Investigating the Effectiveness of Using Structured and Unstructured Google Classroom on Grammar Learning Among Omani EFL Post-Basic Learners, and Perceived Benefits and Challenges

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Abstract

This study investigated the effectiveness of Google Classroom as a tool to improve grammar acquisition of Omani EFL learners. It analyzed students' responses to structured and unstructured Google Classroom frameworks, to examine how each framework impacts performance. Perceptions concerning the use of Google Classroom, and the challenges encountered when using the platform were also identified. The sample of the study included two groups (structured (61) and unstructured (54), n= 115) from grade 11 students from one of the schools in Muscat Governorate in the academic year 2020-2021. Two instruments were used to collect data: a grammar achievement test (pre-post-test) and a questionnaire. The results of the study revealed a statistically significant improvement in students' grammar performance, in favor of the structured Google Classroom group. All students were highly positive about using Google Classroom, finding it useful, enjoyable and easy. In the light of these findings, implications and recommendations are provided.

Keywords: learning management system, Google classroom, structured learning, unstructured learning; perceptions, teaching and learning

1. Introduction

Technology is becoming increasingly central to twenty-first century classrooms (Barman & Karthikeyan, 2019; Iftakhar, 2016; Stanley, 2013), with the need for instant delivery of knowledge resulting in novel teaching practices. It has been observed that technology can, through the creation of innovative learning experiences, help both EFL teachers and learners to achieve greater language proficiency. It affords students control over their learning, as they can access a variety of materials for independent practice (Aslani & Tabrizi, 2015; Azhar & Iqbal, 2018; Nabah et al., 2009; Nutta, 2013), engage with interactive materials (Stanton & Stammers, 1990; Sukmawati & Nensia, 2019), receive personalized and immediate feedback (Stanton & Stammers, 1990), and increase their motivation (Albashtawi & Al Bataineh, 2020; Aslani & Tabrizi, 2015; Prasetiyowati, 2018).

Recent circumstances, including the Covid-19 global pandemic, have increased the integration of e-learning into conventional education creating a blended learning environment. Many higher education institutions and schools have been prevented by national or international circumstances from participating in face-to-face teaching, and some institutions relied on the blended learning approach. Different learning management systems are used to support the learning process, e.g., Moodle, Google Classroom and Edmodo.

The subject of this research, Google Classroom, is an online interactive learning environment in which students are assisted by their teachers and peers to acquire knowledge or skills (Barman & Karthikeyan, 2019). Its innovative features include the delivery of engaging and effective lessons and building a collaborative learning environment including saving, organizing, ~~and~~ sharing informational content in files and links, sending quizzes and assignments, managing the creation and collection of students' work, tracking their progress and providing immediate and personalized feedback environment (Abd.Syakur et al., 2020; Al-Maroof & Al-Emran, 2018; Albashtawi & Al Bataineh, 2020; Barman & Karthikeyan, 2019; Haggag, 2019; Iftakhar, 2016).

In the context of language learning, grammar knowledge is a vital aspect of learners' writing and speaking that forms their overall accuracy and failing to understand grammar rules may result in miscommunication (Al Batineh et al., 2019; Al-Essa, 2018; Bataineh & Mayyas, 2017; Matriwati & Burhayani, 2017). Grammar is also vital for evaluating written and spoken language, as understood by readers and listeners. According to Ellis (2006), EFL learners view grammatical knowledge as a type of intellectual knowledge that permits them to feel confident and secure about using the language. Larsen-Freeman and Long (1991) also stated that inaccurate information when teaching grammar to EFL learners can result in inaccuracies in fluency and error fossilization.

Despite the importance of grammar knowledge, second and foreign language learners continue to experience difficulties due to the tediousness of the acquisition process. This is primarily due to the use of conventional teaching methods, in which grammar is taught directly from textbooks (Al-Essa, 2018, Isam, 2013; Khalil, 2018; Wyatt, 1984), with grammatical structures presented in meaningless and decontextualized forms isolated from their context of use (Khalil, 2018). It has also been reported that students encounter difficulties internalizing English grammatical rules, particularly due to the existence of exceptions and the inclusion of different spellings and endings

(Ameliani, 2019), which affect the application of grammatical knowledge in communicative language use (Al Mekhlafi & Nagartnam, 2011; Fitori, 2019).

Web-based tools and learning management systems (LMS), such as Google Classroom, Edmodo and Moodle, have been widely integrated into EFL classes by higher education institutions and some schools. LMS are especially useful for overcoming the challenges of grammar teaching (Al-Essa, 2018; Haggag, 2019; Khalil, 2018; Miller & Wu, 2018; Nurhayati, 2019; Nutta, 2013; Prasetiyowati, 2018; Qomariyah et al., 2019). Google Classroom has recently been used to support the supplementary and the effective delivery of courses and tutorials; moreover, it has been identified by teachers as both useful and motivating for students. Various studies have recognized its effectiveness for developing learner autonomy, increasing engagement and motivation, and allowing collaborative interactions with the teacher and other learners, furnishing authentic materials for practice and facilitating learning outside the classroom (Abd.Syakur et al., 2020; Haggag, 2019; Heggart & Yoo; 2018; Iftikhar, 2016; Khalil, 2018). However, the quantity of structures imposed on the use of online teaching modalities can influence students' performance (Hsieh & Tsai, 2012; Salter & Conneely, 2015). Some researchers believe that learners learn best when provided with explicit instructions (Clarck et al., 2012; Kay & Lauricella, 2011; Mohammadi-Aragh & Williams, 2013; Salter & Conneely, 2015), whereas others believe ideal learning environments for learners are unstructured (Njoo & De Jong, 1993; Stanton & Stammers, 1990). In addition, the research to date has concluded that both structured and unstructured learning environments are beneficial and rely on the learners' unique learning abilities. Learners with higher learning levels typically learn better with less guidance, while those at lower levels typically succeed with more guided instruction (Clark et al., 2012; Stanton & Stammers, 1990).

In the context of Oman's education system, the utilization of technology in English as a Foreign Language (EFL) classes is encouraged by the English Language Curriculum Framework (ELCF), which was published by the Ministry of Education in 2010. The ELCF requires that students learn to use a variety of technologies, and apply appropriate technical applications to resolve problems related to their daily lives (MOE, 2010). Nevertheless, the use of computers in Omani EFL classes is relatively limited, and does not yet correspond to national expectations, as mentioned in the ELCF (Al Dhuhli, 2010).

In reference to grammar teaching, it is also stated in the ELCF that grammar cannot be neglected, and appropriate methods should be sought to integrate it into the English language curriculum to enhance its role in facilitating the development of second language proficiency and communicative skills. One of the curriculum objectives is to give students a solid grounding in the core grammatical features of English, and to repeat as well as to integrate grammatical structures throughout the curriculum to ensure students are familiar with them (MOE, 2010). In addition, Omani English teachers perceive grammatical accuracy as a major criterion when evaluating learners' writing (Al-Kalbani, 2004). Al Abri (2016) also observed that many teachers spend a considerable amount of time encouraging the revision of grammatical rules to ensure their students can produce well written texts. Despite the prominence of grammar in the curriculum, many teachers in Oman are dissatisfied with their students' language accuracy and grammar comprehension (Al Abri, 2016; Al Ghafri, 2010; Al-Mekhlafi & Nagaratnam, 2011). According to Al-Mekhlafi and Nagaratnam (2011), teachers and students in Oman have experienced multiple challenges in terms of EFL grammar instruction, and teachers express significant concerns over their students' performance. They have recommended that serious attention should be paid towards addressing these difficulties. Studies analyzing the most frequent errors committed by EFL students in the Omani context have identified grammar as one of the main difficulties students face (Al-Adawi, 2019; Bakhshayesha, 2015; Sabtan & Elsayed, 2019).

