. Introductions, transitions, and other connecting materials take the listener or reader along, and in the end, the teacher-created clarity exceeded the criteria (M = 3.70, SD= 0.48), which implies that the clarity based on the rubrics, between 4 and 3, meaning there are no errors of grammar and usage.

Minor errors do not interfere with the meaning. Language style and word choice are highly effective and enhance meaning. Style and word choice are appropriate to the project. Overall, non-science-related students followed the performance task intelligently and enthusiastically, worked hard, used their critical thinking skills, and quoted information to support the data collected. The GRASPS model helped them construct and organize the pieces of information they've gathered, and their thinking and communication skills were practiced. It treasures the importance of science and technology in society.

Criteria	Mean	SD	Remarks
Content	3.50	0.53	Meet Standards
Evidence	3.60	0.52	Above Standards
Clarity	3.60	0.52	Above Standards

Rating		Scale	Remarks
4	-	3.51 – 4.00	Above Standards
3	-	2.51 – 3.50	Meet Standards
2	-	1.51 – 2.50	Below Standards
1	-	1.00 – 1.50	Far Below Standrads

Table 5. Performance of Students in Intellectual Revolutions: World Tour

Table 5 illustrates the performance of the students in the task, Intellectual Revolutions: World Tour. The criteria of the task were based on the content, evidence, and clarity. Non-science-related students met the standards (M = 3.50, SD = 0.53) as their evaluated rating was between 4 and 3, which implies that the content presented by the students based on the rubrics was clear. An adequate amount of material and evidence support the written product. Most material is relevant. This material includes details. Information is mostly accurate; any inaccuracies are minor and do not interfere with the points made. The pieces of evidence prepared by the students exceeded the rubric criteria (M = 3.60, SD = 0.52). Their evaluated rating was also between 4 and 3, which implies that the evidence based on the rubrics the students' used materials are intended for support. Information is organized logically and is presented concisely.

Flow is good. Introductions, transitions, and other connecting materials take the listener or reader along. In the end, the teacher-created clarity exceeded the criteria (M = 3.60, SD= 0.52), which implies that the clarity based on the rubrics, between 4 and 3, meaning there are some errors of grammar and usage; errors do not interfere with the meaning. Language style and word choice are, for the most part, effective and appropriate to the project. Overall, non-students read carefully and used their academic ability to gather important and relevant information on the topic. The GRASPS model helped them gather information with the scientific method and deepen students' understanding of key academic content.

Criteria	Mean	SD	Remarks
Content	3.80	0.42	Above Standards
Evidence	3.60	0.52	Above Standards
Clarity	3.70	0.48	Above Standards

Rating		Scale	Remarks
4	-	3.51 – 4.00	Above Standards
3	-	2.51 – 3.50	Meet Standards
2	-	1.51 – 2.50	Below Standards
1	-	1.00 – 1.50	Far Below Standrads

Table 6. Performance of Students in Nation-Building: If I Were The President

Table 6 represents the performance of the students in the task, Nation-Building: If I Were The President. The criteria of the task were based on the content, evidence, and clarity. Non-science-related students exceeded the standards (M = 3.80, SD = 0.42) as their evaluated rating was between 4 and 3, which implies that the content presented by the students based on the rubrics was clear. A large amount and variety of materials and evidence support the written product. All materials are relevant. This material includes details. The information is correct. Appropriate sources have been consulted. The pieces of evidence prepared by the students exceeded the rubric criteria (M = 3.60, SD = 0.52). Their evaluated rating was also between 4 and 3, which implies that the evidence based on the rubrics, the students' used materials are intended for support. Information is organized logically and is presented concisely. Flow is good. Introductions, transitions, and other connecting materials take the listener or reader along, and in the end, the teacher-created clarity exceeded the criteria (M = 3.70, SD= 0.48), which implies that the clarity based on the rubrics, between 4 and 3, meaning there are no errors of grammar and usage. Minor errors do not interfere with the meaning. Language style and word choice are highly effective and enhance meaning. Style and word choice are appropriate to the project. Overall, non-students are imaginative and acquire more advanced thinking skills to present all the pieces of evidence they need. The GRASPS model helped to integrate knowledge and skills to solve real-life problems. It is relevant to produce and manage solutions for the issues faced by society.

