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The Effectiveness of Online Learning Activities Using Google Classroom on Arabic Writing and Reading Skills for Non-Native Speakers in Bahrain

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Abstract: Implementing online learning activities through a learning management system as a supplementary tool for motivating and empowering independent learning and Innovative teaching is becoming a crucial part of 21st-century education. Google Classroom is one example of a social learning site that teachers and students use in many educational institutions in Bahrain. In particular, the study aims to determine the effectiveness of online learning activities using Google Classroom on writing and reading skills among year six students. Data were collected with a mixed-methods research paradigm. Altogether, 80 students from Bahrain government primary schools were involved in an intervention program intended to analyze students' Arabic writing and reading skills as the primary research inquiries of the study. From the said population of respondents, 80 students participated in the experimental group activities and an interview dealing with their experience using Google Classroom. Overall, the findings affirmed that most participants considered Google Classroom an effective supplementary tool for their learning. This study proved that experienced students using Google Classroom influence their fluency in learning Arabic courses, so they found it easier to apply Google Classroom, serving as an advantage.

Keywords: Google Classroom, Arabic Writing Skills,Arabic Reading Skills, Online Learning.

1. Introduction

In order to accomplish the teaching objectives, the success of teaching Arabic to those who already know other languages is contingent on various elements. (Al-Ewesat & Al-Ghzewat, 2022). These factors, including those relating to students, the program, and language usage, have an impact on how effectively Arabic is taught and learned by speakers of other languages (Salahuddin, Fauzi, & Mauludiyah, 2021; Ritonga et al., 2022). Knowing a language and teaching it are two very different things; this is particularly true when students are fluent in more than one language, and it is necessary to improve speaking and learning among K-6 students in Arabic-speaking countries, such as Bahrain. Reading and writing skills are prerequisites for good speech. Children or students learn to understand and utilize language to communicate with others and to express their thoughts, emotions, and feelings (Hasibuan, 2018). Children acquire abilities during the early stages of speech and language development that are crucial for developing literacy (Reading and writing; Fauzi & Anindiati, 2021). This can enhance students' capacity to learn Arabic using the current reading and writing instruction techniques in the language. Every student needs to be taught to read and write because they are the foundation for all other forms of learning, especially the Arabic language (Wargadinata et al., 2020). A student must develop core reading and writing abilities to succeed academically. Reading increases our knowledge and allows us to reason (Danesh & Nourdad, 2017). It helps us better grasp things and gives our lives purpose. Reading fosters creativity and intelligence, encourages original thought, expands vocabulary, boosts memory, etc. (Makhoul & Sabah, 2019).

Background of the Study

In Bahrain, a nine-year basic education program lasts through the primary and intermediate phases and three years of secondary school in various ways (Al Anzarouti & Hamed, 2020). Bahrain elementary school students are taught all primary subjects, including Arabic reading and writing, an important language skill for non-native Arabic speakers (Razzak, 2018). Technology has significantly improved the current educational system among schools. The use of technology has increased not only to make the teaching and learning process more efficient, student-centered, and outcome-focused in the Classroom, but it has also pushed educators to utilize it as a tool to bridge the gap between conventional learning and the educational needs of today's contemporary world for the overall growth of the student (Al-Mamary, 2022a). The use of different levels and diverse contexts demonstrates how quickly different information and communication technologies are being used as a catalyst to improve learning (Al-Mamary, 2022b). Whatever one is position, posting content online does not offer practical solutions for issues with teaching and learning. If relevant theories and teaching strategies are not applied following a learning management system's features, effective language learning outcomes cannot be anticipated (Noor, 2022). Some interactive programs accessible via the LMS catch students' interest at first in language learning because of distinctive screen designs or the inclusion of features like animation and noises. However, if the interactions are cognitively engaging, students will stay energized and energized (Al-Shaikhli et al., 2022). Within the LMS concept, one social network that links students with their peers and teachers for learning activities is Google Classroom (Siahaan, 2022). When students are in a circumstance that prevents them from engaging in a direct teaching and learning process, it also helps the teacher use an online medium to guide them. Determining the proper learning platform for the student is crucial. Knowing how the students feel about utilizing the platform for online learning activities for a long time could demonstrate this (Alotumi, 2022). It is believed explicitly that using Google Classroom technology will change instruction from teacher-centered to student-centered. However, it is feasible to use Google Classroom technology to develop student-centered learning spaces in the Classroom (Elifia & Hasanudin, 2022). Google Classroom is a tool with enormous educational potential, especially in Arabic language learning, including Reading and writing (Basil, Umakalu, & Nwangwu, 2022). Google Classroom's primary goal is to make file sharing between students and teachers more efficient. Google Classroom also plays a significant role in language learning, such as Arabic, particularly reading and writing.

Reading is a crucial skill with many advantages. However, many students' at all educational levels need help with Reading, particularly for year six students, such as Reading in Arabic, a foreign language, or for non-native speakers in Bahrain. Students use an engaging and effective learning tool to improve their reading abilities (Al-Ewesat & Al-Ghzewat, 2022). In earlier teaching and learning activities, the only learning resource used by students was printed textbooks. However, employing technology to teach Reading is more efficient and can stimulate children's interests. Google Classroom is one of the tools that may be used to teach Reading (Styati & Khasanah, 2022). It is efficient and straightforward in reading learning since it makes it simple for students to respond to the questions and aids teachers in time management, class organization, and student communication. With the help of Google Classroom, students can ask questions, give tasks, and connect with teachers all in one place (Sabeeh & Shalash, 2022). Google Classroom supports online learning for today's digital students in a world that is becoming increasingly digital.

Online Learning Activities

The word "online learning" refers to a kind of educational setting that uses the internet to bring together students from diverse cultural and economic backgrounds, instructors, and other students. (Wong, 2023). Many students are starting to anticipate that their lessons will contain some interaction and chances to put what they are learning into practice, discuss it, or apply it. In online learning activities, active learning can boost learning and enhance student engagement (Baruth & Cohen, 2023). The online environment can also be used to develop opportunities for students to learn actively, engage with complex subjects, or have opportunities for self-reflection or self-evaluation, especially regarding reading and writing (Agustina, Matra, & Karimah, 2020). Those with both online and in-person components allow students to study both online and in person to see the

connections between the two modes of instruction and their work in each (Çebi & Güyer, 2020). Students learning can be "closed-looped" by introducing an online activity in class and then receiving feedback on the activity after it has been finished (Bovermann, K., & Bastiaens, 2020).

Arabic Writing Skills: The Arabic language's constant use of a consonant before a vowel as the first letter of each word is arguably one of its most distinctive features. Based on its complexity, Arabic might have the most words per unit of language (Azmi et al., 2019). Writing has long been regarded as a vitally important talent in the teaching and study of Arabic as a Second Language (ASL) since it is a comprehensive skill that supports vocabulary, grammar, thinking, planning, editing, rewriting, and other features (Hasibuan, 2018)—due to its interdependence, writing aids in the development of all other skills, including speaking, listening, and reading (Eldin, 2015). On the other hand, the depiction of language in written form through a set of signs or symbols is known as writing. Some individuals believe that writing is challenging. According to Nurbayan et al. (2021), writing requires both the capacity to generate words and ideas and evaluate them to specify which ones to employ.