Other studies investigating grammar learning in Oman have posited some explanations for challenges with grammar learning in Oman. According to Al Ghafri (2010) and Al Kalbani (2004), studying in crowded classrooms and access to limited opportunities to practice the language either inside or outside the classroom are the two principal factors that directly limit Omani students' success with grammar. Teachers are increasingly forced to follow a teacher-centered approach to teaching in crowded settings, which then restricts learners' opportunities for active and independent learning. Moreover, teachers are unable to provide sufficient support for those of their students who wish to practice using grammatical rules (Al Ghafri, 2010). The textbooks used in Oman present grammar rules explicitly alongside example sentences or questions about grammar points independent of context, and provide a limited number of exercises, which are considered insufficient to practice and internalize grammatical structures.

Although the literature maintains that Learning Management Systems (LMS) are useful for supporting language learning (Heggart & Yoo, 2018; Prasetiyowati, 2018; Sukmawati & Nensia, 2019, Zabolotskikh et al., 2020), their effectiveness for improving grammar performance have yet to be investigated in the Omani context. Only recently, due to Covid-19, has the Omani education system been forced to introduce reliable online platforms to deliver online and blended learning. When using online platforms, some teachers tend to provide explicit instructions to fulfil lesson requirements, while others do not. Moreover, the structure of online platforms can influence students' performance (Hsieh & Tsai, 2012; Salter & Conneely, 2015), a feature that needs to be investigated and explored in Oman. In addition, despite teachers' concerns over Omani students' grammar performance, the limitations associated with the grammar materials provided in the English textbook for grade 11, and the difficulties students' face when learning grammar (Al Abri, 2016; Al Ghafri, 2010; Al-Mekhlafi & Nagaratnam, 2011), there is a lack of studies investigating this skill in Oman. Therefore, a systematic investigation of the impact of Google Classroom LMS on improving grammar performance of Omani EFL learners, along with their reactions and perceptions of any identifiable challenges is needed to establish the platform's efficacy in the Omani context. More specifically this present study answers the following questions:

1. To what exent does the Google Classroom platform impact Omani EFL learners' grammar performance?

2. Are there any significant differences in grammar performance between the structured and unstructured groups?
3. Is there any significant interaction between the student language level and the type of instruction on the students' grammar performance?
4. What are the perceptions of students towards using Google Classroom to learn English grammar?
5. What are the challenges students face when using Google Classroom?

2. Literature Review

2.1 Teaching Grammar to ESL Learners

Like other aspects of Second Language Teaching (SLT), the teaching of grammar has been influenced by trends. It has moved away from a method of 'grammar translation' to one that is 'communicative', along with recent concepts focusing on forms. The 'grammar translation' method expects learners to memorize grammar rules and practice their use including applying the correct structures instead of just using the language in a meaningful context (Prasetiyowati, 2018). Those taught using this method tend to lack fluency, which has led to the development of communicative language teaching, with the aim of communicating with others using meaningful opportunities and thus grammar being acquired in a natural manner (Hedge, 2000). This method has sought to develop fluency without providing explicit teaching or awareness of language forms. Learners have been found to develop good listening and speaking skills, but only limited grammatical skills (Cameron, 2001). Concerns for the language accuracy of learners has resulted in a renewed emphasis on the important role played by grammar in language teaching, including a need to focus explicit attention on forms and rules (Cameron, 2001). Pinker (1991) considered that, although the accurate development of grammar can occur naturally in the first language, when it comes to a foreign or second language it requires the skilled planning of lessons and activities, alongside the use of explicit teaching strategies. This attention to forms has recently gained popularity and has been supported by many applied linguists such as structural syllabus advocates. Various models have been found to assist grammar teaching, in particular those suggesting the appropriate sequence of grammar learning activities.

2.2 Difficulties in the Learning and Teaching of Grammar

Despite the critical role of grammar knowledge in second language learning, both learners and teachers experience a variety of difficulties. Researchers have identified this as being largely in response to the subject being considered dry and dull primarily due to conventional teaching methods (Al-Essa, 2018). Thus, teaching directly from textbooks has proved insufficient to master grammatical rules (Khalil, 2018; Wyatt, 1984), particularly as this requires learners to memorize the rules and apply them in the activities provided. Learners tend to find grammar more interesting when they are able to apply their grammatical knowledge to clear, simple and authentic activities and when the grammatical rules are presented in real-life situations (BaSaeed, 2013).

A further drawback associated with the learning of grammar is difficulty in applying the grammatical knowledge in a communicative language, i.e. decisions concerning the most appropriate form to convey the required meaning (Al Abri, 2016; Al Mekhlafi & Nagartnam, 2011; Fitori, 2019). Learners tend to vary in their ability to apply grammatical rules, based largely on the individual formulation of internal grammar arising from their unique learning experiences. Moreover, Ameliani (2019) reported that many learners face difficulties in internalizing the grammatical rules of English, particularly as these contain exceptions, as well as words that have many different spellings and endings. This problem increases when learners have been insufficiently exposed to correct grammatical input, either at school or in the home environment, and lack sufficient opportunities to practice. In addition, they can also produce inaccurate language arising from fossilized errors that their teachers find difficult to correct within a spoken communicative context (Al Mekhlafi & Nagartnam, 2011), primarily due to a desire to encourage students' language fluency. This confirms the importance of feedback, along with the use of strategies to focus on forms without interrupting the flow of spoken language.

Technology can prove beneficial for resolving these challenges for the sake of increasing learners' exposure to the language (Al Ghafri, 2010, Khalil, 2018, Nutta, 2013), providing an innovative learning experience, (Isam, 2013, Khalil, 2018), facilitating the use of authentic materials (Miller & Wu, 2018, Nutta, 2013), and allowing for a considerable degree of practice (Wyatt, 1984).

2.3 Computer Assisted Language Learning (CALL) and Learning Grammar

Many studies have reported positive findings in relation to Computer Assisted Language Learning (CALL). Researchers examining the use of computer-based second language grammar instruction have concluded that it can be as or more effective than conventional instruction alone, i.e. lectures and workbooks (Abd.Syakur et al., 2020; Al-Essa, 2018; Al Ghafri, 2010; Khalil, 2018; Matriwati & Burhayani, 2017; McEnery et al., 1995; Nutta, 2013). CALL methods assist learners by exposing them to various learning materials and exercises, thus enabling them to practice specific grammatical structures (Al Ghafri, 2010; Khalil, 2018; Nutta, 2013), including, as noted by Nutta (2013), using interactive applications to supplement or replace classroom instruction. This is due to extensive exposure to the language, alongside opportunities for intensive practice, facilitating learners in the development of their grammatical knowledge (Hedge, 2000; Wyatt, 1984).