Criteria	Mean	SD	Remarks
Content	3.60	0.52	Above Standards
Evidence	3.50	0.53	Meet Standards
Clarity	3.50	0.53	Meet Standards

Rating		Scale	Remarks
4	-	3.51 – 4.00	Above Standards
3	-	2.51 – 3.50	Meet Standards
2	-	1.51 – 2.50	Below Standards
1	-	1.00 – 1.50	Far Below Standrads

Table 7. Performance of Students in Science: Teaching And Education In The Philippines

Table 7 represents the performance of the students in the task, Science: Teaching And Education In The Philippines. The criteria of the task were based on the content, evidence, and clarity. Non-science-related students met the standards (M = 3.60, SD = 0.42) as their evaluated rating was between 4 and 3, which implies that the content presented by the students based on the rubrics was clear. A large amount and variety of materials and evidence support the written product. All materials are relevant. This material includes details. The information is correct. Appropriate sources have been consulted. The pieces of evidence prepared by the students met the rubric criteria (M = 3.50, SD = 0.53). Their evaluated rating was also between 4 and 3, which implies that the evidence-based on the rubrics, the students' used materials are intended to support, although not all connections may be explained. Information is organized logically. Flow is adequate.

Introductions, transitions, and other connecting material take the listener or reader along for the most part. Any abrupt changes do not interfere with the intended meaning, and in the end, the teacher-created clarity met the criteria (M = 3.50, SD= 0.53), which implies that the clarity based on the rubrics, between 4 and 3, meaning there are some errors of grammar and usage; errors do not interfere with the meaning. Language style and word choice are, for the most part, effective and appropriate to the project. Overall, non-students are criticized, and sympathetic to the problems society faces in science education. The GRASPS model allows students to experience challenges when facing real-life situations and makes students use the experts' (professionals) experiences in real life.

Criteria	Mean	SD	Remarks
Content	3.40	0.52	Meet Standards
Evidence	3.70	0.48	Above Standards
Clarity	3.70	0.48	Above Standards

Rating		Scale	Remarks
4	-	3.51 – 4.00	Above Standards
3	-	2.51 – 3.50	Meet Standards
2	-	1.51 – 2.50	Below Standards
1	-	1.00 – 1.50	Far Below Standrads

Table 8. Performance of Students in Indigenous Science: The Filipino Investors

Table 8 represents the students' performance in the task, Indigenous Science: The Filipino Investors. The criteria of the task were based on the content, evidence, and clarity. Non-science-related students met the standards (M = 3.40, SD = 0.52) as their evaluated rating was between 4 and 3, which implies that the content presented by the students based on the rubrics was clear. An adequate amount of material and evidence support the written product. Most material is relevant. This material includes details. Information is mostly accurate; any inaccuracies are minor and do not interfere with the points made. Appropriate sources were consulted. The pieces of evidence prepared by the students exceeded the rubric criteria (M = 3.70, SD = 0.48). Their evaluated rating was also between 4 and 3, which implies that the evidence based on the rubrics, the students' used materials are intended for support. Information is organized logically and is presented concisely. Flow is good.

Introductions, transitions, and other connecting materials take the listener or reader along, and in the end, the teacher-created clarity exceeded the criteria (M = 3.70, SD= 0.48), which implies that the clarity based on the rubrics, between 4 and 3, meaning there are no errors of grammar and usage. Minor errors do not interfere with the meaning. Language style and word choice are highly effective and enhance meaning. Style and word choice are appropriate to the project. Overall, non-students are wise and value the improvement of indigenous sciences that has brought the Philippines into a newly improved society. The GRASPS model helped the students use methodologies developed to assess well-being from the students' perspective, contributing useful, relevant, and reliable data to society.

Based on these evaluated results of non-science-related student achievement, researchers assume that the GRASPS model helped students achieve learning outcomes, even when pandemics challenged science education in the Philippines. Hodges et al., 2020 point out that there is a better training institution and trainer-to-trainer path, but the transition from face-to-face learning to online learning is relevant, and a greater desire is to be met in this regard. There is. To gain knowledgeable and efficient online learning lectures and knowledge about them, it is very important to dig deeper into their abilities and usage. Therefore, it is very important to extend good online learning lectures beyond online emergency practices and gain insights into these results from careful educational design and planning. For this reason, researchers used the GRASPS model to assess student performance, grades, and intelligence without behaving fraudulently and immorally near the grade.

4. Is there any significant difference in the acceptability of the GRASPS Model as an Online Contextualized Performance Task-Based assessment as rated by:
4.1.   Students; and
4.2.   Experts

This is demonstrated by the difference in acceptance level testing of the GRASPS model as a contextual online performance task based on student and university instructors' evaluations. This data reveals whether students and professionals have different views on using the GRASPS model as a true assessment of online or distance learning.