Arabic Reading Skills: Learning to read in Arabic is far more complicated than learning to read in English, per a recent series of research (Anvarovna, 2022). Reading Arabic fluently will help an individual in many other aspects of Arabic language mastery (Makhoul & Sabah, 2019). Reading will improve all other skills and aid in developing Arabic fluency (listening, speaking, and writing). Word recognition, comprehension, fluency, and enthusiasm are all essential components of the complicated process of reading (Nur & Ahmad, 2017). Learn how readers combine these elements to interpret print. Making sense of written words is called reading. A combination of critical linguistic abilities and applications in more than 20 nations with about 300 million native speakers may be found in Arabic. Students with intermediate Arabic language proficiency are invited to enroll in this advanced-level course in Modern Standard Arabic (Nurjanah & Putri, 2022). Enhancing reading, writing, speaking, and listening abilities aims to improve Arabic competency. The reading comprehension, verbal fluency, and general knowledge of students who read autonomously are higher than those who do not (Ismail, Syahruzah & Basuki, 2017). Compared to their non-reading peers, they improve as readers, perform better in exams across the board, and possess more in-depth subject knowledge. According to the authors, reading fosters critical thinking in students and enhances reading comprehension, which is advantageous in all of the subject areas examined in this study. The advantages of leisure reading, however, extend beyond the classroom. Students carry their reading-based talents into adulthood, the workforce, and society.

Digital Technology: Digital technology supports and facilitates online learning activities across all levels, especially in primary schools. Any instructional activity that effectively leverages technology to boost a student's learning experience and spans a wide range of tools and practices is "digital learning" (Cramarenco et al., 2023). Software that allows students to participate remotely in classroom activities is an online learning tool (Wong, 2023). Online forums, self-assessments, virtual field excursions, virtual labs, case studies, simulations, problem-solving, and concept mapping. Online learning activities may include a variety of forms, including interactive learning objects, among others (Baruth & Cohen, 2023). Students can access a variety of information presentation formats through digital learning modules, including texts, exercises, graphs, infographics, animations, photos, and more (Han & Geng, 2023). Materials that computers can access are considered to be digital. Some were "born-digital," or they began as digital files (such as digital camera photos, web pages, Twitter feeds, etc.). Others were already digital files when they were first created (Martin et al., 2023). It is necessary to investigate how digital technology affects reading and writing skills among school students, especially those in K–6 (Jobirovich, 2021). Due to the accessibility of different technologies and the extensive usage of social media, students spend their free time reading on a phone or laptop (Jobirovich, 2021). They may also write messages in response to their peers or loved ones. These have affected the student's reading and writing skills compared to conventional ways. The students use devices like smartphones or tablets, which are only used to obtain the most recent online news (Mufidah, Husaini, & Caesaron, 2022). Readers (especially students) tend to adopt screen-based reading behavior in this digital age. Shaheen (2022) observed that readers are spending more time on the web seeking and browsing for information. Currently, students prefer to stay and use the internet to read while engaging in other activities rather than just concentrating in one spot and reading

much material (Anvarovna, 2022). This implies that the pervasiveness and growth of technology are the primary causes of the changes in these patterns and behaviors regarding reading and writing habits.

Google Classroom: Google Classroom is a popular LMS in K-12 schools (Kumar & Bervell, 2019). Students can access the platform using Google Classroom to use PCs, tablets, and cell phones. Creating personalized assignments for a single student or a small group of students is simple with Google Classroom (Heggart & Yoo, 2018). Specific students or groups in a class may receive assignments that have been updated or are different. A teacher can also speak individually with students to see if they have questions or require additional assistance. The Google Classroom Platform is a publicly accessible web tool that makes it simple to set up an online educational system for students (Hussaini et al., 2020). The right tools are available in Google Classroom for delivering online content to students, fostering interactions between teachers and students as well as within student groups through the Chat feature, and assisting teachers in delegating tasks and carrying out online tests in a safe and welcoming manner (Azhar & Iqbal, 2018). The Google Classroom was ideal for evaluating web-based learning (Sukmawati & Nensia, 2019). Cristiano & Triana (2019) used an experimentation-based methodology and Google Classroom, in which the experimental group was studied using Google Classroom, and the control group conventionally received instruction. The results indicated that using Google Classroom yielded statistically significant disparities between the experimental and control groups. In comparison to the conventional method of learning, the effectiveness of learning by students at each of the levels improved, along with language accomplishment.

ADDIE Model: The acronym "ADDIE" comprises the following letters: Analyze, Design, Develop, Implement, and Evaluate. This model of instructional design has endured the test of time and usage. Instructional and training designers use the ADDIE learning theory to develop training curricula and instructional designs. The standard procedure used by instructional designers and training developers is called the ADDIE model. The five processes of analysis, design, development, implementation, and evaluation (Figure 2.1) are a flexible, dynamic framework for creating efficient training and achievement support systems. Each stage is a dynamic and adaptable benchmark for creating practical training and achievement support tools. ADDIE is regarded as the instructional design model that is now used the most. The paradigm is adaptable to various situations, and the five phases interact and relate to one another. Trainers and educators can use the processes in the ADDIE model to develop successful and efficient teaching plans for a wide range of educational programs.

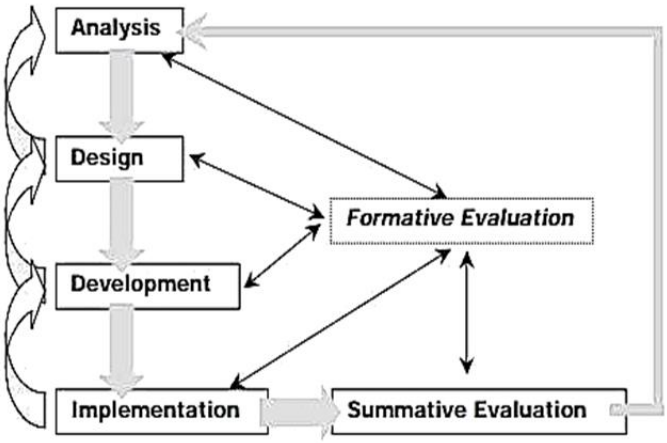

Figure 2.1: ADDIE Model

Theoretical Framework

This study's theoretical framework is built on main theories: Constructivism theory, Inquiry learning, Complex Dynamic Systems Theory, and collaborative and cooperative. Figure 1 displays the theoretical framework of this study. The basic writing and reading processes are also mentioned as a guideline in the framework.

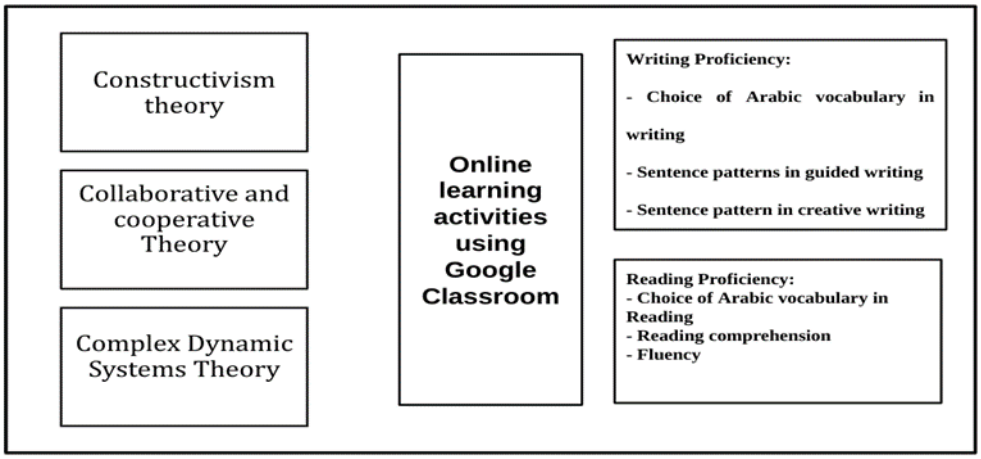

Figure 1: The Study Theoretical Framework

Research Design: Figure 2 presents the research design of this study. The Quasi-experimental approach was used for this investigation. A quasi-experimental study aims to determine whether an independent variable causes a dependent one. The independent variable exerts influence, whereas the dependent variable is the one that is affected.

