



Assessing The Development and Forms of Continuous Evaluation Methods Employed in Interdisciplinary Science and Social Studies with Lumi Education

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Abstract: The aim of this study was to evaluate the efficacy of interactive applications in primary education settings, focusing on continuous assessment practices and the overall performance of teaching Science and Social Studies. A descriptive-comparative research methodology was employed in this investigation. The participants comprised fifteen Grade 4 Cambridge students. The findings revealed that the content utilized for ongoing assessment through interactive applications encompassed information on Earth features, human interaction, and plant-based natural resources. A crucial aspect of evaluating fundamental learning competencies predominantly involved describing, identifying, listing, naming, relating, and explaining concepts within the domains of social studies and science. The interactive approaches to continuous assessment received strong endorsement from the respondents, who found the applications engaging and enjoyable, leading to increased motivation, collaboration, and interest, ultimately resulting in improved academic performance. The individual mean scores for each student indicated a comprehensive understanding of Earth features, human interactions, and natural resources (plants). An action plan was proposed to enhance the effectiveness of Lumi Education Apps in fostering interdisciplinary learning in science and social studies. Furthermore, the study recommends that educators explore the expansion of interactive types of ongoing assessment utilizing Lumi Education Apps.

Keywords: ongoing assessment; types of assessments; science social studies; interdisciplinary; engagement; interactive; lumi education

1. Introduction

The term Industrial Revolution 4.0 is used as a reference for research and development in the realm of technology in numerous sectors due to the rapid changes in technology during this period of digitization. This keeps inspiring everyone to develop technology even further in order to improve how it may be used to ease human lives (Badan Standar, Kurikulum, dan Asesmen Pendidikan Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi Republik Indonesia, 2022). Moreover, society 5.0 is a recently coined word that describes the Japanese government's vision for the future and attempts to explain how the industrial revolution 4.0 has caused a revolution in people's lives (Fukuyama, 2018). The idea is that a revolution occurs in a society that uses technology while still taking humanities issues into account. This so-called super smart society uses technology to make life simpler, which leads to the emergence of numerous future businesses to meet this need. Artificial intelligence, big data, and the internet of things are being used to digitize various industries and needs. It is a problem for information technology providers to use advanced technologies right away to meet this need (Badan Standar, Kurikulum, dan Asesmen Pendidikan Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi Republik Indonesia, 2022a; Badan Standar, Kurikulum, dan Asesmen Pendidikan Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi Republik Indonesia, 2022b).

The current generation of students was raised in the information age. Connection to the internet and other technologies is not only possible but also vital (Theses et al., 2017). Ultimately, both students and teachers benefit when technology is used to raise student involvement. It raises teacher productivity and academic success of students. As they become ready for the workforce, every youngster needs to take a deep dive into technology. Social media, digital processes, robotics, machines, and software apps to boost productivity and company management procedures have transformed our society. Technology improves student involvement and raises the likelihood that they will grow up to be successful, contributing members of society. Creating a learning environment where students can actively engage in the process of learning is the goal of using technology. Student One of the most critical elements influencing education and learner motivation is student engagement. Students who lose interest in learning can up roadblocks to education. Using interactive whiteboards is a common way to teach today that encourages student participation in the learning process.

1.1. Ongoing Assessment

Ongoing assessment as an actual practice in primary schools. Merdeka curriculum instruction is now a common practice in Indonesia to guarantee high-quality education. As a result, ongoing assessment has been used by all institutions as a key to discover students' learning challenges and decide their learning outcomes. Also, this approach enhances the pedagogical practices of teachers, enhancing the general of educational outcomes. The use of assessment for learning (formative assessment) and assessment of learning is a crucial component (summative assessment). In order to accomplish the major learning objectives of assessments, which are to assist learning and teaching, teachers are advised to employ types of assessment procedures that are appropriate to the learning activities for the students. being inventive to come up with an effective instructional method to engage learning at this time (Borman et al., 2020).

To better serve students' changing requirements, curriculum assessment emphasis is shifting from summative (evaluation of learning) to formative (assessment of learning). As a result, in assessment for learning, teachers use assessment as a tool for investigation to learn as much as they can about what their students know and are capable of, as well as any misunderstandings, preconceptions, or gaps they may have, in order to provide them with feedback that will help them learn more. In actuality, attitudes, skills, knowledge, and thinking are naturally promoted through classroom assessment (Day et al., 2018)

1.2. Types of Assessments

The investigation's results therefore form the basis for determining what teachers should do next to increase students' learning. Assessment for Learning (AFL), in accordance with Abejehu (2016), shifts the emphasis from summative to formative assessment, from making judgments to creating descriptions that can be used for the following learning stage (Maxlow & Sanzo, 2017). The following stages of observation, worksheets, in-class questioning, student-teacher conferences, and also character development of students at elementary school (Nurhasanah & Nafiah, 2019) or any other mechanism that is likely to provide teachers with information that will be useful for their planning and teaching are created using the insights gained during the assessment process. The purpose of marking is to correlate the results of the investigation, not to compare students. serve are the basis for showcasing each student's advantages and disadvantages as well as providing them with feedback on their study. Indeed, through classroom evaluation, attitudes, abilities, knowledge, and thinking are promoted,

fostered, and either accelerated or suppressed.