A number of educators have highlighted the benefits of CALL for providing detailed, immediate and personalized feedback (Al Ghafri, 2010; Azhar & Iqbal, 2018; Gass, 1997; Nutta, 2013; Wyatt, 1984). Some have claimed that this feedback process can, at times, be more effective than feedback given by teachers (Al Ghafri, 2010). This has resulted in: (1) reducing the demands placed on EFL teachers; (2) providing a pressure-free learning environment; and (3) saving time during class (Salaberry, 2001). Moreover, many computer programs permit the storing of learners' responses, along with their results, allowing both teachers and learners to track the learning progress (Wyatt, 1984).

CALL also supports student-centered, active and autonomous learning. Hedge (2000) stated that the amount of time required for learning a new grammatical structure differs between learners, as they need to make connections between forms, functions and stylistic use, which can be supported by the use of computers. According to Wyatt (1984) grammatical competence can be acquired in an individual manner through the use of a computer, since it adapts to the wide-ranging needs of learners. CALL also provides explicit grammar instruction that learners are able to view at their own pace, enabling them to move freely between components, in response to their individual needs (Nabah et al., 2009). A meta-analysis of research conducted by Ragan et al. (1993) concerning the use of multimedia in the teaching of different subjects, revealed that, in comparison to conventional instruction, multimedia instruction decreased learning time by 30%. Furthermore, the learners' ability to access various materials in some CALL programs allows them to take part in distance learning without requiring the presence of the teacher (Khalil, 2018; Matriwati & Burhayani, 2017; Miller & Wu, 2018; Wyatt, 1984). This process can result in further benefits for EFL learners who have limited exposure to the English language outside of their school.

Many educators have confirmed that a further advantage of CALL is the exposure to real and meaningful materials. Contexts in which focused grammatical structures are embedded generally prove beneficial in enabling grammar to become generative and applicable in relevant situations (Hedge, 2000). Nutta (2013) stated that the Internet can provide a rich input for authentic materials, in particular to compensate for the difficulties experienced by learners when communicating with native English speakers in second language learning contexts. This argument was supported by Miller and Wu (2018), who stated that the availability of real contexts in the digital world can motivate learners and improve their understanding.

2.4 Overview of the Google Classroom Platform

Google Classroom is an educational platform used for blended and online learning, and it has been developed by Google and released to the public on August 12, 2014 (Abd.Syakur et al., 2020; Barman & Karthikeyan, 2019; Beaumont, 2018). It facilitates the creation of a classroom in cyberspace capable of being accessed from any device. Sukmawati and Nensia (2019) view Google Classroom as an effective tool for teaching and learning, primarily due to its unique functions for social and pedagogical interactions. In addition, it supports: (1) the creation and management of classes; (2) the distribution and collection of activities and assignments; (3) the provision of efficient feedback; (4) the posting of announcements; (5) the uploading and organizing of different materials in folders (i.e. documents, videos, PowerPoint and games); (6) the creation of individual posts, and (7) the ability to invite colleagues and guests to attend virtual classes (Abd.Syakur et al., 2020; Al Bashtawi & Al Batineh, 2020; Al-Maroof & Al-Emran, 2018; Barman & Karthikeyan, 2019; Beaumont, 2018; Khalil, 2018; Prasetiyowati, 2018; Sukmawati & Nensia, 2019).

A number of studies have demonstrated the benefits of Google Classroom. Firstly, it can streamline communication and workflow for students, in particular by supporting individual access to discussions and assigned work (Abd.Syakur et al., 2020; Barman & Karthikeyan, 2019; Haggag, 2019; Iftikhar, 2016; Sukmawati & Nensia, 2019). Furthermore, it supports efficient online collaboration, enabling teachers to send announcements and notifications to students, with the aim of initiating discussions or informing them of specific learning activities (Abd.Syakur et al., 2020; Iftakhar, 2016). Students also have the opportunity to provide assistance and feedback to their peers. Secondly, it helps teachers save time, as it simplifies the process of document distribution, formative assessment and grading, while at the same time allowing immediate feedback (Abd.Syakur et al., 2020; Beaumont, 2018; Iftikhar, 2016; Sukmawati & Nensia, 2019). It thus avoids the time wasted in conventional classes preparing and distributing printed documents, allowing teachers to devote more time to their students (Abd.Syakur et al., 2020; Al-Maroof & Al-Emran, 2018; Barman & Karthikeyan, 2019). The interactive tools or programs designed for assessment or practice, and supported by Google Classroom (i.e. Google forms, Word Wall, interactive worksheets), can help learners to receive direct feedback. Khalil (2018) indicated that this brings an additional benefit, allowing Google Classroom to provide learners with instant and constructive feedback and evaluate their progress. Furthermore, teachers can employ tracking mechanisms to follow the progress of their students for assigned tasks, providing personalized feedback and identifying individual areas of weakness (Abd.Syakur et al., 2020; Iftikhar, 2016; Sukmawati & Nensia, 2019). Thirdly, Google Classroom provides centralized data storage for each individual, facilitating students in extending their learning outside the classroom, as well being able to view materials at their own learning pace. The Google Classroom platform enables teachers to upload digital content for each lesson (i.e. audio and video) and organize them into files, allowing students to save and learn at their own convenience (Barman & Karthikeyan, 2019; Sukmawati & Nensia, 2019).

Despite these advantages, Google Classroom contains a number of limitations. Firstly, there remain various concerns over the issue of technical support. Technological challenges can hinder the effective use of certain programs, which impacts on installation, registration, operations and network administration (Haggag, 2019; Heggart & Yoo; 2018; Islam, 2019; Muslimah, 2018). Secondly, both a reliable Internet connection and a desktop, laptop computer or other devices such as tablets and phones are required to establish effective access to all Google Classroom features, including the downloading of materials (Barman & Karthikeyan, 2019), particularly if teachers upload materials using applications unsupported by mobile phones. Thirdly, the preparation of digital materials places an additional workload on teachers, as well as selecting appropriate online resources, and writing and posting instructions in the platform (Barman & Karthikeyan, 2019).

2.5 Structured and Unstructured Learning

Online platforms have recently become increasingly popular, prompting teachers to develop different means of fulfilling the unique needs of their lessons, including their structure. This varies from providing rapid access to platform content to creating opportunities for detailed guidance and explicit instructions (Chadwick & Ralston, 2010). Learning is frequently regulated by the teacher through the structured use of

technology (Stanescu et al., 2016). Miri (2015) defined structured learning as the clarity of the more significant instructions and activities illustrated in time, including: (1) guiding students by introducing procedures in a step by step manner; (2) clarifying any points that have not been understood; and (3) encouraging them to complete the different activities. This contrasts with an unstructured environment, in which teachers initiate learning, but do not impose specific procedures to achieve the required learning outcomes (Stanescu et al., 2016; Stanton & Stammers, 1990; Topu & Goktas, 2019). This aspect enables students to determine the sequence of learning materials and practice them freely. This type of partially guided learning has been given various names, including: (1) inquiry learning; (2) discovery learning; and (3) constructivist learning (Clark et al., 2012). According to Njoo and De Jong (1993), exploratory learning with a computer simulation does not involve explicit teaching, but rather offers an open learning environment capable of formulating students' own learning.