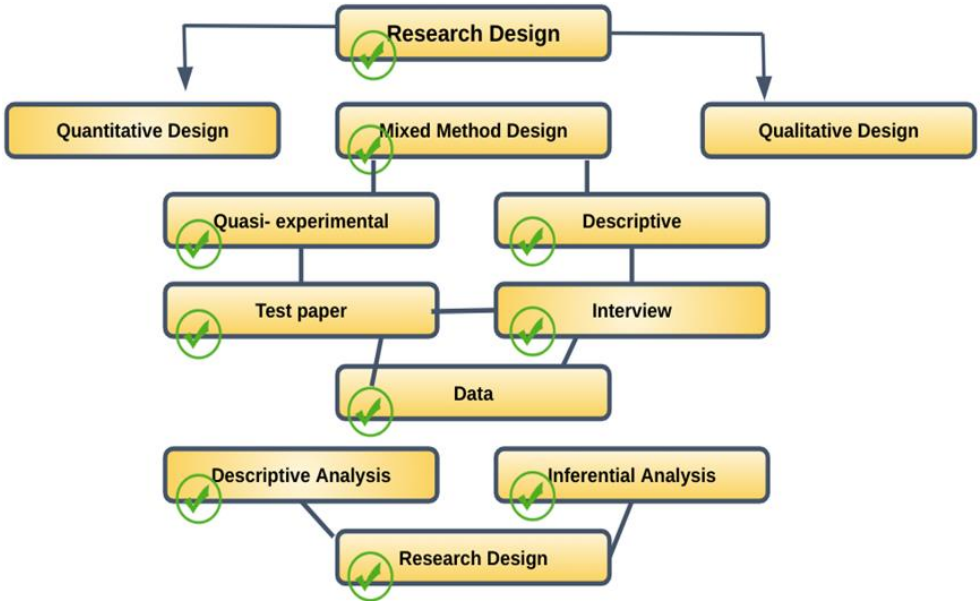

Figure 2: Research Design

This research used a pre-experimental design inspired by the work of Campbell and Standley (1996) called the One Group Post-Test Pre-Test design (2006). If the study's goal is not to compare the intervention's outcomes to those of more conventional approaches, then the lack of a control group will not bias the results. This research follows a framework based on the symbols and norms of Campbell and Stanley (1963), as shown in Table 1.

Table 1: Symbols and norms of Campbell and Stanley (1963)

R	O1		X
		O2	O3

Guidance:

R: intervention (experimental) group

O1: pre-test measurement

O2: post-test measurement

O3: advanced post-test measurement

X= experimental processing (reading and writing learning based on Google classroom activity)

Table 2 displays this study's Campbell and Stanley (1963) guidelines. The group is made up of the test group. A pre-test (O1) and post-test (O2) will be conducted. The pre-test will be subjected to intervention (R) using Google Classroom, while the data will be gathered to conclude. Following the use of Google Classroom, two (2) post-tests will be administered. The first post-test (O2) is the intervention (R) to examine the effectiveness of using Google Classroom activities among year 6 students, and the second one (O3) is the retention test to examine how the students maintain retention. The experimental group will be subjected to a four-week-long intervention by an educational program called Science, Technology, Engineering, and Mathematics (STEM) Learning (X approach). This study will calculate the score difference between the pre-test (O1) and the post-test (O2). The advanced postal test (O3) will be administered four weeks after the postal test (O2) to assess the retention of the intervention's impact on students' scientific process abilities and social-emotional skills. This study's implementation stage took a total of ten weeks to complete.

Table 2: Summary

NO	Question Research	Instruments	Type of Data
1	How to develop the lesson plan for effective online learning activities? (RO1)	Pre-Test & Post-Test & Advanced Post test	Quantitative (Numerical, Achievement Score)
2	What is the effectiveness of Google classroom activities on students' writing skills in Arabic? (RO3)	Pre-Test & Post-Test & Advanced Post test	Quantitative (Numerical, Achievement Score)
3	What is the effectiveness of Google classroom activities on students' reading skills in Arabic? (RO4)	Pre-Test & Post-Test & Advanced Post test	Quantitative Numerical (Achievement Score)
4	What is the effectiveness of Google classroom activities on students' achievement on Writing skills in Arabic? (RO5)	Pre-Test & Post-Test & Advanced Post test	Quantitative Numerical (Achievement Score)

5	What is the effectiveness of Google classroom activities on students' achievement on Writing skills in Arabic? (RO6)	Pre-Test & Post-Test & Advanced Post test	Quantitative Numerical (Achievement Score)
6	What is the effectiveness of Google classroom activities on students' retention in achievement on writing skills in Arabic? (RO7)	Pre-Test & Post-Test & Advanced Post test	Quantitative Numerical (Achievement Score)
7	What is the effectiveness of Google classroom activities on students' retention in achievement on reading skills in Arabic? (RO8)	Pre-Test & Post-Test & Advanced Post test	Quantitative Numerical (Achievement Score)
8	What is the student's experience after using the online learning activities in the Google classroom?(RO9)	Interview Protocol	Qualitative

Pilot Study

The pilot study is a small-scale trial version performed before the more extensive study (Kohnen, Banales, & McArthur, 2021). The pilot study will be carried out using the research tools authorized by the Ministry of Education in Bahrain through the Educational Research Application System. A pilot study evaluated the pre-test Arabic essay and interview items. The pilot study uses Bahrain QAAET National Examinations Arabic G6 Paper 1. During this stage, 20% of respondents are presented with this paper for the treatment procedure's online writing and reading exercises. The goal of the pilot study will be to identify any potential issues with the research technique that might arise in practice. This phase will be preceded by reliability testing and expert validation. Therefore, two experts from academics with profound experiences in research designs and language studies will be used for the validations. The process of validating a system involves confirming that the pilot study and the interview items accurately serve the stated objectives and design of the study (Kazeni, 2008). According to Downey et al. (2010), the validators must be knowledgeable individuals with a demonstrated track record in one or more specific fields. These experts will validate the learning activities in the Google Classroom and language skills (writing and reading).

Pilot Study Results for Pre-Test

The test format was retained the same as the Bahrain QAAET National Examinations format since the students were already accustomed to it, helping to ensure the validity of the pre-test Arabic G6 paper one item. The challenge level was the same as the QAAET National Examinations test paper. Table 3 presents the results of the pilot study pre-test for the reading exercise. The Bahrain QAAET National Examinations Arabic G6 Paper 1 has eight (8) items, which 25 students completed. There are a total of 40 questions in this paper. Each part has five test questions, and at least two respondents responded to at least one question for each part. A maximum of four students or respondents responded to Part 2a (16.0 percent) and Part 5a (16.0 percent). All 25 students who participated in this pilot study have responded to all parts.

Table 3. Results of pilot study pre-test for the reading exercise

READING (PRE-TEST)				
	Test Questions	**Response Frequency**	**Percent**	**Cumulative Percent**
Valid	Part 1 (Q1_5)	3	12.0	12.0
	Part 2a (Q6_10)	4	16.0	28.0
	Part 2b (Q11_15)	3	12.0	40.0
	Part 3a (Q16_20)	3	12.0	52.0
	Part 3b (Q21_25)	2	8.0	60.0
	Part 4 (Q26_30)	3	12.0	72.0
	Part 5a (Q31_35)	4	16.0	88.0
	Part 5b (Q36_40)	3	12.0	100.0
	Total	25	100.0	
	Processing Summary			
		N	Percent	
	Valid	25	100.0	
	Excluded	0	0.0	
	Total	25	100.0	

List wise deletion for all variables in the processing

Table 4 presents the results of the pilot study pre-test for the writing exercise. The format and challenge levels of the writing test were retained and used. The Bahrain QAAET National Examinations Arabic Writing for G6 has two sections with 21 questions divided into thirteen items or questions, completed by 25 students in this pilot study. Each part has five test questions, and at least one respondent responded to at least one question for each part. A maximum of four students responded to question number 2 (16.0 percent). All 25 students who participated in this pilot study have responded to all parts.