Assessment of Learning (AoL) is the most popular kind of continuous assessment in schools. According to (Abejehu, 2016), the purpose of AoL is summative. It is intended to certify learning and inform parents and students about their progress in the classroom. This is often done by indicating how each student stands in relation to the other students. At schools, AoL frequently takes the form of exams or tests with questions derived from the material presented during that time, and it usually happens towards the end of anything (e.g., a unit, course, a grade, a program). According to (Abejehu, 2016), AoL is a style of assessment that continues to rule the majority of classroom assessment activities, with teachers firmly in charge of both creating and marking the test. As a result, there is focus on comparing classmates, and students only receive feedback in the form of grades or marks, with minimal guidance or suggestions for development.

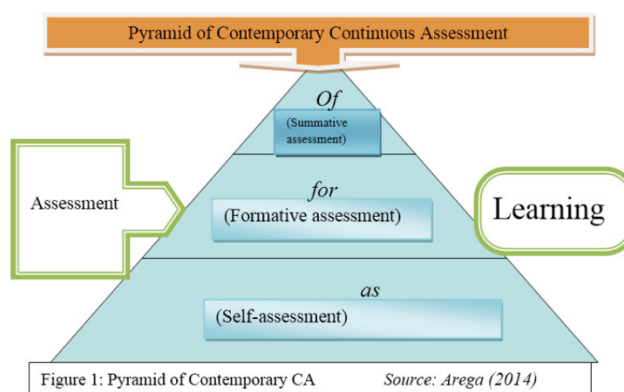


Figure 1. Pyramid of Contemporary Contrinous Assessment (Arega, 2014)

A key component of assessment as learning (AaL) is the student's role as a contributor to both the assessment and learning processes as well as a crucial link between them. Because they are active, engaged, and critical assessors, students are better able to comprehend information, relate it to prior knowledge, and acquire the essential skills (Arega, 2014). When students pay great attention to what they are learning and use the feedback they receive to adjust, adapt, and even drastically change what they understand, this occurs (Abejehu, 2016). The best assessors under the AaL system are the students themselves.

The Indonesian curriculum reform was recently implemented in 2013 and became well known as Merdeka Curriculum. The goal of curriculum Merdeka is to prepare citizens to have quality education to develop their soft skills, focus on materials essentials, flexible learning and implementing a student's Profile Pancasila (Kemdikbudristek, 2021). As mentioned in the document of learning of assessments, educators are the ones who best understand the learning progress of students so that educators need to have the competence and flexibility to carry out assessments to suit the needs of each student. This discretion includes the design of the assessment, the timing of implementation. On-going assessments/Formative assessment aims to monitor and improve the learning process, as well as evaluate the achievement of learning objectives (Day et al., 2018). This assessment is carried out to identify the learning needs of students, the obstacles or difficulties they face, and also to obtain information on student development. This information is feedback for students as well as educators. For students, formative assessment is useful for reflection, by monitoring their learning progress, the challenges they experience, and the steps they need to take to the use of assessment techniques and instruments, determining the criteria for achieving learning objectives, and processing the

results of the assessment. Included in this discretion are decisions about midterm assessments (Wyse, Bradburry, & Trollope, 2022.).

Educators and educational units have the authority to decide whether or not it is necessary to carry out this assessment where one of the principles encourages the use of various forms of assessment, not just written tests, so that learning can more focused on meaningful activities as well as information or feedback from assessments about students' abilities also becomes richer and more useful in the next learning design process (Wyse, Bradburry, & Trollope, 2022). In order to be able to design and carry out learning and assessment according to the direction of the Independent Curriculum policy, the following is a further explanation of formative assessment and summative assessment as a reference.

As Teachers must consider a number of factors conduct formative assessments in order for the assessment to offer these advantages to both students and teachers, including the following: n.d. (Anak et al.). Formative assessment is not a risky process (high stake). Formative evaluations are intended to help students learn and should not be used to decide whether they will progress to the next grade, graduate, or make any other significant decisions. AfL may employ a range of methods and/or tools, when the objective of an assessment is to enhance the proficiency of the learning process, it is referred to as a formative assessment. Formative assessment and learning are done simultaneously so that they function as one cohesive entity. AfL can employ basic techniques, thus feedback on the results of early learning evaluations, or formative assessments, will educate teachers about the preparedness of their children for learning. Teachers must adapt their lesson plans and/or differentiate instruction based on the results of this evaluation in order to meet the requirements of the pupils. Also, the evaluation tools employed might highlight students' strengths, areas that still need to be improved, and strategies to raise the proficiency of written work, completed assignments, or performances for which feedback is given. Hence, the evaluation's findings represent more than just a numerical conclusion.