Furthermore, the degree of structure imposed on online teaching modalities has the potential to influence students' performance, participation and engagement (Hsieh & Tsai, 2012; Njoo & Tong, 2017; Salter & Conneely, 2015; Topu & Goktas, 2019). Considerable debate has been undertaken to determine the most effective learning environment, with educators arguing firstly, that students learn best when they are provided with all essential information with explicit and full instructional guidance (Hannafin, 2004; Miller & Wu, 2018; Salter & Conneely, 2015; Topu & Goktas, 2019) and secondly, that unstructured (or partly guided) learning environments assist students in the construction of their own learning (Conrad & Donaldson, 2011; Dixson, 2012; Njoo & De Jong, 1993). Research has concluded that both types of learning environment can prove beneficial, depending on the unique learning abilities and preferences of learners.

3. Methodology

3.1 Research Design

The study employs a quasi-experimental design, where two experimental groups were compared. A pre- and post-test was utilized to measure the differences in gain between the two groups after the treatment. In addition, a survey questionnaire was used to identify the benefits and the challenges in using the Google Classroom platform for both structured and unstructured Google Classrooms as perceived by learners.

3.2 Population and Sample

The study population are Omani Grade Eleven female students who attended public schools in Muscat during the academic year 2020/2021. According to the Annual Educational Statistics Book produced by the Ministry of Education, 4617 female students were registered in Grade Eleven in Muscat for that year (MOE, 2021). The study sample consists of four intact classrooms with a total number of 115 students. The sample was assigned to two experimental groups: structured and unstructured. Two classes (n=61 students) comprised the structured group and the other two classes (n=54 students) comprised the unstructured group.

Two teachers participated in this study; one taught the two classes comprising the structured group and another teacher taught the two classes forming the unstructured group. Providing the same teacher for the two classes in each grouping was deliberate so that each teacher would be able to focus on one way of structuring the classes, rather than being influenced by exposure to two different treatments. The two teachers were selected because they were teaching Grade Eleven, and hold the same educational qualifications. The researchers conducted a meeting with the cooperating teachers prior to the intervention to introduce a manual of guidelines prepared for use during the intervention.

To ensure the equivalence of the sample, the researchers selected four classes who had achieved similar results for their English tests in the previous year, 2019/2020. The homogeneity of the students was confirmed by conducting a pre-grammar test for the structured and unstructured groups. To compare the grammar scores for the two groups, an independent sample t-test was run. Table 1 reveals there was no statistically significant difference in the scores of the structured group (M= 15.00, SD= 3.95) and the unstructured group (M= 14.85, SD= 5.03); t (113) = .17, p= .86, two-tailed. The results depict the equivalence of the two groups in terms of their grammar knowledge levels prior to implementing Google Classroom to teach grammar.

Table 1. Independent-Sample T-test for the Structured and Unstructured Groups' Pre-test Scores (n =115)

Group	*N*	*M*	*SD*	*Df*	*t*	*p*-value
Structured	61	15.00	3.95	113	.17	.86
Unstructured	54	14.85	5.03			

In addition, the students who participated in this study were classified into different levels to identify any differences in their grammar performance between structured and unstructured Google Classroom, which could be attributed to the students' language levels. Based on their grades in the English language subject for grade ten in the academic year 2019/ 2020, they were classified into two language levels: (1) high for students with grades above average, which was found to be 85.5, and (2) low for students with grades below average. The average grade was used as a measure because there are no cut off points in the MoE assessment specifications for classifying students into higher and lower levels. Table 2 displays the number of students in each of the two levels from both groups.

Table 2. The Numbers of High and Low Level Students in the Structured and Unstructured Groups

Group	Language Levels	*N*
Structured	High	40
	Low	21
	Total	61
Unstructured	High	35
	Low	19
	Total	54

3.3 Research Instruments and Materials

3.3.1 Description of the Grammar Achievement Test

The grammar achievement test answered the first, second and third research questions. Using the MoE specifications for Grade Eleven examinations a test was developed by the researchers with the assistance of the former head of Testing and Assessment Unit in the Centre for Preparatory Studies in SQU. The total score for the test was 24 marks, and the instrument was divided into three groups of questions for completion in 30 minutes. Grammar One required the students to read a passage and fill-in-the blanks by selecting from given options, while Grammar Two asked them to complete separate sentences and questions from the multiple-choice options provided. In Grammar Three, the students were required to complete a conversation with one word to replace each blank. The same test was administered before and after the intervention. The purpose of the pre-test was to ensure the two groups attained the same level of EFL grammar proficiency, while the post-test sought to identify any possible progress and discrepancies between the two groups.

3.3.2 Validity and Reliability of the Grammar Achievement Test

The grammar achievement test was validated by a jury of 13 experts in the field of education to assess its clarity, appropriateness to the study sample and whether the test questions measured the grammar structures intended. The jury members were academics at Sultan Qaboos University, specialists in the Centre of Assessment and Measurement, and practitioners at the MoE. Based on their feedback, some minor modifications were made, such as changing certain options on the multiple-choice questions, and deleting a two questions due to their difficulties. To establish reliability, the grammar achievement test was piloted with one Grade Eleven class (n=28 students), which was not included in the study sample. The Cronbach's Alpha value was computed to establish the reliability of the test and it was found reliable at 0.78, which suggested a good level of consistency.

3.3.3 Description of the Questionnaire

Following the intervention, a questionnaire was administered to both treatment groups to answer the fourth and fifth research questions: The questionnaire was developed by the researchers based on a review of the literature and related studies on Learning Management Systems (Albashtawi & Al Bataineh, 2020; Al-Essa, 2018; Al Ghafri, 2010; Khalil, 2018; Manowong, 2016; Muslimah, 2018). Validated scales were used in these studies and undertaken in the current research as a reference to develop the perceptions items. Modifications were made to the statements to suit the purpose of the current study.

The questionnaire comprised of two main sections: (1) students' perceptions towards using Google Classroom in learning English grammar, and (2) challenges faced utilizing this platform. The first part included sixteen statements falling into four dimensions: (1) usefulness of Google Classroom, (2) ease of use, (3) communication and interaction and (4) satisfaction. The second section consisted of six statements, and an open-ended question was added to provide insights into the challenges faced by the students when using Google Classroom to teach grammar lessons. A five-point agreement Likert scale was used to respond to the items as follows: 5= strongly agree, 4= agree, 3= neutral, 2= disagree and 1= strongly disagree. The questionnaire was translated into Arabic, the participants' first language, to make it easier for those students with differing proficiency levels in English to understand and respond.

3.3.4 Validity and Reliability of the Questionnaire

The questionnaire's validity was checked by subject matter experts and practitioners. Based on their comments, modifications were made to the questionnaire, including rephrasing some of the statements and clarifying a few of the items. To determine the questionnaire's reliability, it was piloted on 26 Grade Eleven female students. The Cronbach's alpha value was found to be reliable at the value of 0.72.

3.3.5 Teacher's Manual

Based on the reviewed literature concerning the use of the Google Classroom and structured and unstructured learning, and on the researchers' teaching experience, the researchers developed two teacher manuals for the teacher participants to guide them regarding the proper implementation during the intervention for the purpose of the current study. The manuals include benefits reported in previous research on using Google Classroom detailing the definitions and background to structured and unstructured learning, and providing instructions as to how to structure the use of Google Classroom for grammar classes. They also include instructional guidance on the use of Google Classroom. In addition, they were given access to a sample lesson plan and an outline of the grammar activities to be taught during the intervention.