Table 4 Results of pilot study pre-test for the writing exercise

Writing (PRE-TEST)				
	Test Paper Questions	**Response Frequency**	**Percent**	**Cumulative Percent**
Valid	QNo.1	2	8.0	8.0
	QNo.2	4	16.0	24.0
	QNo.3	1	4.0	28.0
	QNo.4	3	12.0	40.0
	QNo.5	2	8.0	48.0
	QNo.6	1	4.0	52.0
	QNo.7	2	8.0	60.0
	QNo.8	1	4.0	64.0
	QNo.9	2	8.0	72.0
	QNo.10	1	4.0	76.0
	QNo.11	2	8.0	84.0
	QNo.12	2	8.0	92.0
	QNo.13	2	8.0	100.0
	Total	25	100.0	
	Processing Summary			
		N	Percent	
	Valid	25	100.0	
	Excluded	0	0.0	
	Total	25	100.0	

Table 5 displays the results of the pilot study post-test for the reading exercise. Overall, 25 students participated and completed the test. A total of four students (16.0 percent) responded to Part 1, while Part 2a, Part 2b, Part

3a, Part 3b, Part 4, Part 5a, and Part 5b were responded to by three students each. A total of 25 students (100 percent) responded to all parts of the post-test.

Table 5 Results of pilot study post-test for the reading exercise

READING (POST-TEST)				
	Test Questions	**Response Frequency**	**Percent**	**Cumulative Percent**
Valid	Part 1 (Q1_5)	4	16.0	16.0
	Part 2a (Q6_10)	3	12.0	28.0
	Part 2b (Q11_15)	3	12.0	40.0
	Part 3a (Q16_20)	3	12.0	52.0
	Part 3b (Q21_25)	3	12.0	64.0
	Part 4 (Q26_30)	3	12.0	76.0
	Part 5a (Q31_35)	3	12.0	88.0
	Part 5b (Q36_40)	3	12.0	100.0
	Total	25	100.0	
	Processing Summary			
		N	Percent	
	Valid	25	100.0	
	Excluded	0	0.0	
	Total	25	100.0	

Listwise deletion for all variables in the processing

Table 6 displays the results of the pilot study post-test for the writing exercise. Overall, 25 students participated in the post-test writing exercise. Three students responded to questions 1 and 2 each, while the remaining questions were answered by one or two students each. A total of 25 students (100 percent) responded to all the questions in the post-test writing exercise.

Table 6 Results of pilot study post-test for the writing exercise

Writing (POST-TEST)				
	Test Paper Questions	**Response Frequency**	**Percent**	**Cumulative Percent**
Valid	QNo.1	3	12.0	12.0
	QNo.2	3	12.0	24.0
	QNo.3	2	8.0	32.0
	QNo.4	3	12.0	44.0
	QNo.5	2	8.0	52.0
	QNo.6	2	8.0	60.0
	QNo.7	2	8.0	68.0
	QNo.8	1	4.0	72.0
	QNo.9	1	4.0	76.0
	QNo.10	1	4.0	80.0
	QNo.11	2	8.0	88.0
	QNo.12	2	8.0	92.0
	QNo.13	1	4.0	100.0
	Total	25	100.0	
	Processing Summary			
		N	Percent	
	Valid	25	100.0	
	Excluded	0	0.0	
	Total	25	100.0	

Table 7 shows the results of the pilot study advance test for the reading exercise. A total of 25 students participated in the advanced test. Four students responded to Part 1, Part 2a, and Part 2b, while Part 3a, Part 3b, and Part 4 were responded to by three students each. However, Part 5a and Part 5b were responded to by two students each. A total of 25 students (100 percent) responded to all parts of the advanced test.

Table 7 Results of pilot study advance for the reading exercise

READING (ADVANCE TEST)				
	Test Questions	**Response Frequency**	**Percent**	**Cumulative Percent**
Valid	Part 1 (Q1_5)	4	16.0	16.0
	Part 2a (Q6_10)	4	16.0	32.0
	Part 2b (Q11_15)	4	16.0	48.0
	Part 3a (Q16_20)	3	12.0	60.0
	Part 3b (Q21_25)	3	12.0	72.0
	Part 4 (Q26_30)	3	12.0	84.0
	Part 5a (Q31_35)	2	8.0	92.0
	Part 5b (Q36_40)	2	8.0	100.0
	Total	25	100.0	
	Processing Summary			
		N	Percent	
	Valid	25	100.0	
	Excluded	0	0.0	
	Total	25	100.0	

Listwise deletion for all variables in the processing.

Table 8 shows the results of the pilot study advance test for the writing exercise. Overall, 25 students participated in the advanced test-writing exercise. In the advanced test, all thirteen questions were answered by

two students each, except for question 8, which one student answered. A total of 25 students (100 percent) responded to all the questions in the advanced test writing exercise.

Table 8 Results of pilot study advance test for the writing exercise

Writing (ADVANCE TEST)				
	Test Paper Questions	**Response Frequency**	**Percent**	**Cumulative Percent**
Valid	QNo.1	2	8.0	8.0
	QNo.2	2	8.0	16.0
	QNo.3	2	8.0	24.0
	QNo.4	2	8.0	32.0
	QNo.5	2	8.0	40.0
	QNo.6	2	8.0	48.0
	QNo.7	2	8.0	56.0
	QNo.8	1	4.0	60.0
	QNo.9	2	8.0	68.0
	QNo.10	2	8.0	76.0
	QNo.11	2	8.0	84.0
	QNo.12	2	8.0	92.0
	QNo.13	2	8.0	100.0
	Total	25	100.0	
	Processing Summary			
		N	Percent	
	Valid	25	100.0	

	Excluded	0	0.0	
	Total	25	100.0	

The pilot test results showed no significant change to the tested questions, items, or instruments. With these results, this study can proceed with the primary data collection using the instruments without making any changes or adjustments. This showed the feasibility of this study.

Validity:

For validity, the pre- and post-tests underwent analysis by an experienced educator to assess the viability and applicability of the questions for students at the primary year 6 level. The expert teacher is the head of the Arabic Language Examination Resource in the Ministry of Education in Bahrain. The expert teacher reported that the pre and post-tests were clear and not confusing. This designates the face value of the pre and post-tests, indicating validity—the pre and post-tests the tests were found to be valid. Meanwhile, to determine the internal consistency reliability, the pre and post-tests were marked by the researcher and expert teacher with at least ten years of experience in teaching.

Pre-Test and Post-Test:

The Year 6 students from the independent school will be used in the pilot study for the pre-test. The respondents will be randomly chosen to take the test, following the Arabic Paper 2 format. All three portions of this test will have a one-and-a-half-hour time limit. Three experts will be chosen on the advice of the Ministry of Education, Bahrain. All experts will have at least ten years of experience instructing Arabic in the primary grades. They will concur that the questions and instructions on the test will be suitable for the group. Expert advice will be taken into account. As a result, the items will cover the school year's opening concepts.

Online Activities on Google Classroom:

After completing the pre-test, students will be exposed to two of the eight online learning activities intended to serve as the study's experimental group. The platform's features will be evaluated for functioning to ensure they will be reliable and user-friendly. For the students to understand online learning, they will be exposed to it throughout the same week. During the pilot project, ICT literacy among students was assessed. The researcher will also examine the student's understanding and prior acceptance of using a web-based teaching module in a lesson. To validate the online learning activities, three experts will be chosen. The Ministry of Education, Bahrain, approved two of them. These two teachers will validate the terminology and instructions used in the online learning exercises. The officer will examine the technical aspects of the platform, such as its content and design. Experts advised avoiding lengthy instruction texts since they would prevent students from becoming bored and losing interest in the exercises.

Data Collection

Pre-test, post-test, and advanced post-test results will be used to gather the data for this study. The results will be compared to determine the significance of the differences. In order to compare the pre-test score with the post-test and Advanced post-test, the mean scores will be calculated. Each week, teachers will be provided with lesson plans and a manual for lesson progression during the classes.