Table 1. Examples of Ongoing Assessments (Melvin, 2023)

No.	Formative Assessments	No.	Formative Assessments
1.	Observations	15.	Practice Presentations
2.	Questioning	16.	Diagnostic tests
3.	Discussion	17.	Visual Representations
4.	Journals	18.	Kinesthetics Assessments
5.	Assignments	19.	Individual Whiteboards
6.	Projects	20.	Four Corners
7.	Pop Quizzes (not-graded)	21.	Think Pair Share
8.	Exit/Admit Slips	22.	Appointment clock
9.	Learning/Response Logs	23.	Simulation/Business Games
10.	Graphic Organizers, Virtual Classroom	24.	Conferencing/Reviews
11.	Peer/Self Assessments	25.	Meaningful Homework
12.	Written Questions/Exercises	27.	Assignments
13.	With short, Extended or	28.	Questionnaires
14.	Multiple -choice Answer	14.	One Minute Essay

1.3. Interdisciplinary Science and Social Studies

A major goal of the interdisciplinary approach to social studies and science in primary school is to help students develop a broad and holistic understanding of the world around them. Interdisciplinary approaches help students develop a more comprehensive understanding of complex phenomena and their interrelationships by combining knowledge and methods from different disciplines. In primary school, an interdisciplinary approach may involve combining social and natural science subjects to study real-world problems and phenomena. For example, a unit on sustainability could integrate environmental science concepts such as ecosystems and the water cycle with social science concepts related to citizenship and responsible decision-making (Osman et al., 2013).

An interdisciplinary approach in primary school also helps develop critical thinking and problem-solving skills. By engaging in activities that require students to draw on knowledge from multiple disciplines, students develop their ability to connect different concepts and apply what they have learned to new situations. Overall, the goal of an interdisciplinary approach to social studies and science in elementary school is to encourage critical thinking and problem-solving skills while helping students develop a more comprehensive and integrated understanding of the world around them. The dominant activity for interdisciplinary learning to provide hands-on and contextual learning on authentic problems. The expected outcomes of interdisciplinary learning implementation are the implementation of 21st century skills and life sustainability (Burnett, 2010).

In order to combine studies of the social sciences and humanities and enhance civic competence within the school curriculum, Merdeka Curriculum implementation requires multidisciplinary approaches across several disciplines (Standard et al., 2022). As previously said, the purpose of social studies is to support young people in becoming citizens of a democratic society that values diversity in culture and cooperation in a globalized, interdependent world (NCSS, 1994). There are three different social studies teaching philosophies: social studies taught as social sciences, social studies taught as citizenship transmission, and social studies taught as reflective inquiry. Social studies and social sciences focused on the issue of the social science discipline's structure, which focused on the analytical scientific methods of inquiry that are popular in both elementary and secondary schools. The argument mentioned that social studies is not social sciences "perhaps done more to stifle creative curriculum work in the social studies than any other factor" (Shaver, 1991). Social studies should "teach about society, to educate about society, to create an environment in which his pupils can study society or learn about society". It can be defined as social studies with one word, that word is people, people live in specific places which is geography. They live at a specific time in history. They earn a living and exchange goods which is economics. They live in various groups, families, tribes, friendship groups, communities, and interest groups, which is sociology and anthropology (Kenworthy, 1966). In the USA, social science views social studies and social sciences from two different angles: "Social studies is not a subfield of social sciences and social studies is the teaching of social sciences."

Based on the problem in the research in terms of the research that social studies taught monotone and boring, many histories that can read alone, the learning is dominated by the teacher, the method of learning and teaching is not engaging and active learning, lack of innovation, less practical and implemented. However, ideal learning of social studies involves a search for a pattern in our lives, involves both the content and process of learning, requires

information processing, requires problem solving and decision making, involves the development and analysis of one's own value and application of these values to social action.

Reasons for Social Sciences being taught in elementary schools in terms of two perspectives, namely: there is a student perspective, we cannot avoid that student lives in the world. They are interested in living in it and want to know it. Besides that, students often face problems in their lives. Therefore, students need to know this. In addition, adults continue to know about the world and solve problems in it. They need to know, such as the positive and negative aspects of life in the city are bilingual as they may be asked to make personal decisions on such issues. They also need to know about the world in order to satisfy their curiosity about it. The experiences that students have in elementary school provide a basis for more sophisticated adult activities. They laid the groundwork of knowledge, skills, and experience that people can build on adults that can function effectively in the world (Maksum, 2019)

According to (Amrul, 2023) social studies are simply the social sciences as they are used in schools for educational reasons. Geography, history, economics, sociology, civics, and other combinations of these disciplines are all included in the social studies. John Jarolimek claims, however, that social studies, as a component of the elementary school curriculum, incorporates subject matter from a variety of disciplines, including social science, history, geography, sociology, political science, social psychology, philosophy, anthropology, and economics. According to one definition, the social studies are "those social science topics chosen for educational objectives (Schneider et al., 1994).

2. Method

A study was conducted in Indonesia that used South Jakarta's Bakti Mulya 400 Primary School as a sample. descriptive approach using a tool questionnaire. The effectiveness of implementing the various types of ongoing summative assessment by using Lumi Education Apps to meet students' learning objectives was measured through the use of the questionnaire instrument. Quantitative descriptive-comparative research methodology is the approach of data analysis used to process obtained data. The respondents to this research include the designer and developer (the researcher), a material expert, fourth-grade students, and teachers. Because the criteria were determined by the researcher and matched to the created research questions, the participants were chosen using a purposeful sampling technique.