Variables		Mean	t statistic	Critical t value	p-value	Analysis
Students	Content	4.85	0.311	2.024	0.758	Not Significant
Experts		4.83				
Students	Relevance	4.86	0.707	2.024	0.484	Not Significant
Experts		4.83				
Students	Mechanics	4.85	0.444	2.024	0.659	Not Significant
Experts		4.82				
Students	**Overall**	**4.853**	**0.775**	**2.023**	**0.443**	**Not Significant**
Experts		**4.826**				

Table 9. Significant Difference in the Acceptability of the GRASPS Model as Online Contextualized Performance Task-Based as rated by the Students and Experts

Table 9 presents the significant difference in the acceptability of the GRASPS Model as Online Contextualized Performance Task-Based as rated by the Students and Experts (University instructors).

The mean scores of the evaluation show that almost the same evaluation was made. The (t=2.023,SD=0.443). The computed p-value of 0.443 is greater than the significance alpha of 0.05. From the given result, it can be implied that there is no significant difference in the rating of the two groups of the respondent, therefore null hypothesis is accepted.

Overall, based on respondents' evaluations, the online contextualized performance task base using GRASPS models in science, technology, and society is an effective strategy for non-science students to care for and love science. Doing so recognized the importance of science and technology in society, integrated knowledge and skills to solve real problems, enabling students to experience challenges in real situations, and understand crucial academic content. The methods developed to deepen and even assist them in learning new information for home synthesis and assessing happiness from a student's perspective are useful, relevant, and trustworthy to society. Researched by Rosaroso and Rosaroso (2015), group and community performance tasks developed students' goal-oriented attitudes and determinations, sensitivity to the needs of others, problem-solving, and strong motivation and learning motivation. The researcher observed that.

Iter, (2017) stated that the usage of the overall performance task—GRASPS (Goals, Rules, Audience, Situation, Product/Performance, Standards) model displayed that students defined many educative features, such as their perspectives and ideals towards overall performance responsibilities and real evaluation. Students understood their capabilities through their products and reviewed their roles in actual-lifestyles conditions. In addition, college students have proven what they completed and advanced via way of means of themselves and that they felt satisfied and loved their roles in actual-lifestyles conditions. The college students said that the assessment technique stepped forward their self-confidence. Diversity became discovered amongst the goods and performances; college students addressed the identical demanding situations differently. This technique develops the overall performance of college professors in real evaluation via way of setting up overall performance responsibilities and using diverse rubrics to evaluate diverse products. These findings imply that trainer educators have to use real checks and overall performance responsibilities to make college students have interaction in publications and make use of rubrics in the assessment that offer college students an actual description of their performances.

5. How do the non-science-related students describe their experiences with using Online Contextualized Performance Task-Based assessment using the GRASPS model?

They described their learning experience as follows: They enjoyed doing performance tasks with their classes and groupmates. They enjoy different roles in each task, especially thinking like scientists, supporters/ advocates, presidents, researchers, teachers, etc. They are excited to see the important purposes of all the roles they have and enjoy learning about them. They even produce meaningful results from each task. Students learned a variety of learning habits, including time management, self-motivation, self-discipline, responsibility, creativity, obedience, enthusiasm for learning, and extra effort to do. The GRASPS model not only develops knowledge but also builds student learning characteristics.

4. CONCLUSION AND RECOMMENDATION

Based on the data gathered, this study brought the following conclusions:

The study's findings showed that there is no significant difference in the rating of the two groups of the respondent, meaning both the students and experts rate the GRASPS Model as very high.

Overall, they believe that the GRASPS model is an adequate knowledge acquisition and learning strategy for non-science-related students. The mechanism of the GRASPS model follows a systematic methodology, prolongs knowledge, and the ideas obtained can be applied to real-world problems, making it easy to understand the task set that promotes scientific literacy. This makes it easier for them to understand the importance and impact of science and technology on society. As a result, they got involved and began to love science. This integrates knowledge and skills to solve real problems, enables students to experience challenges in real situations, and deepens their understanding of important academic content. In addition, allows you to get new integrated information at home. And the methods developed to assess happiness from a student's perspective provide socially useful, relevant, and reliable data.

The researcher recommends that the GRASPS be utilized and implemented in other science courses to evaluate the performance tasks of the students. Students' learning capacity, recommendations, and suggestions may be considered in reforming the GRASPS Model content, relevance, and mechanics to attain the agreement between teachers and students. The evaluated results

can be used as features to revise or redesign tasks to transfer knowledge through learning experiences. Teachers can use authentic assessment of performance tasks for the grading system under a new normal set-up and help the students be interactive in science subjects or courses.

5. ACKNOWLEDGMENTS

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