Data Analysis

Results of students' marks on tests, as shown in previous tables, were collected on an Excel sheet and an SPSS on these results to give a good point of view for what we get from our research. Interview scripts will be created using the information gathered during the interview session. In this study, the semi-structured interview will be used with closed-ended questions and recorded with a sound recorder before being wholly transcribed.

According to Deterding & Waters, 2021), transcription will be conducted word for word and may not be summarized. The data will be subjected to coding when the transcribing procedure is finished. The data will be organized through coding by placing sections of text or photos in brackets and adding a word that represents a category in the margins (Villiger, Schweiger, & Baldauf, 2021). It involves segmenting sentences or photos into categories and giving each category a name using text data or images acquired during data gathering. The interview results will be then analyzed using the content analysis method (Nilsson, Nyberg, & Strömbergsson, 2021) and presented following the pertinent themes based on the study question.

2. Result

There were 80 Year 6 primary school students chosen from a primary international private school in Manama, Bahrain. Purposive sampling was used to select based on the school's sample size (80). The demographic determination of the student for each variable was the aim of a preliminary data analysis to generate descriptive statistics. The number of students who participated in this study is displayed in Table 9. In each session, female students (n = 49) were higher in number than male students (n = 31). The students in the selected classes at the school used Google Classroom to participate in online learning activities. It was decided to use Google Classroom for the online learning activities.

Table 9: Demographic distribution of the students

Google Classroom Online Learning Activities	Gender		Total of Number of Students in each session
	Male	Female	
Pre-test session	31	49	80
Post-test session	31	49	80
Advanced Post-test session	31	49	80
TOTAL	93	147	240

Figure 3 displays the percentage of the participants based on gender. In this study, 49 (61 percent) female students and 31 (39 percent) male students participated. Figure 4 displays the percentage of the participants based on ethnicity. Out of 80 students who participated, 76 percent were Bahraini, while 24 percent were non-Bahraini.

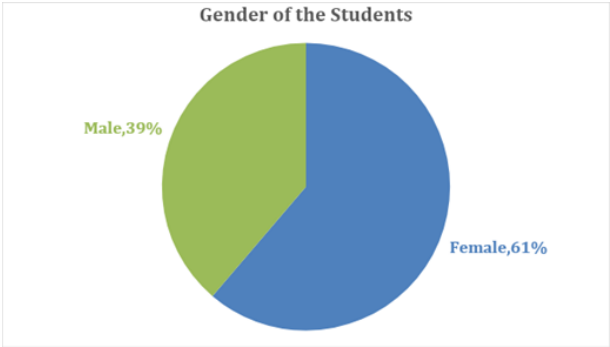

Figure 3: Percentage of the participants based on gender

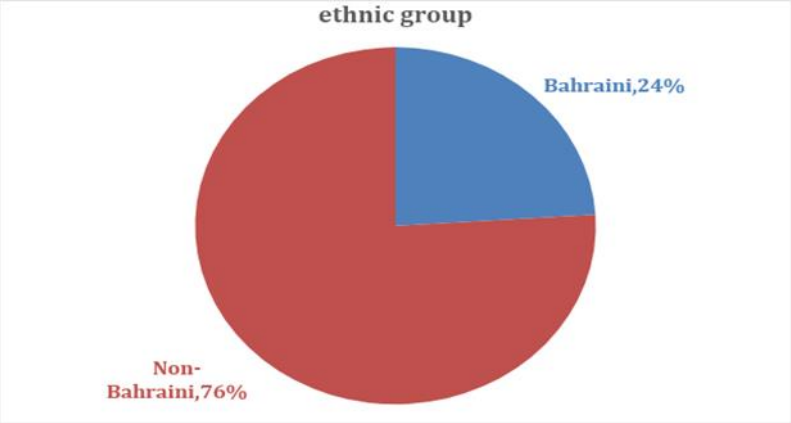

Figure 4: Percentage of the participants based on ethnicity

Research Findings for Pre-test, Post-test, and Advanced Post-test

The pre-test, post-test, and advanced post-test data were analyzed to determine the effectiveness of online activities through Google Classroom on students' Arabic writing and reading skills. To compare students' performance in experimental groups, the results are presented in the form of scores and mean scores. In addition to the scores, the information was also presented in an interview analysis as qualitative information to support the quantitative results, including the questionnaires.

Analysis of Pre-test, Post-test, and Advanced Post-test for Arabic Writing Skills

The study questions pertaining to the effectiveness of online instruction in Google Classroom on year 6 students' writing skills in terms of choice of Arabic vocabulary in writing, sentence patterns in guided writing, and sentence patterns in creative writing (non-guided) were addressed based on the findings in this section. The descriptive statistics utilized in the study were mean and frequency Arabic pre-test, post-test, and advanced post-test scores. The mean scores for the pre-test, post-test, and advanced post-test are displayed in Table 10. The study demonstrates that the intervention process had a significant effect on the experimental groups. The results showed that more students are passing the post-test with greater scores than they did on the pre-test. Also, more students got higher grades in the advanced post-test than they did in the post-test. These improvements were noticed in the rise in the proportion of students receiving 40 or average marks in the pre-test to those receiving 63 or 67 marks on average in the post-test and advanced post-test. More students were also obtaining A and B grades in the post-test and advanced post-test compared to the pre-test (Figure 5). There were more than 65 percent of students below average receiving C and D marks in the pre-test groups. Only two students received an A on the pre-test. However, as a result of the intervention, more than 80 percent received A and B grades in post-test and advanced post-test. The advanced post-test had a better success rate than the pre-test, which was inferred by the descriptive results. The research's hypotheses must, however, be supported in the next part of this chapter.

Table 10: Pre-test, Post-test, and Advanced Post-test Result for Arabic Writing Skills

ID	Pre-test	Post-test	Advanced post-test	Different (pre-test & Adv post-test)	ID	Pre-test	Post- test	Advanced post-test	Different (pre-test & Adv post-test)
EXP01	43	70	75	32	EXP41	49	58	63	14

EXP02	42	69	72	30	EXP42	57	66	87	30
EXP03	40	64	64	24	EXP43	43	65	90	47
EXP04	48	62	70	22	EXP44	42	66	88	46
EXP05	46	74	63	17	EXP45	42	49	73	31
EXP06	55	79	67	12	EXP46	45	81	71	26
EXP07	55	69	59	4	EXP47	44	84	69	25
EXP08	54	50	66	12	EXP48	42	78	56	14
EXP09	47	50	61	14	EXP49	61	60	57	-4
EXP10	45	51	63	18	EXP50	54	61	59	5
EXP11	42	69	69	27	EXP51	41	60	63	22
EXP12	40	64	70	30	EXP52	55	71	67	12
EXP13	44	71	72	28	EXP53	52	62	69	17
EXP14	56	49	73	17	EXP54	52	74	71	19
EXP15	58	58	79	21	EXP55	58	80	70	12
EXP16	49	66	70	21	EXP56	56	58	61	5
EXP17	58	65	68	10	EXP57	49	72	79	30
EXP18	54	66	69	15	EXP58	49	65	81	32
EXP19	48	49	60	12	EXP59	57	64	67	10
EXP20	57	81	56	-1	EXP60	44	62	80	36
EXP21	50	84	55	5	EXP61	49	61	67	18
EXP22	46	78	74	28	EXP62	41	54	63	22
EXP23	52	60	75	23	EXP63	40	61	62	22