In order to collect data for this study, three different methods were employed: work logs created by the researcher to aid in the design and development process, interviewing guidelines, and questionnaires using a list of checklists. The respondents gave their answers on a scale with a specific answer level. To reach a conclusion, the researcher processed data in a qualitative manner. The data is gathered using the Likert scale, and the initial quantitative (numerical) data is subsequently interpreted into qualitative knowledge. This study is a continuation of the earlier study phase on the development of various forms of continuing assessments using Lumi Education Apps. The impact of the Lumi Education Apps in enticing activities for fourth-grade children to encourage their learning is investigated in this study.

3. Results and Discussion

The study's findings suggest that types of ongoing assessment using Lumi Education Apps can help students develop their learning engagement. Students are given the freedom to express themselves while exploring and learning the moral lessons and messages included in type of ongoing assessments. Primary school students in fourth grade have shown interest and motivate

to learn science and social studies. The learning outcomes criteria was achieved based on learning materials.

What are the types of ongoing assessment and most essential learning for interactive education Apps based on the following learning objectives of science and social studies.

- a. Lesson 1: Identify Earth features around us
- b. Lesson 2: Understanding Earth resources and its uses
- c. Lesson 3: Names parts of plants and analysis photosynthesis
- d. Lesson 4: Describe Earth features and human interactions
- e. Lesson 5: Reflect human interaction toward environments
- f. Lesson 6: Evaluate the historical kingdom in Indonesia.
- g. Lesson 7: Names Earth Features
- h. Lesson 8: Understanding causes and effects of human interactions to the environment.

Table 1 Perceived Effectiveness of Interactive Types of Assessment (Video interactive) N=15

Indicative Statement	Means	Result Interpretation
Interactive ToS helped me to understand the lesson in social sciences	4,66	Strongly Agree
Interactive ToS made my learning of lessons fun and exciting	4,86	Strongly Agree
Interactive ToS enhanced my memory skills in the lesson discussed	4,4	Strongly Agree
Interactive ToS were an effective way of learning social sciences concepts (knowledge)	4,6	Strongly Agree
Interactive ToS improved my critical thinking skills	4,6	Strongly Agree
Interactive ToS contributed to an easy understanding of difficult lessons in Social and sciences	4,53	Strongly Agree
Interactive ToS motivated me to attend and participate in class	4,67	Strongly Agree
Interactive ToS allowed me interacting with my classmates	4,47	Strongly Agree
Interactive ToS allowed me to build harmonious interactions with my teachers	4,19	Agree
Interactive ToS reduced my anxiety about the lesson	4,6	Strongly Agree
Overall mean	4,55	Strongly Agree

Remark: 4.2-5.0: Strongly Agree; 3.40-4.19: Agree; 2.60-3.39: Neutral; 1.80-2.59: Disagree; 1-1.79: Strongly Disagree

The interactive modes of assessment the perceived usefulness of interactive ToS such video interactive in general social sciences class is shown in Table 1. Based on the findings described above, the four students gave the interactive ToS a mean rating of 4.55, which is an agree and strongly agree descriptive outcome. The investigation also reveals that phrase like "interactive ToS made my learning of lessons engaging and enjoyable" had the highest mean score of 4.86. In conclusion, the development improved my memory skills for the lesson that was covered. I was able to communicate with my classmates through Interactive ToS, and I was also able to develop respectful relationships with my teachers due to Interactive ToS. Learning can be made more scientific, interesting, and effective with the help of educational games, according to research showing that interactive ToS enhances accomplishment, retention, and cognition (Zeng, Parks, & Shang, 2020). With a mean score of 4.19 and a category of Agree, the statement "Interactive ToS allowed me to create harmonious interactions with my professors"

had the lowest mean. This shows that the pupils' worry about their teacher was not reduced by the interactive ToS. This suggests that the instructor needs to adapt his teaching strategies and think of fresh approaches to engaging the class.

Table 2. Perceived Effectiveness of Interactive Types of Assessment (Book Interactive) N=15

Indicative Statement	Means	Result Interpretation
Interactive ToS helped me to understand the lesson in social sciences	4,53	Strongly Agree
Interactive ToS allowed me to interact with my classmates	4,60	Strongly Agree
Interactive ToS allowed me to build harmonious interactions with my teacher	4,53	Strongly Agree
Interactive ToS games made my learning of lessons fun and exciting	4,87	Strongly Agree
Interactive ToS games were an effective way of learning social and sciences concepts	4,33	Agree
Interactive ToS reduced my anxiety about my teachers	4,19	Strongly Agree
Interactive ToS contributed to an easy understanding of difficult lessons in Social and sciences	4,53	Strongly Agree
Interactive ToS motivated me to attend and participate in class	4,60	Strongly Agree
Interactive ToS enhanced my memory skills in the lessons discussed	4,4	Strongly Agree
Interactive ToS improved my critical thinking skills	4,66	Strongly Agree
Overall mean	4,52	Strongly Agree

Remark: 4.2-5.0: Strongly Agree; 3.40-4.19: Agree; 2.60-3.39: Neutral; 1.80-2.59: Disagree; 1-1.79: Strongly Disagree

The efficiency of book interactive as an interactive ToS is described in Table 2. The overall mean response for this ToS is 4,52, which can be interpreted as strongly agreeing. This implies that book interactives work well in social studies and science classes as an engaging assessment activity. The research demonstrates that the four (4) suggestive statements with the lowest mean scores were those. These metrics are: "Learning social and scientific themes through interactive ToS games was beneficial." Score of the statement is 0 out of 4. Students agree with this statement. This means that the re-development of this interactive game should concentrate on the effectiveness of the materials presented in social studies and science based on material that will aid the student in properly understanding the lesson's primary idea and can enhance the learner's higher-order thinking skills.