3.3.6 Establishing the Validity of the Teacher's Manual

The manual was reviewed by technology specialists who work as faculty members in the Department of Instructional and Learning Technology from the College of Education at SQU, English language supervisors, and experienced teachers to evaluate its clarity and

applicability. They all agreed that it was clear and appropriate to the task, and two teachers suggested adding further details to the lesson plan. Few modifications were subsequently made accordingly.

3.3.7 Description of the Google Classroom Materials

The materials designed in Google Classroom were based on the grammatical content of three themes derived from the Grade 11 textbook for the first semester. The same learning objectives and sequence of grammar lessons were followed in the textbooks. Due to the use of electronic devices to deliver grammar lessons, all the grammar activities in the textbooks were converted into digital versions to allow interactions and immediate feedback. Google Classroom features enable the upload of a variety of digital materials, including: (1) videos; (2) PowerPoint presentations: (3) Microsoft Word files; and (4) links to online exercises and games. Files and documents were organized into files for easy access, and as a reference when needed. The first page in Google Classroom included a link to join online meetings, and the platform facilitated using a digital whiteboard for further elaboration.

3.4 Implementation

During the implementation of the research process, which included ten grammar sessions, both the structured and unstructured groups studied the same topics. The duration of all the sessions was between 40 minutes and one hour. The structured group was taught using Google Classroom, in which instructions were pre-sequenced during regularly scheduled classes. The activities were explained to students at the time they were introduced. The teacher's role was that of a guide, responsible for providing clear instructions to support Google Classroom activities and explanation of grammar rules. The teacher led and encouraged the students to complete the various Google Classroom activities uploaded for each lesson. In addition, she provided detailed guidance, and made use of the majority of the Google Classroom features. The teacher gave continuous feedback to scaffold students' learning. The students were prevented from exploring activities that their teacher had not requested them to access. Access to Google Classroom was allowed both during class time and after school, but within the parameters of the teacher's explicit directions.

The students in the unstructured group were introduced to Google Classroom and made aware of all its features. They were taught the grammar structure and then were encouraged to complete different activities available on Google Classroom but not forced to complete them all. They were also encouraged to use Google Classroom in an unstructured and self-determined way throughout the grammar lessons. They were permitted to freely decide their own sequence when completing the materials and practice activities. The students could also explore Google Classroom as a resource to determine what would benefit their learning process. Their use of Google Classroom was neither directed nor obligatory. The students took partial responsibility for their own learning and the teacher provided them with assistance only when requested. Access to Google Classroom was permitted both during class and after school.

4. Findings and Discussion

4.1 The Impact of Google Classroom on Omani Grade Eleven Students' Grammar Performance

To answer the first research question, 'To what extent does the Google Classroom platform impact Omani EFL learners' grammar performance?', pre- and post-grammar tests were administered to both the structured and unstructured groups. A paired-sample t-test was conducted to compare the scores before and after the intervention for both groups combined. Table 4 details the results from this test.

Table 4. Paired-Sample T-test for the Students' Scores in Pre- and Post-tests (n = 115)

Test	*M*	*SD*	*df*	*t*	*p*-value	Effect Size
Pre-test	14.93	4.47	114	-14.87	.000	.65
Post-test	18.52	3.63				

Total score = 24

A statistically significant increase was found in the mean scores of students before the intervention (M = 14.93, SD = 4.47) and their scores after the intervention (M = 18.52, SD = 3.63); t (114) = -14.87, p = .000 (two-tailed). The mean increase was 3.59 for the post-test, with a 95% confidence interval ranging from -4.06 to-3.11. According to the guidelines presented by Cohen (1988), the calculated Eta-squared statistic (.65) showed a large effect size; therefore, it can be concluded that Google Classroom had a positive impact on students' grammar performance.

4.2 The Impact of Structured and Unstructured Google Classroom on Omani Grade Eleven Students' Grammar Performance

To answer the second research question, 'Are there any significant differences in grammar performance between structured and unstructured groups?', an independent sample t-test was calculated to compare the post-test scores of the structured and unstructured groups. The results are presented in Table 5.

Table 5. Independent-Sample T-test for the Structured and Unstructured Groups' Post-test Scores (n =115)

Group	*N*	*M*	*SD*	*df*	*t*	*p*-value	Effect Size
Structured	61	19.20	2.43	113	2.15	.03	.04
Unstructured	54	17.76	4.53				

The results revealed a statistically significant difference between the mean scores for the students in the structured group (M = 19.20, SD = 2.43) and the unstructured group (M = 17.76, SD = 4.53); t (113) = 2.15, p = .03, (two-tailed). The effect size (0.04) suggested a small effect attributable to the effectiveness of the two environments. Simply put, students in the structured group outperformed those in the unstructured group.

Paired sample t-tests were also computed to further investigate the impact of both ways of structuring Google Classroom on students' performance. Tables 6 and 7 provide the results for the paired-sample t-tests in the structured and unstructured groups respectively.

Table 6. Paired-Sample T-test for the Pre- and Post-test for the Structured Group (n = 61)

Test	*M*	*SD*	*df*	*t*	*p*-value	Effect Size
Pre-test	15.00	3.95	60	-12.24	.000	.71
Post-test	19.20	2.43				

Total score = 24

Table 7. Paired-Sample T-test for the Pre- and Post-test for the Unstructured Group (n = 54)

Test	*M*	*SD*	*df*	*t*	*p*-value	Effect Size
Pre-test	14.85	5.03	53	-9.18	.000	.61
Post-test	17.76	4.53				

Total score = 24

The results showed significant increases for both groups, with greater improvement in the structured group. In the structured group the mean increased more from before the intervention (M = 15.00, SD = 3.95) to after the intervention (M = 19.20, SD = 2.43); t (60) = -12.24, p = .000, (two-tailed). The mean difference was 4.2 between the pre- and post-tests, with a 95% confidence interval ranging from -4.88 to -3.51. In contrast, the mean difference with the unstructured group was 2.91 between the pre- and post-tests, with a 95% confidence interval ranging from -3.54 to -2.27. However, the mean for the students' scores in the unstructured group also significantly increased between the pre-test (M = 14.85, SD = 5.03) and the post-test (M = 17.76, SD = 4.53); t (53) = -9.18, p = .000, (two-tailed) phases. These results indicate that both ways of structuring Google Classroom yield benefits, but that structured Google Classroom was more effective.

These results concur with the findings of Miller and Wu (2018), Miri (2015), Salter and Conneely (2015), and Topu and Goktas (2019), which affirmed that students learn better in a structured learning environment than in an unstructured one. Topu and Goktas (2019) concluded that explicit instructions enhance students' engagement and assist them in focusing on learning content. They also allow students to raise their mental awareness to meet set learning objectives. In contrast, students tend to make insufficient use of electronic resources to manage their own learning when they are given the choices of which materials to access in an unstructured learning environment (Kay & Lauricella, 2011).

In addition, a structured environment enables teachers to illustrate unclear points and promote motivation (Tpou & Goktas, 2019). This is also the case in the present study, in which the teacher's active role in the structured learning environment might result in assisting students to better comprehend and make efficient use of the materials provided in Google Classroom when directing their attention to a specific aspect of language. Moreover, teachers can provide regular feedback (Salter & Conneely, 2015) and affords learners the confidence to learn from a single authority (Gall, 2018).