EXP24	42	46	57	15	EXP64	41	55	66	25
EXP25	58	74	74	16	EXP65	42	67	70	28
EXP26	47	50	78	31	EXP66	44	59	62	18
EXP27	49	71	61	12	EXP67	50	54	60	10
EXP28	54	73	79	25	EXP68	58	52	58	0
EXP29	52	63	55	3	EXP69	58	66	59	1
EXP30	46	82	63	17	EXP70	51	56	73	22
EXP31	56	48	78	22	EXP71	44	68	71	27
EXP32	48	56	69	21	EXP72	40	69	69	29
EXP33	50	59	70	20	EXP73	56	64	56	0
EXP34	42	56	75	33	EXP74	47	71	77	30
EXP35	43	56	52	9	EXP75	48	49	59	11
EXP36	35	52	61	26	EXP76	58	58	63	5
EXP37	46	39	63	17	EXP77	47	66	67	20
EXP38	55	49	80	25	EXP78	43	65	69	26
EXP39	47	69	66	19	EXP79	52	56	70	18
EXP40	48	63	67	19	EXP80	45	68	76	31
TOTAL	1947	2504	2698	751		1946	2555	2738	792
Average						48.66	63.24	67.95	
Minimum Mark						40.00	50.00	65.00	

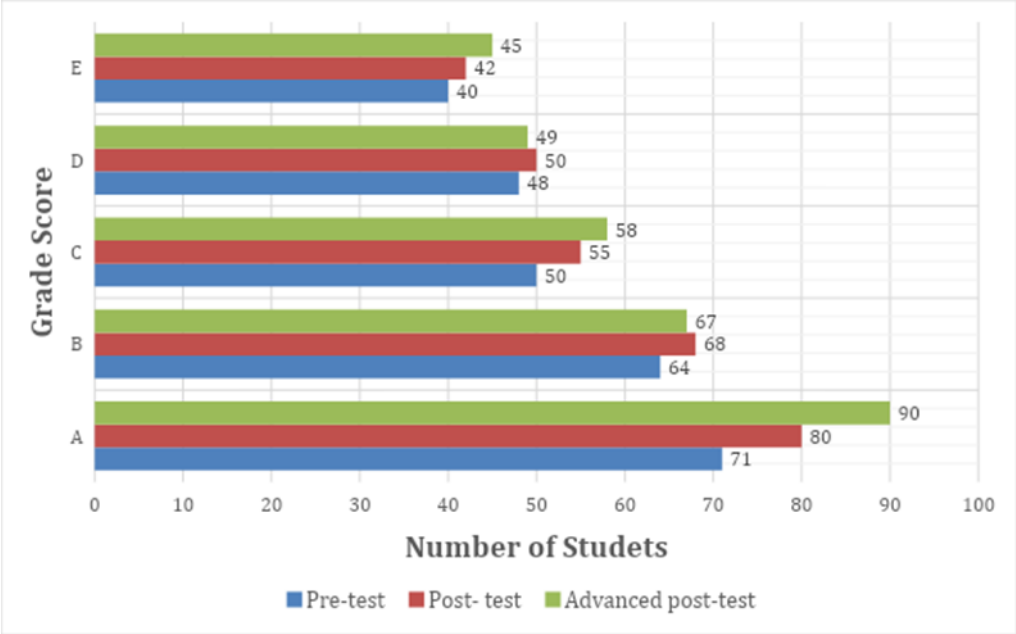

Figure 5: Marks for Pre-test, Post-test, and Advanced Post-test groups

The grading for the tests was based on the marking scheme of Arabic G6 Paper 1 provided by the District Educational Department of Manama based on Bahrain QAAET National Examinations in line with the Ministry of Education (MOE) Bahrain. The guided and creative writing will be categorised into five bands based on the scale: 5 (excellent); 4 (good); 3 (satisfactory); 2 (weak); and 0–1 (poor). Based on the marks awarded, the bands were determined. All parts of the test paper were scored using the grading matrix in Table 11.

Table 11: Grading for Pre-test, Post-test, and Advanced Post-test groups for Arabic Writing Skills

GRADE	MARKS	ACHIEVEMENT LEVEL
A	75-100	Excellent
B	60-74	Very Good
C	47-59	Good
D	30-46	Satisfactory
E	1-29	Unsatisfactory

Analysis of Pre-test, Post-test, and Advanced Post-test for Arabic Reading Skills

The purpose of this part is to analyse pre-test, post-test, and advanced post-test for Arabic reading skills that comprise (i) choice of Arabic vocabulary in reading, (ii) reading comprehension, and (iii) fluency. The researchers evaluated the choice of Arabic vocabulary in reading answer scripts using the Learning Theory Matrix based on constructivism focusing on reading in order to obtain data on the choice of Arabic vocabulary in reading for each student in all groups. For the purposes of this research, this matrix was adapted from the primary assessment. Table 12 displays the results of the pre-test, post-test, and advanced post-test results for vocabulary coverage in reading per time. The results were compared between the pre-test, post-test, and

advanced post-test. The overall choice of vocabulary in reading showed that the pre-test had a lower choice in reading than the post-test, with the advanced post-test having the highest choice of vocabulary in reading. Table 13 depicts the pre-test, post-test, and advanced post-test results for the choice of Arabic vocabulary in reading. The results were divided into three types: low, moderate, and high reading skills. A low result means the level of skill has been reduced below the average requirement, while a moderate result means the skill has fulfilled the average requirement. A high result means a higher level than average. The students in the pre-test group had a low choice of vocabulary in reading (3.98 average), in which each student had a low status, except for two students with moderate status. The students in the post-test had an average score of 8.33, resulting in moderate status in their choice of vocabulary in reading, except for one student with a high score. However, those students in the advanced post-test had an average of 12.16 for a high choice of Arabic vocabulary in reading, except for five students that showed moderate status. This indicated that the students in the advanced post-test and post-test showed greater effects and improvements following the intervention programme than the students in the pre-test.

Table 12: Pre-test, post-test, and advanced post-test result for choice of vocabulary in reading per time

Number of words	Choice of Vocabulary (%) per Time		
	Pre-test	Post- test	Advanced post-test
10	5	9	15
20	8	17	24
50	13	28	38
100	19	39	44
200	23	42	57
300	31	46	65
500	36	50	74

Table 13: Pre-test, Post-test, and Advanced Post-test Result for Choice of Arabic Vocabulary in Reading

ID	Pre-test	Status	Post-test	Status	Advanced post-test	Status	ID	Pre-test	Status	Post-test	Status	Advanced post-test	Status
EXP 01	3	Low	9	Moderate	11	High	EXP 41	2	Low	10	Moderate	15	High
EXP 02	3	Low	6	Moderate	11	High	EXP 42	5	Low	8	Moderate	14	High

EXP 03	4	Low	7	Moderate	10	Moderate	EXP 43	5	Low	10	Moderate	15	High
EXP 04	2	Low	7	Moderate	9	Moderate	EXP 44	2	Low	9	Moderate	10	Moderate
EXP 05	3	Low	7	Moderate	13	High	EXP 45	4	Low	10	Moderate	13	High
EXP 06	3	Low	8	Moderate	15	High	EXP 46	2	Low	8	Moderate	15	High
EXP 07	3	Low	8	Moderate	13	High	EXP 47	4	Low	10	Moderate	12	High
EXP 08	4	Low	9	Moderate	10	High	EXP 48	3	Low	10	Moderate	15	High
EXP 09	7	Moderate	6	Moderate	9	Moderate	EXP 49	2	Low	9	Moderate	13	High
EXP 10	5	Low	8	Moderate	13	High	EXP 50	2	Low	8	Moderate	12	High
EXP 11	4	Low	6	Moderate	14	High	EXP 51	4	Low	11	Moderate	11	High
EXP 12	4	Low	5	Moderate	15	High	EXP 52	2	Low	9	Moderate	14	High
EXP 13	3	Low	11	High	10	High	EXP 53	2	Low	9	Moderate	14	High
EXP 14	3	Low	7	Moderate	13	High	EXP 54	4	Low	9	Moderate	11	High
EXP 15	6	Low	9	Moderate	14	High	EXP 55	5	Low	10	Moderate	13	High
EXP 16	5	Low	6	Moderate	11	High	EXP 56	5	Low	7	Moderate	13	High
EXP 17	5	Low	8	Moderate	11	High	EXP 57	5	Low	11	Moderate	15	High