Table 3. Perceived Effectiveness of Interactive Types of Assessment (Drag the Words) N=15

Indicative Statement	Means	Result Interpretation
Interactive ToS helped me to understand the lesson in social sciences	4,2	Strongly Agree
Interactive ToS allowed me to interact with my classmates	4,53	Strongly Agree
Interactive ToS allowed me to build harmonious interactions with my teacher	4,53	Strongly Agree
Interactive ToS games made my learning of lessons fun and exciting	4,8	Strongly Agree

Interactive ToS games were an effective way of learning social and sciences concepts	4,53	Agree
Interactive ToS reduced my anxiety about my teachers	4,19	Strongly Agree
Interactive ToS contributed to an easy understanding of difficult lessons in Social and sciences	4,4	Strongly Agree
Interactive ToS motivated me to attend and participate in class	4,33	Strongly Agree
Interactive ToS enhanced my memory skills in the lessons discussed	4,27	Strongly Agree
Interactive ToS improved my critical thinking skills	4,46	Strongly Agree
Overall mean	4,43	Strongly Agree

Remark: 4.2-5.0: Strongly Agree; 3.40-4.19: Agree; 2.60-3.39: Neutral; 1.80-2.59: Disagree; 1-1.79: Strongly Disagree

A summary of Drag the Words' perceived effectiveness as an interactive ToS can be seen in Table 3. According to the data, respondents firmly agreed that dragging the words increased students' social and cognitive skills as well as their grasp of the course. This interactive TOS has a mean score of 4,43 with a strongly accepted adjectival representation. Also, the lowest recorded mean score for developing harmonious interactions with my professors was 4,06 points. In order to increase students' enthusiasm to study, it is important to concentrate on the teacher's teaching technique and delivery style when enhancing the interactive TOS for social sciences.

Table 4. Perceived Effectiveness of Interactive Types of Assessment (Memory Games and Fill in the Blanks) N=15

Indicative Statement	Means	Result Interpretation
Interactive ToS helped me to understand the lesson in social sciences	4.26	Strongly Agree
Interactive ToS allowed me to interact with my classmates	4.13	Strongly Agree
Interactive ToS allowed me to build harmonious interactions with my teacher	4.13	Strongly Agree
Interactive ToS games made my learning of lessons fun and exciting	4.67	Strongly Agree
Interactive ToS games were an effective way of learning social and sciences concepts	4.13	Agree
Interactive ToS reduced my anxiety about my teachers	4.33	Strongly Agree
Interactive ToS contributed to an easy understanding of difficult lessons in Social and sciences	4.66	Strongly Agree
Interactive ToS motivated me to attend and participate in class	4.66	Strongly Agree
Interactive ToS enhanced my memory skills in the lessons discussed	4.33	Strongly Agree
Interactive ToS improved my critical thinking skills	4.66	Strongly Agree
Overall mean	4.52	Strongly Agree

Remark: 4.2-5.0: Strongly Agree; 3.40-4.19: Agree; 2.60-3.39: Neutral; 1.80-2.59: Disagree; 1-1.79: Strongly Disagree

The usefulness of interactive ToS such memory games and fill-in-the-blanks is shown in Table 4 by the students' perceptions of these activities in general social and science classes. According to the results, with a mean score of 4,38, respondents firmly believe that interactive

TOS are indisputable beneficial in enticing evaluation students of social science lectures. The lowest mean score, on the other hand, had the numerical value 4,13 and was related to "interact with classmates, develop harmonious contact with my professors," which is consistent with the outcome interpretation. This interactive ToS still need work in order to foster better relationships with teachers and encourage student interaction during class activities.

Table 5. Perceived Effectiveness of Interactive Types of Assessment (Question Set) N=15

Indicative Statement	Means	Result Interpretation
Interactive ToS helped me to understand the lesson in social sciences	4,53	Strongly Agree
Interactive ToS allowed me to interact with my classmates	4,33	Strongly Agree
Interactive ToS allowed me to build harmonious interactions with my teacher	4,46	Strongly Agree
Interactive ToS games made my learning of lessons fun and exciting	4,06	Agree
Interactive ToS games were an effective way of learning social and sciences concepts	3,8	Neutral
Interactive ToS reduced my anxiety about my teachers	4,53	Strongly Agree
Interactive ToS contributed to an easy understanding of difficult lessons in Social and sciences	4,33	Strongly Agree
Interactive ToS motivated me to attend and participate in class	4,4	Strongly Agree
Interactive ToS enhanced my memory skills in the lessons discussed	4,46	Strongly Agree
Interactive ToS improved my critical thinking skills	4,66	Strongly Agree
Overall mean	4,52	Strongly Agree

Remark: 4.2-5.0: Strongly Agree; 3.40-4.19: Agree; 2.60-3.39: Neutral; 1.80-2.59: Disagree; 1-1.79: Strongly Disagree

Table 5 shows how the interactive ToS Question Set was rated by the students. It may be deduced that respondents give it a rating of 4,36 overall, which is considered to mean that they highly agree. This indicates that the majority of students thought the Question Set interactive TOS helped them understand social sciences ideas extremely well. Additionally, it implies that this interactive Method helps pupils better absorb the lecture and develops learning abilities including higher-order thinking and socialization skills.