By contrast, the findings of this study contradict those reported by Hanfeen (2004), who found no significant differences between the two groups compared (i.e. a structured and unstructured groups), although it was hypothesized that the structured group would potentially be expected to outperform the other group. The researcher attributed this finding to the possibility that the unstructured group was not independent enough to generate differentiation, because the students received numerous reminders to work on the program. This might have meant that the students included in this group were more likely to make effective use of the provided resources to manage their own learning. The results achieved in the present study partly disagree with those of Stanton and Stammers (1990), who found that the students in both groups achieved improvement, but with a better level of performance in the unstructured group. It was pointed out the students in the unstructured group had more practice, which was attributed to their ability to take responsibility for their own learning, and the opportunity they had to adopt their preferred style of learning. A notable conclusion drawn in this study was that the two environments are beneficial, as they emphasize student choice and afford them the capacity to manage their own learning environment.

4.3 The Impact of Structured and Unstructured Google Classroom on Students' Performance with Different Language Levels

To answer the third research question 'Are there any significant interaction effects between students' language level and the type of instruction on students' grammar performance?', a two-way ANOVA was computed for the post-test scores at the two levels, i.e. the high level and low level in each group. Tables 8 and 9 and Figure 1 display the results for the two-way ANOVA.

Table 8. Descriptive Statistics for the Post-test Scores for the High and Low Level Students in the Structured and Unstructured Groups

Language Levels	Group	*N*	*M*	*SD*
High	Structured	40	20.28	1.75
	Unstructured	35	19.94	3.15
	Total	70	20.12	2.49
Low	Structured	21	17.14	2.24
	Unstructured	19	13.74	3.91
	Total	40	15.53	3.55
Total	Structured	61	19.20	2.43
	Unstructured	54	17.76	4.53
	Total	115	18.52	3.63

Total score = 24

Table 9. Two-way ANOVA for the Post-test Scores for the High and Low Level Students in the Structured and Unstructured Groups

Source	Sum of Squares	*df*	Mean Square	*F*	*Sig.*	Partial Eta Squared
Language level	566.897	1	566.897	75.440	.000	.405
Group	90.844	1	90.844	12.089	.001	.098
Language level * group	61.426	1	61.426	8.174	.005	.069
Error	834.116	111	7.515			

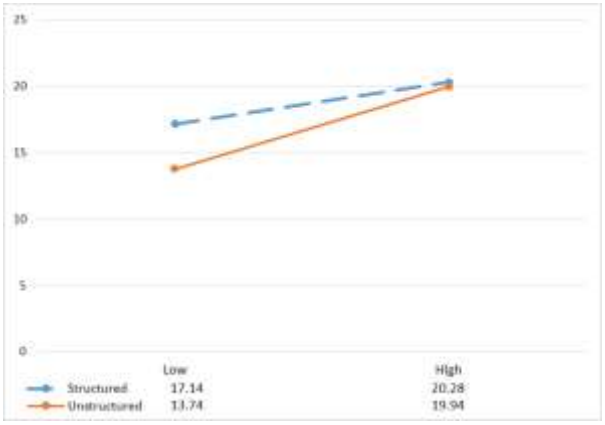

Figure 1. Effects of the Interaction between Students' Levels and Type of Structuring on Google Classroom on Post-test Scores

The results presented in Table 9 revealed a statistically significant interaction between language level and type of structuring the platform: F (1, 111) = 8,174, p= .005, ηp^2= .069. At the low level of language, students showed a significant difference in their post-test grammar performance across the two groups. As shown in Figure 1, students in the structured group (M= 17.14, SD= 2.24) outperformed those in the unstructured group (M= 13.74, SD= 3.91). By contrast, the results revealed a similar post-test grammar performance for the high-level students in the structured group (M= 20.28, SD= 1.75) and those at the same level in the unstructured group (M= 19.94, SD= 3.15).

These findings lend support to the literature, by clarifying that students' success in both types of learning environment could be dependent on their own unique learning abilities (Clark et al., 2012; Miri, 2015; Stanton & Stammers, 1990). The better performance of the low level students in the structured group compared to the unstructured group is probably linked to the more detailed guidance and explicit instructions provided to the structured group, as students with low skills are expected to respond better to more guided instructions (Stanton & Stammers, 1990). Unstructured learning requires students to take responsibility for their own learning, which many find challenging (Clark et al., 2012). In addition, Clark et al. (2012) stated that such an environment can cause frustration for some students, particularly beginners, and low level students who lack adequate confidence in their performance. Miri (2015) also claimed that more structured tasks are easier to understand and demand less cognitive processing.

These results do not echo those of Hanfeen (2004), who reported that low ability students performed lower in the structured group compared to their counterparts in the unstructured group. The researcher noted that the lack of distinction in the two higher level groups was possibly due to allowing students to work with a partner, which assisted the low ability students to manage their knowledge gaps, making it difficult to isolate effects. High level students are known to adapt well to different learning environments, although the structured environment was found to be marginally more effective than the unstructured environment as illustrated earlier in this section. More proficient learners have been found to develop strategies that assist them to learn in different environments. This is compatible with a study by Clark et al. (2012), which stated that high level learners are able to learn effectively with less guidance.

4.4 Students' Perceptions about Utilizing Google Classroom for Learning English Grammar

To answer the fourth research question, 'What are the perceptions of students towards using Google Classroom to learn English grammar?', a questionnaire was administered to the structured and unstructured groups following the intervention. The perceptions section consisted of sixteen statements categorized into four dimensions: (1) usefulness of Google Classroom (items 1-7), (2) ease of use (items 8-9), (3) communication and interaction (items 10-12), and (4) satisfaction (items 13-16). The participants had to rate each statement on a five-point Likert-scale. The collected data was analyzed using descriptive statistics, namely the mean and the standard deviation. Table 10 presents the scale used to interpret the means for students' perceptions relating to the use of Google Classroom.

Table 10. A Scale for Interpreting Students' Perceptions of Using Google Classroom in Grammar Classes

Scale Value	Degree of Agreement
1-1.80	Very Low
1.81-2.61	Low
2.62-3.42	Moderate
3.43-4.23	High
4.24-5	Very High

To compare the participant's perceptions with regard to the use of Google Classroom in grammar classes between the structured and unstructured groups, an independent sample t-test was run. The results are displayed in Table 11, including all four dimensions and the total mean for all the perceptions statements.

Table 11. Independent Sample T-test for Students' Perceptions of the Use of Google Classroom in Grammar Classes in the Structured and Unstructured Groups (n= 87)

Dimension	Structured		Unstructured				
	M	*SD*	*M*	*SD*	*df*	*t*	*p*-value
Usefulness of GC	3.81	.47	3.76	.57	85	.41	.68
Ease of Use	4.06	.58	3.98	.72	85	.53	.59
Communication and Interaction	3.36	.75	3.26	.81	85	.57	.56
Satisfaction	3.65	.80	3.40	.99	85	1.30	.19
Overall Perceptions	3.71	.48	3.60	.61	85	.94	.34

Table 11 demonstrates that in general the students in the two groups had a high overall positive perception concerning the use of Google Classroom in grammar sessions. The mean for the overall students' perceptions in the structured group (*M*= 3.71, *SD*= .48) and in the unstructured group (*M*= 3.60, *SD*= .61) revealed high positive discernment towards the use of Google Classroom. When comparing the students' responses between the two groups, there is neither a statistically significant difference between the two groups in their overall perceptions of the use of Google Classroom, t (85) = .94, p = .34, (two-tailed) nor any other statistically significant differences across the four dimensions included in the questionnaire. However, the structured group in general reported higher positive perceptions than the unstructured group. This higher positive perception for the structured group applies also across all four dimensions with a slightly greater difference in reference to the satisfaction dimension. The results indicated that the students in the structured group (*M*= 3.65, *SD*= .80) were more satisfied about using Google Classroom than those in the unstructured group (*M*= 3.40, *SD*= .99).