EXP 18	3	Low	6	Moderate	12	High	EXP 58	6	Low	9	Moderate	11	High
EXP 19	5	Low	6	Moderate	11	High	EXP 59	4	Low	10	Moderate	11	High
EXP 20	3	Low	6	Moderate	15	High	EXP 60	5	Low	8	Moderate	11	High
EXP 21	3	Low	9	Moderate	11	High	EXP 61	3	Low	6	Moderate	11	High
EXP 22	4	Low	10	Moderate	14	High	EXP 62	3	Low	14	Moderate	11	High
EXP 23	3	Low	9	Moderate	12	High	EXP 63	4	Low	7	Moderate	12	High
EXP 24	3	Low	9	Moderate	13	High	EXP 64	2	Low	6	Moderate	12	High
EXP 25	4	Low	6	Moderate	15	High	EXP 65	5	Low	7	Moderate	12	High
EXP 26	5	Low	10	Moderate	14	High	EXP 66	3	Low	10	Moderate	12	High
EXP 27	3	Low	8	Moderate	15	High	EXP 67	5	Low	7	Moderate	11	High
EXP 28	5	Low	8	Moderate	10	Moderate	EXP 68	5	Low	8	Moderate	13	High
EXP 29	6	Low	9	Moderate	13	High	EXP 69	3	Low	9	Moderate	14	High
EXP 30	5	Low	9	Moderate	13	High	EXP 70	6	Low	8	Moderate	13	High
EXP 31	5	Low	9	Moderate	11	High	EXP 71	3	Low	4	Moderate	14	High
EXP 32	3	Low	6	Moderate	15	High	EXP 72	3	Low	6	Moderate	15	High

EXP 33	7	Mode rate	6	Mode rate	12	High	EXP 73	4	Lo w	9	Mode rate	13	High
EXP 34	4	Low	7	Mode rate	12	High	EXP 74	4	Lo w	9	Mode rate	15	High
EXP 35	3	Low	7	Mode rate	12	High	EXP 75	3	Lo w	8	Mode rate	14	High
EXP 36	4	Low	5	Mode rate	11	High	EXP 76	6	Lo w	9	Mode rate	14	High
EXP 37	4	Low	10	Mode rate	14	High	EXP 77	5	Lo w	10	Mode rate	13	High
EXP 38	5	Low	8	Mode rate	14	High	EXP 78	4	Lo w	10	Mode rate	14	High
EXP 39	6	Low	6	Mode rate	15	High	EXP 79	5	Lo w	10	Mode rate	11	High
EXP 40	5	Low	8	Mode rate	12	High	EXP 80	3	Lo w	11	Mode rate	11	High
TOT AL								31 9		66 6		973	
Aver age								3. 98		8.3 3		12.16	

Table 14: Pre-test, Post-test, and Advanced Post-test Result for Reading Comprehension

ID	Pr e- te st	Statu s	Po st- test	Statu s	Adva nced post- test	Statu s	ID	Pre- test	Statu s	Pos t- test	Statu s	Adva nced post- test	Statu s
EXP01	5. 00	Low	9.0 0	Mode rate	13.00	High	EX P41	6.0 0	Mode rate	8.0 0	Mode rate	13.00	High
EXP02	5. 00	Low	9.0 0	Mode rate	11.00	High	EX P42	3.0 0	Low	4.0 0	Mode rate	14.00	High
EXP03	3.	Low	6.0	Mode	10.00	High	EX	3.0	Low	6.0	Mode	15.00	High

	00		0	rate			P43	0		0	rate		
EXP04	7.00	Moderate	6.00	Moderate	12.00	High	EXP44	4.00	Low	9.00	Moderate	13.00	High
EXP05	4.00	Low	7.00	Moderate	12.00	High	EXP45	4.00	Low	9.00	Moderate	15.00	High
EXP06	3.00	Low	7.00	Moderate	12.00	High	EXP46	3.00	Low	8.00	Moderate	14.00	High
EXP07	4.00	Low	6.00	Moderate	10.00	Moderate	EXP47	5.00	Low	7.00	Moderate	12.00	High
EXP08	5.00	Low	10.00	Moderate	14.00	High	EXP48	3.00	Low	10.00	Moderate	12.00	High
EXP09	3.00	Low	8.00	Moderate	10.00	Moderate	EXP49	5.00	Low	7.00	Moderate	11.00	High
EXP10	5.00	Low	8.00	Moderate	10.00	Moderate	EXP50	5.00	Low	8.00	Moderate	13.00	High
EXP11	6.00	Moderate	9.00	Moderate	13.00	High	EXP51	3.00	Low	9.00	Moderate	14.00	High
EXP12	3.00	Low	9.00	Moderate	11.00	High	EXP52	2.00	Low	10.00	Moderate	15.00	High
EXP13	3.00	Low	6.00	Moderate	11.00	High	EXP53	5.00	Low	8.00	Moderate	14.00	High
EXP14	4.00	Low	10.00	Moderate	10.00	Moderate	EXP54	5.00	Low	10.00	Moderate	10.00	Moderate
EXP15	2.00	Low	7.00	Moderate	9.00	Moderate	EXP55	2.00	Low	9.00	Moderate	10.00	Moderate
EXP16	3.00	Low	7.00	Moderate	13.00	High	EXP56	4.00	Low	10.00	Moderate	13.00	High
EXP17	5.00	Low	8.00	Moderate	10.00	Moderate	EXP57	3.00	Low	11.00	High	11.00	High
EXP18	5.	Low	6.0	Mode	11.00	High	EX	4.0	Low	10.	Mode	11.00	High

	00		0	rate			P58	0		00	rate		
EXP19	3.00	Low	6.00	Moderate	15.00	High	EXP59	5.00	Low	8.00	Moderate	11.00	High
EXP20	3.00	Low	9.00	Moderate	11.00	High	EXP60	3.00	Low	6.00	Moderate	11.00	High
EXP21	6.00	Moderate	10.00	Moderate	14.00	High	EXP61	3.00	Low	14.00	High	11.00	High
EXP22	3.00	Low	11.00	High	12.00	High	EXP62	4.00	Low	7.00	Moderate	10.00	Moderate
EXP23	3.00	Low	9.00	Moderate	10.00	Moderate	EXP63	2.00	Low	6.00	Moderate	12.00	High
EXP24	4.00	Low	5.00	Moderate	11.00	High	EXP64	6.00	Moderate	9.00	Moderate	10.00	Moderate
EXP25	4.00	Low	10.00	Moderate	14.00	High	EXP65	5.00	Low	10.00	Moderate	13.00	High
EXP26	5.00	Low	8.00	Moderate	14.00	High	EXP66	4.00	Low	10.00	Moderate	14.00	High
EXP27	6.00	Moderate	6.00	Moderate	10.00	Moderate	EXP67	5.00	Low	10.00	Moderate	10.00	Moderate
EXP28	3.00	Low	8.00	Moderate	15.00	High	EXP68	2.00	Low	8.00	Moderate	15.00	High
EXP29	3.00	Low	8.00	Moderate	13.00	High	EXP69	4.00	Low	10.00	Moderate	12.00	High
EXP30	4.00	Low	9.00	Moderate	10.00	Moderate	EXP70	3.00	Low	10.00	Moderate	15.00	High
EXP31	7.00	Moderate	6.00	Moderate	9.00	Moderate	EXP71	2.00	Low	9.00	Moderate	13.00	High
EXP32	5.00	Low	8.00	Moderate	13.00	High	EXP72	2.00	Low	8.00	Moderate	12.00	High
EXP33	4.	Low	5.0	Mode	15.00	High	EX	2.0	Low	9.0	Mode	14.00	High