Table 6. Perceived Effectiveness of Interactive Types of Assessment (Flash Card) N=15

Indicative Statement	Means	Result Interpretation
Interactive ToS helped me to understand the lesson in social sciences	4,0	Strongly Agree
Interactive ToS allowed me to interact with my classmates	4,0	Strongly Agree
Interactive ToS allowed me to build harmonious interactions with my teacher	4,2	Strongly Agree
Interactive ToS games made my learning of lessons fun and exciting	4,26	Agree
Interactive ToS games were an effective way of learning social and sciences concepts	4.26	Neutral
Interactive ToS reduced my anxiety about my teachers	3.93	Strongly Agree

Interactive ToS contributed to an easy understanding of difficult lessons in Social and sciences	4.33	Strongly Agree
Interactive ToS motivated me to attend and participate in class	4.06	Strongly Agree
Interactive ToS enhanced my memory skills in the lessons discussed	4.46	Strongly Agree
Interactive ToS improved my critical thinking skills	4.2	Strongly Agree
Overall mean	4.17	Strongly Agree

Remark: 4.2-5.0: Strongly Agree; 3.40-4.19: Agree; 2.60-3.39: Neutral; 1.80-2.59: Disagree; 1-1.79: Strongly Disagree

The efficacy of Flash Cards as an interactive ToS is described in Table 6. Overall, respondents gave this game an approve rating with a mean score of 4, 17. This implies that using flash cards as an additional teaching tool and form of assessment can help students in social studies and science classes understand what is being taught. The lowest mean score, 3,93, was assigned to "reduced my fear about my teachers," according to the analysis. Students agree with this statement. This means that the delivery of the assessment activities by the instructor should be a primary consideration in the construction of an interactive ToS.

Table 7. Perceived Effectiveness of Interactive Types of Assessment (Mark the Words) N=15

Indicative Statement	Means	Result Interpretation
Interactive ToS helped me to understand the lesson in social sciences	4.13	Strongly Agree
Interactive ToS allowed me to interact with my classmates	4.66	Strongly Agree
Interactive ToS allowed me to build harmonious interactions with my teacher	4.46	Strongly Agree
Interactive ToS games made my learning of lessons fun and exciting	4.46	Strongly Agree
Interactive ToS games were an effective way of learning social and sciences concepts	4.40	Strongly Agree
Interactive ToS reduced my anxiety about the lesson	4.33	Strongly Agree
Interactive ToS contributed to an easy understanding of difficult lessons in Social and sciences	4.33	Strongly Agree
Interactive ToS motivated me to attend and participate in class	4.19	Agree
Interactive ToS enhanced my memory skills in the lessons discussed	4.46	Strongly Agree
Interactive ToS improved my critical thinking skills	4.46	Strongly Agree
Overall mean	4.38	Strongly Agree

Remark: 4.2-5.0: Strongly Agree; 3.40-4.19: Agree; 2.60-3.39: Neutral; 1.80-2.59: Disagree; 1-1.79: Strongly Disagree

Table 7 explains the usefulness of mark the words as an interactive ToS. The total mean of the respondents' ratings for this game was 4,39, which may be taken as approve. This implies that using Mark the Words as an additional teaching tool and teaching assessment is a successful way to stimulate students' knowledge in social and natural science classes. "Motivated me to come and participate in class" received the lowest mean score, 4,19, according to the analysis. Students agree with this statement. This means that the revised version of this interactive ToS

should emphasize learning engagement in order to encourage student participation and teamwork during classroom activities (Francis, 2017).

Table 8. Perceived Effectiveness of Interactive Types of Assessment (Image Slider) N=15

Indicative Statement	Means	Result Interpretation
Interactive ToS helped me to understand the lesson in social sciences	4.53	Strongly Agree
Interactive ToS allowed me to interact with my classmates	4.19	Agree
Interactive ToS allowed me to build harmonious interactions with my teacher	4.53	Strongly Agree
Interactive ToS games made my learning of lessons fun and exciting	4.66	Strongly Agree
Interactive ToS games were an effective way of learning social and sciences concepts	4.26	Strongly Agree
Interactive ToS reduced my anxiety about the lesson	4.40	Strongly Agree
Interactive ToS contributed to an easy understanding of difficult lessons in Social and sciences	4.60	Strongly Agree
Interactive ToS motivated me to attend and participate in class	4.46	Strongly Agree
Interactive ToS enhanced my memory skills in the lessons discussed	4.57	Strongly Agree
Interactive ToS improved my critical thinking skills	4.40	Strongly Agree
Overall mean	4.45	Strongly Agree

Remark: 4.2-5.0: Strongly Agree; 3.40-4.19: Agree; 2.60-3.39: Neutral; 1.80-2.59: Disagree; 1-1.79: Strongly Disagree

The effectiveness of mark the words as an interactive ToS is described in Table 8. The total mean of the respondents' ratings for this game was 4.45, which may be taken as agree. This implies that using Mark the Words as an additional teaching tool and teaching assessment is a successful way to stimulate students' knowledge in social and natural science classes. The lowest mean score, 4,19, was given to "enabled me to interact with my peers" in the analysis. Students agree with this statement. This means that the revised version of this interactive ToS should emphasize learning engagement in order to encourage student participation and teamwork during classroom activitie.