Since there are no statistically significant differences between the two groups in terms of their perceptions regarding the use of Google Classroom in grammar classes, the following sections present the students' perceptions for the two groups.

Usefulness of Google Classroom

The first seven items request that students evaluate the usefulness of Google Classroom for learning grammar. Table 12 displays the means and standard deviations for the items related to this dimension in descending order.

Table 12. Means and Standard Deviations for Students' Perceptions of the Usefulness of Google Classroom (n= 87)

Statement	*M*	*SD*
5. The availability of learning materials in Google Classroom has helped me revise grammar rules when needed.	4.17	.63
3. Explanations, quizzes, and other online activities given by the teacher in Google Classroom have helped me improve my learning.	3.99	.63
7. Using Google Classroom for learning English grammar has promoted my autonomous learning.	3.90	.83
6. Google Classroom has helped me obtain immediate feedback from grammar activities.	3.80	.76
4. Google Classroom has helped me practice grammar rules.	3.76	.80
1. I found that I have learned a lot in the grammar lessons using Google Classroom.	3.75	.75
2. Google Classroom makes learning grammar easier.	3.18	.98
Overall Usefulness	3.79	.52

The results revealed that students highly agreed they had benefited from utilizing Google Classroom for learning grammar (*M*= 3.79, *SD*= .52). They had high positive perceptions with the statements that their grammar learning experience was enhanced by, (1) the availability of learning materials in Google Classroom to revise grammar rules when needed (*M*= 4.17, *SD*= .63), and (2) the explanations, quizzes, and other online activities set by the teacher (*M*= 3.99, *SD*= .63). The feature of providing centralized data storage for each individual was regarded beneficial to facilitate extending learning outside school hours by enabling learners to view materials at their own convenience to suit their own learning pace (Barman & Karthikeyan, 2019; Sukmawati & Nensia, 2019). In addition, the results showed that students highly perceived that Google Classroom was useful for promoting autonomous learning (*M*= 3.90, *SD*= .83), getting immediate feedback to grammar activities (*M*= 3.80, *SD*= .76), and practicing grammar rules (*M*= 3.76, *SD*= .80). However, the findings revealed that the students had a moderate level of agreement that Google Classroom makes learning grammar easier. This can be attributed to the fact that they were unaccustomed to using online platforms, and perhaps needed more time to acclimatize to the new way for learning (Haggag, 2019). In addition, the challenges some students faced while using the Google Classroom might have affected their perceptions, leading them to believe that conventional learning is easier.

Ease of Use

Two items were included in the questionnaire to enable the students to evaluate their preparedness to use Google Classroom. The means and standard deviations selected detailing their responses to the two statements are presented in Table 13.

Table 13. Means and Standard Deviations for Students' Perceptions of the Ease of Using Google Classroom (n= 87)

Statement	*M*	*SD*
8. Google Classroom allows me to easily access reference materials (e.g. online exercises, videos, power point files, etc.) provided by the teacher.	4.11	.68
9. Google Classroom is a convenient tool for submitting assignments and completing online activities.	3.94	.95
Overall Ease of Use	4.02	.64

The results illustrated that the students highly agreed that Google Classroom allowed them to easily access the reference materials (e.g. online exercises, videos, power point files, etc.) provided by the teacher (*M*= 4.11, *SD*= .68), and that it was a convenient tool for submitting assignments and completing online activities (*M*= 3.94, *SD*= .95). This indicated that Google Classroom as an online platform can be readily used for teaching and learning grammar. Sukmawati and Nensia (2019) reported that Google Classroom is an effective tool for teaching and learning, due to its unique functionality for social and pedagogical interaction.

Communication and Interaction

Three statements also enquired about whether the students communicated with their classmates and their teacher during the use of Google Classroom for grammar lessons. Table 14 presents the means and the standard deviations for their responses to these items.

Table 14. Means and Standard Deviations for Students' Perceptions of Communication and Interaction When Using Google Classroom (n= 87)

Statement	*M*	*SD*
10. Google Classroom has allowed me to easily participate with my teacher during grammar classes.	3.53	.84
12. Using Google Classroom for learning English grammar enhances student-teacher interaction.	3.22	1.00
11. Google Classroom has allowed me to easily participate with my classmates during grammar classes.	3.21	1.03
Overall Communication and Interaction	3.31	.77

The results revealed the overall mean and standard deviation for the three statements related to communication and interaction (*M*= 3.31, *SD*= .77) illustrated a moderate level of agreement among students' perceptions that Google Classroom enhanced their communication and interactions. This suggests that some students had found it easy to communicate with others, while others found it difficult, which could be attributed to several factors. First, students might be comparing the use of Google Classroom for grammar lessons with the face-to-face learning in conventional classroom settings where interaction and communication are more supported. Second, the students were not accustomed to communicating with others online, and so required a longer period to adapt to the use of all Google Classroom features including initiating discussions, replying to posts and sending private messages. Third, technical issues including network connection and the voice system provided on the device used can also impede the platform's communicative effectiveness Some of the studies reported that the platform was highly effective for the purpose of communication; i.e. Haggag (2019) and Sukmawati and Nensia (2019), as the use of Google Classroom was integrated with face-to-face teaching unlike the present study, in which the practice of teaching and learning mostly took place online. The findings also showed that the students perceived that Google Classroom allowed them to participate with their teacher effectively during grammar classes (*M*= 3.53, *SD*= .84), more easily than simply communicating with their classmates (*M*= 3.21, *SD*= 1.03).

Satisfaction

The final four items were designed to evaluate the students' satisfaction with enjoyment of using Google Classroom. Table 15 presents the means and standard deviations for the statements related to this dimension for both groups.

Table 15. Means and Standard Deviations for Students' Satisfaction to Using Google Classroom (n= 87)

Statement	*M*	*SD*
16. Overall, I have enjoyed learning grammar using Google Classroom.	3.76	.95
13. The online activities in Google Classroom have motivated me to learn more about grammar.	3.68	.84
14. I prefer completing grammar activities online instead of completing them in the textbook.	3.40	1.41
15. I recommend using Google Classroom for teaching and learning grammar in the future.	3.33	1.18
Overall Satisfaction	3.54	.89

The table illustrates that the highest mean (*M*= 3.76, *SD*= .95) was given to the statement asking students to state their level of enjoyment when learning grammar using Google Classroom. There was a high level of agreement that the learning experience was enjoyable. The students also expressed a high positive perception (*M*= 3.68, *SD*= .84) that the online activities in Google Classroom motivated them to learn more about grammar.