	00		0	rate			P73	0		0	rate		
EXP34	3.00	Low	12.00	High	10.00	Moderate	EXP74	2.00	Low	9.00	Moderate	14.00	High
EXP35	3.00	Low	7.00	Moderate	13.00	High	EXP75	4.00	Low	9.00	Moderate	11.00	High
EXP36	6.00	Low	9.00	Moderate	14.00	High	EXP76	5.00	Low	10.00	Moderate	13.00	High
EXP37	5.00	Low	6.00	Moderate	11.00	High	EXP77	5.00	Low	7.00	Moderate	13.00	High
EXP38	5.00	Low	11.00	High	10.00	Moderate	EXP78	5.00	Low	11.00	High	15.00	High
EXP39	3.00	Low	6.00	Moderate	12.00	High	EXP79	6.00	Low	9.00	Moderate	11.00	High
EXP40	4.00	Low	6.00	Moderate	14.00	High	EXP80	4.00	Low	11.00	High	11.00	High
TOTAL								152.00		353.00		501.00	
AVERAGE								3.80		8.83		12.53	

Table 14 above displays pre-test, post-test, and advanced post-test results for reading comprehension. A total of 74 students (92.5 percent) in the pre-test group exhibit low status, and the remaining 6 students (7.5 percent) exhibit moderate status for reading comprehension. This indicates that students before the intervention process had low reading comprehension in general. Following the intervention process, a total of 73 students (92 percent) in the post-test group showed moderate status, and the remaining 7 students (8 percent) exhibited high status for reading comprehension, indicating improvement in the students' reading comprehension after the intervention process. The result of the advanced post-test further supported the post-test result, where the majority of the students (63, or 78.75%) categorised “high status” and the remaining 17 (211.25%) categorised “moderate status," indicating a great improvement in the students' reading comprehension from the post-test. Overall, the results of the reading comprehension indicate significant improvement after the intervention. Table 15 displays pre-test, post-test, and advanced post-test results for fluency. A total of 80 (100 percent) students in the pre-test group exhibit low status for fluency, indicating that students before the intervention process had low fluency in reading. Following the intervention process, a total of 78 (98 percent) students in the post-test group showed moderate status for fluency in reading, indicating significant improvement in the students' reading fluency after the intervention process. The result of the advanced post-test further supported the post-test result, where all students (100%) showed “high status," indicating the successful implementation of the reading intervention.

Overall, the results of the reading fluency demonstrate that there is a significant improvement after the intervention.

Table 15: Pre-test, Post-test, and Advanced Post-test Result for Fluency

ID	Pre-test	Status	Post-test	Status	Advanced post-test	Status	ID	Pre-test	Status	Post-test	Status	Advanced post-test	Status
EXP01	3.00	Low	8.00	Moderate	13.00	High	EXP41	3.00	Low	7.00	Moderate	13.00	High
EXP02	3.00	Low	8.00	Moderate	11.00	High	EXP42	3.00	Low	7.00	Moderate	13.00	High
EXP03	1.00	Low	6.00	Moderate	10.00	High	EXP43	3.00	Low	6.00	Moderate	12.00	High
EXP04	2.00	Low	6.00	Moderate	11.00	High	EXP44	2.00	Low	8.00	Moderate	13.00	High
EXP05	2.00	Low	6.00	Moderate	11.00	High	EXP45	2.00	Low	8.00	Moderate	12.00	High
EXP06	1.00	Low	6.00	Moderate	11.00	High	EXP46	3.00	Low	7.00	Moderate	13.00	High
EXP07	2.00	Low	6.00	Moderate	10.00	High	EXP47	1.00	Low	6.00	Moderate	11.00	High
EXP08	3.00	Low	8.00	Moderate	13.00	High	EXP48	3.00	Low	8.00	Moderate	11.00	High
EXP09	1.00	Low	7.00	low	10.00	High	EXP49	1.00	Low	6.00	Moderate	11.00	High
EXP10	3.00	Low	7.00	Moderate	10.00	High	EXP50	1.00	Low	7.00	Moderate	13.00	High
EXP11	3.00	Low	8.00	Moderate	13.00	High	EXP51	3.00	Low	8.00	Moderate	13.00	High
EXP12	1.00	Low	6.00	Moderate	11.00	High	EXP52	2.00	Low	8.00	Moderate	12.00	High

EXP13	1.00	Low	6.00	Moderate	11.00	High	EXP53	1.00	Low	7.00	low	13.00	High
EXP14	2.00	Low	6.00	Moderate	10.00	High	EXP54	1.00	Low	8.00	Moderate	10.00	High
EXP15	2.00	Low	6.00	Moderate	10.00	High	EXP55	2.00	Low	8.00	Moderate	10.00	High
EXP16	1.00	Low	6.00	Moderate	13.00	High	EXP56	2.00	Low	8.00	Moderate	13.00	High
EXP17	3.00	Low	7.00	Moderate	10.00	High	EXP57	3.00	Low	10.00	Moderate	11.00	High
EXP18	3.00	Low	8.00	Moderate	11.00	High	EXP58	2.00	Low	8.00	Moderate	11.00	High
EXP19	1.00	Low	6.00	Moderate	12.00	High	EXP59	1.00	Low	7.00	Moderate	11.00	High
EXP20	1.00	Low	6.00	Moderate	11.00	High	EXP60	3.00	Low	6.00	Moderate	11.00	High
EXP21	3.00	Low	8.00	Moderate	13.00	High	EXP61	3.00	Low	17.00	Moderate	11.00	High
EXP22	1.00	Low	6.00	Moderate	11.00	High	EXP62	2.00	Low	6.00	Moderate	10.00	High
EXP23	1.00	Low	6.00	Moderate	10.00	High	EXP63	2.00	Low	6.00	Moderate	11.00	High
EXP24	2.00	Low	6.00	Moderate	11.00	High	EXP64	3.00	Low	8.00	Moderate	10.00	High
EXP25	2.00	Low	6.00	Moderate	13.00	High	EXP65	1.00	Low	8.00	Moderate	13.00	High
EXP26	3.00	Low	7.00	Moderate	13.00	High	EXP66	2.00	Low	8.00	Moderate	13.00	High
EXP27	3.00	Low	8.00	Moderate	10.00	High	EXP67	1.00	Low	8.00	Moderate	10.00	High

EXP28	1.00	Low	6.00	Moderate	12.00	High	EXP68	2.00	Low	7.00	Moderate	12.00	High
EXP29	1.00	Low	6.00	Moderate	13.00	High	EXP69	2.00	Low	8.00	Moderate	11.00	High
EXP30	2.00	Low	6.00	Moderate	10.00	High	EXP70	3.00	Low	8.00	Moderate	12.00	High
EXP31	2.00	Low	6.00	Moderate	10.00	High	EXP71	2.00	Low	8.00	Moderate	13.00	High
EXP32	3.00	Low	7.00	Moderate	13.00	High	EXP72	2.00	Low	7.00	Moderate	11.00	High
EXP33	2.00	Low	7.00	Moderate	12.00	High	EXP73	2.00	Low	8.00	Moderate	13.00	High
EXP34	1.00	Low	6.00	Moderate	10.00	High	EXP74	2.00	Low	8.00	Moderate	13.00	High
EXP35	1.00	Low	6.00	Moderate	13.00	High	EXP75	2.00	Low	8.00	Moderate	11.00	High
EXP36	3.00	Low	8.00	Moderate	13.00	High	EXP76	1.00	Low	8.00	Moderate	13.00	High
EXP37	3.00	Low	8.00	Moderate	11.00	High	EXP77	1.00	Low	6.00	Moderate	13.00	High
EXP38	3.00	Low	9.00	Moderate	10.00	High	EXP78	1.00	Low	10.00	Moderate	12.00	High
EXP39	1.00	Low	6.00	Moderate	11.00	High	EXP79	3.00	Low	8.00	Moderate	11.00	High
EXP40	2.00	Low	6.00	Moderate	13.00	High	EXP80	2.00	Low	10.00	Moderate	11.00	High
TOTAL								81.00		313.00		471.00	
AVERAGE								2.03		7.83		11.78	

The research did not include generating or using any data, models, or code.

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