Table 9. Students' Behavior and Reactions During the Implementation of Interactive Types of Assessment

Educational Games	Students' Behavior and Reaction
Interactive ToS 1 – Earth Features (Video Interactive)	Enjoyed the game
Interactive ToS 2 – Earth Resources (Book Interactive)	Enjoyed the game
Interactive ToS 3 – Parts of Plants (Drag the Words)	Active and participative
Interactive ToS 4 – Human Interaction (Memory Games and Fill in the Blanks)	Enjoyed the game
Interactive ToS 5 – Environments (Multiple Choice and Question Set)	Several games are challenging
Interactive ToS 6 – Historical Kingdom (Flash Cards)	Cooperative
Interactive ToS 7 – Earth Features (Mark the Words)	Positive behavior
Interactive ToS 8 – Cause and Effect Human Interaction (Image Slides)	Positive behavior

The students' behaviours and emotions while they used the interactive ToS are shown in Table 9 as they were observed. Students generally exhibited good behaviour. as well as responses to ongoing evaluation initiatives. Hence, interactive ToS are useful tools to compel interest, cooperation, fun, and active class engagement. shows integrating educational games into classroom instruction can improve students' engagement, motivation, and learning outcomes (Cheung & Ng, 2021; Lo & Miller, 2020). Yet, the game's creator ought to think about making it easier for students to complete the task.

Table 10: Mean Score of Students N=15

Content	Mean Score	SD	Qualitative Description
Earth Features (Video Interactive)	4,89	0,49	Outstanding
Earth Resources (Book Interactive)	4,60	0,90	Outstanding
Parts of Plants (Drag the words)	3,98	0,76	Very Satisfactory
Human Interactions (Memory Games and Fill in the blanks)	3,94	0,89	Very Satisfactory
Environments (Multiple Choice and Question Set)	3,28	0,78	Satisfactory
Historical Kingdom (Flash card)	3,00	0,50	Satisfactory
Earth Features (Mark the Words)	4,00	0,76	Very Satisfactory
Cause and Effect Human Interaction (Image Slider)	3,60	0,90	Satisfactory

Legend: 4.2-5.00-Outstanding; 3.40-4.19-Very Satisfactory; 2.60-3.39-Satisfactory; 1.80-2.59-Fairly Satisfactory; 1-1.79-Poor

The average individual score for each topic or lesson where interactive ToS were used is shown in Table 10. The students' average scores reveal that the topic Earth Features and Human Interactions: Categories of Earth Features was the simplest because their average scores were 4.89, which was described as Excellent. Additionally, a show good performance as they are

grouped around the mean. The hardest themes were those pertaining to the Historical Kingdom of Indonesia, which had a good mean score of 3,00. As a result, the findings imply that teachers should conduct additional interventions on the one (1) issue that had the lowest score, such as enrichment activities to improve students' comprehension of the lesson.

Table 11. Proposed Action Plan for the Improvement of Interactive Types of Assessments

Area (s) Project Title	Objectives	Person (s) Responsible	Activities	Time Frame	Expected Output
A workshop on Developing Interactive ToS Using Lumi Education	To inform educators about new tools and application programs for developing interactive instructional ongoing assessment Apps.	Researcher	Conduct School Community Service with an emphasis on innovative approaches to creating instructional assessments tools (like Lumi Education).	Year Round	Improve integrated technology for the school community.
Interactive Developer Partnership	To improve the functionality and features of types of ongoing assessments which have more quality contents, instructions, and higher order thinking questions.	Researcher Programmer	Discuss with specialists in the field of instructional assessments, such as analyst assessment and developer program SMART school learning management system how the functionality and features of the created interactive ToS should be enhanced.	Year Round	Version of interactive ToS created. high-quality, updated instructional assessments versions
Building up Connections	Develop contents and instructions assessment materials	Researcher Science and Social Studies Teacher	Get scientific faculty members or master teachers to review the interactive TOS. Find out what they think or what they would change about its content, level of difficulty, and alignment.	Year Round	Encourage your peers to conduct a similar inquiry to enhance the study's authenticity and legitimacy.
Two Head are Better than one	To strengthen the validity and authenticity of the study, encourage	Co-teacher and researcher	To enhance the study's authority and authenticity, encourage your colleagues to carry out a comparable investigation.	Year Round	The most current, trustworthy analysis of interactive ToS.

your
colleagues to
carry out a
comparable
investigation.

4. Conclusion

Earth Features human interaction and plants were topics covered in interactive types of ongoing assessments. The majority of essential ongoing assessment that students have is on identifying, describing, recognizing, relating, and explaining Earth features human interactions and plants concepts. The respondent gave each instructional interactive formative assessment a strong agree rating. It is clear that students enjoyed engaging in the interactive ToS, which made it easier to absorb and retain the general Earth Features interactions and Plants. The interactive ToS was well-liked by the students. And also, it improved the student's motivation, cooperation, enthusiasm, and engagement, which interpreted into achieving excellent academic performance. Based on their individual mean scores for each outcome, students demonstrated through evaluation through reflection of the learning concepts. Also, the students' performance in classes on Earth features is very good. More efforts are required to understand the learning concepts or facts about the historical kingdom of Indonesia.

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References

- Arega, M., Yilkal, W., Effa, G., & Bekele, G. (2014). *Classroom assessment manual for primary and secondary school teachers. National Educational Assessment and Examination Agency: Addis Ababa.*
- Abejehu, S. B. (2016). The Practice of Continuous Assessment in Primary Schools: The Case of Chagni, Ethiopia. *Journal of Education and Practice*, 7(31), 24-30.
- Badan Standar, Kurikulum, dan Asesmen Pendidikan Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi Republik Indonesia. (2022a). *Panduan Pembelajaran dan Asesmen Pendidikan Anak Usia Dini, Pendidikan Dasar, dan Menengah.*
- Badan Standar, Kurikulum, dan Asesmen Pendidikan Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi Republik Indonesia. (2022b). *Capaian Pembelajaran Mata Pelajaran Ilmu Pengetahuan Alam dan Sosial (IPAS) Fase A – Fase C untuk SD/MI/Program Paket A.*
- Borman, D., Cobb, C., Crossman, G., Davies, S., Forsyth, R., Goodman, R., Hussain, A., Lancaster, T., Iosad, A., Millar, D., Millard, L., Miller, B., Reason, P., Reddy, M., Redshaw-Boxwell, G., Thomas, A., Stewart, N., Stoakes, G., Tomas, C., Trueman, J., Ware, M., &

- Walker, R. (2020). *The future of assessment: five principles, five targets for 2025*. JISC. London, UK.
- Burnett, S. M. (2010). Substantiating Constructivism from a Brain-based Perspective. *International Journal of Interdisciplinary Social Sciences*, 5(4).
- Cheung, S. Y., & Ng, K. Y. (2021). Application of the educational game to enhance student learning. *Frontiers in Education*, 6.
- Day, I. N., van Blankenstein, F. M., Westenberg, P. M., & Admiraal, W. F. (2018). Explaining individual student success using continuous assessment types and student characteristics. *Higher Education Research & Development*, 37(5), 937-951.
- Francis, J. (2017). *The Effects Of Technology On Student Motivation And Engagement In Classroom-Based Learning* (dissertation). Retrieved from <https://dune.une.edu/theses/121/>.
- Fukuyama, M. (2018). Society 5.0: Aiming for a new human-centered society. *Japan Spotlight*, 27(5), 47-50.
- Kenworthy, L. S. (1966). *Guide to social studies teaching in secondary schools*.
- Lo, S. L., & Miller, A. L. (2020). Learning behaviors and school engagement: opportunities and challenges with technology in the classroom. *Technology and Adolescent Health*, 79-113.
- Maksum, A. (2019). *Pembelajaran Ilmu Pengetahuan Sosial di Sekolah Dasar: Konsep dan Pemecahan Masalah*. Pustaka Mandiri.
- Maxlow, K. W., & Sanzo, K. L. (2017). *20 Formative Assessment Strategies that Work: A Guide Across Content and Grade Levels*. Routledge.
- Melvin, M. (2023). *Top 21 formative assessment examples for teachers that are fun and fast. Prodigy Game*. <https://www.prodigygame.com/main-en/blog/formative-assessment-examples/>
- National Council for the Social Studies. (1994). *National Curriculum Standards for Social Studies: Introduction*. <https://www.socialstudies.org/standards/national-curriculum-standards-social-studies-introduction>
- Nurhasanah, N., & Nafiah, M. (2019, August). Developed Students Character at Elementary School through Wordless Picture Book. In *1st International Conference on Education Social Sciences and Humanities (ICESSHum 2019)* (pp. 12-17). Atlantis Press.
- Osman, K., Hiong, L. C., & Vebrianto, R. (2013). 21st century biology: an interdisciplinary approach of biology, technology, engineering and mathematics education. *Procedia-Social and Behavioral Sciences*, 102, 188-194.
- Schneider, D., Tevis, C., Nickell, P., Montgomery, M. A., Marker, G., McFarland, M. A., Hartoonian, M., Fernekes, W. R., Ladson-Billings, G., Beery, R., & Adler, S. A. (1994). (rep.). *National Curriculum Standards for Social Studies: Introduction*.
- Shaver, J. P. (1991). *Handbook of research on social studies teaching and learning*.
- Wyse, D., Bradbury, A., & Trollope, R. (2022). *Assessment for Children's Learning: A new future for primary education*. The Independent Commission on Assessment in Primary Education.
- Zeng, J., Parks, S., & Shang, J. (2020). To learn scientifically, effectively, and enjoyably: A review of educational games. *Human Behavior and Emerging Technologies*, 2(2), 186-195.