The analysis to the statement asking students if they preferred to complete grammar activities online instead of using a textbook showed moderate agreement, demonstrating divergence in students' preferences. To further investigate this statement, the researchers included an open-ended question referring back to the students, asking them to state what they preferred, providing justifications for their choices. The researchers analyzed the reasons provided thematically, and the Excel program was used to compute percentages for each reason given. The findings showed that 52.2% preferred to complete grammar exercises online using Google Classroom, whereas 47.8% preferred to complete

them using the textbook. Those students choosing online claimed that it is easier (21%) and more enjoyable (20.5%) to complete grammar exercises in this way. Some added that the platform allowed them to use different techniques, including games and interactive exercises. Nine percent reported that it is faster, and another nine percent that it enabled them to receive immediate feedback for their answers. Other reasons offered included being able to provide additional online activities (4.5%), trying a new experience (4.5%), that it was convenient to refer back to activities (2.3%), and the process of developing skills in online learning contexts (2.3%).

In contrast, those students who preferred to complete grammar activities in their textbooks reported that they found it easier (36.1%), and having a hard copy allowed them to easily refer back to find what they needed (22.2%), i.e. before examinations. One student added that it took time when looking for such activities from the platform. Being accustomed to the conventional approach, involving writing answers in the textbooks was another reason provided for this preference (16.6%). The others stated that the exercises in the textbooks were more comprehensive (13.8%) and faster to complete (11.1%) than converting them to digital materials. These findings revealed a discrepancy in students' preferences with regard to where they complete grammar exercises. This indicated that both Google Classroom and textbooks have benefits, with more advantages assigned to the former overall.

The mean (*M*= 3.33, *SD*= 1.18) calculated for the statement asking students if they recommended using Google Classroom for teaching and learning grammar in the future showed moderate agreement, suggesting that some students would recommend but others would not. This might suggest that recognition of its benefits for learning grammar prompted some students to recommend it, while the frequent challenges encountered when using the platform discouraged others from doing so. These challenges are presented in the following section of this chapter. Despite this, the computed mean (*M*= 3.54, *SD*= .89) for all the statements relating to the satisfaction dimension revealed that overall the students were highly satisfied about using Google Classroom for grammar classes.

4.5 Challenges Faced by Students when Using Google Classroom

The questionnaire also answered the fifth research question, 'What are the challenges students face when using Google Classroom?' The students were asked to evaluate the obstacles limiting their use of Google Classroom on a five-point Likert Scale. In addition, an open-ended question was included to identify the students' perceptions concerning any other challenges not covered in the survey. The data collected from the first part was analyzed using descriptive statistics, namely the mean and the standard deviation, while the students' answers to the open-ended question were analyzed qualitatively, and then Excel was used to determine the frequencies for each of the challenges provided. Table 16 presents the scale used for interpreting the means for each of the challenges.

Table 16. *A Scale for Interpreting the Degree of Challenge in Using Google Classroom*

Scale Value	Degree of Agreement
1-1.80	Not Challenging
1.81-2.61	Slightly Challenging
2.62-3.42	Moderately Challenging
3.43-4.23	Very Challenging
4.24-5	Extremely Challenging

Table 17 below displays the statements together with their means and standard deviations in descending order.

Table 17. Means and Standard Deviations for the Challenges of Using Google Classroom (n= 87)

Statement	*M*	*SD*
6. I don't have sufficient time to complete activities outside school time.	3.43	1.15
5. Completing online activities in Google Classroom is time consuming.	2.97	1.20
4. I can't access some applications used for grammar activities.	2.64	1.11
1. I need technical assistance when using Google Classroom for grammar classes.	2.39	1.01
2. I have suffered from a poor internet connection.	2.30	1.17
3. I lack access to computers at home.	2.10	1.05
Total Challenges	2.63	.67

As presented in Table 17, the students considered the use of Google Classroom to be moderately challenging (*M*= 2.63, *SD*= .67). The most significant challenge reported was insufficient time to complete the activities outside school hours (*M*= 3.43, *SD*= 1.15), with the second challenge being the time consuming nature of the online activities (*M*= 2.97, *SD*= 1.20). These results were expected as online learning has been highly intensive since the academic year 2019/2020 due to the Covid-19 pandemic. During this period, students have been expected to study and complete various online tasks for the majority of the subjects they are registered in. However, it is anticipated that these challenges will reduce when the education system returns to its previous normal, in which students physically attend their classes. The mean for the third statement (*M*= 2.64, *SD*= 1.11) suggests that some students encounter difficulties accessing certain applications. This is related to the use of different devices, including mobile phones and tablets that do not support use of certain programs and applications (Barman & Karthikeyan, 2019; Islam, 2019). Poor internet connections and technical issues were reported to prevent students from accessing certain applications and files. The least challenging issue was the lack of access to computers at home (*M*= 2.10, *SD*= 1.05). The increasing importance of online learning increased the demand and availability of computers and other devices to keep pace with changes in the field of education. The means of the fourth and fifth statements are (*M*= 2.39, *SD*= 1.01) and (*M*= 2.30, *SD*= 1.17) respectively indicated that students considered technical issues and poor communication networks to be slightly challenging.

In addition to the data gathered from the previous statements, the open-ended questions provided an opportunity for the students to identify

other challenges that they encountered. 64.4% of all responses suggested there were no challenges other than those mentioned in the previous statements listed in Table 17. Furthermore, some added that the platform was easy to be used and they had become accustomed to it. The challenge of not having sufficient time to complete online activities was mentioned again, and confirmed by 11.5% of students. Some suggested increasing the time allotted to each lesson, and to complete the different activities within each class. 10.4% of the respondents pointed out that they had faced some technical problems, including 3.4% not being able to open files or links and 2.3% facing difficulties in submitting work assigned to them. This may be due to the devices used not fully supporting some programs, or to the students lacking technical skills. Another challenge restated by 9.2% of the research sample was the problem of poor network provision, affecting access. Several students, 4.6%, pointed out that they had difficulty understanding some of the activities, and further analysis revealed that those students were members of the unstructured group, who received limited instruction and guidance from the teacher.

5. Conclusion

The results of the present study have highlighted the positive impact of Google Classroom on students' grammar performance, lending support to the existing body of research asserting the benefits of online platforms. The results extend our knowledge of the significant role technology can play in helping students to learn grammar and stress the value of considering how to structure the use of online platforms. There are many online platforms that may be used to teach grammar on line, and based on the results of this study, Google Classroom can also be seriously considered as an effective platform for teaching grammar in the Omani context. Pedagogically, the students' high positive opinions when using Google Classroom reveal its active role in helping and motivating students to learn grammar. Regarding the challenges that students encountered when using Google Classroom, it was observed that students perceive its use to be moderately challenging, which encourages the implementation of this platform.

6. Recommendations

The findings from this study support the recommendations of similar previous research that it is beneficial to shift away from being completely focused on just conventional teaching but to also consider integrating technology to maximize students' learning. This study therefore recommends that teachers continue to make use of Google Classroom for grammar classes, to provide additional opportunities for their students to practice away from the limitations of the classroom after the Covid-19 pandemic. They can combine use of this online platform with conventional classroom teaching to consolidate the advantages of both learning environments. Unquestionably, it is vital that the challenges encountered by users of Google Classroom be addressed to ensure its effectiveness.

Furthermore, curriculum designers are encouraged to add variety to materials, when offering students opportunities to practice online activities to enhance their grammar learning. Pre-service and in-service training programs should include continuous updates to the recent features presented on online platforms as well as inclusion of best pedagogical practice to maximize benefits. This includes establishing how to structure a program to ensure students with different language skill levels and learning styles can make the best use of it. Sufficient structure should be provided to allow students of all abilities to learn effectively from the uploaded learning materials. Alternatively, based on students' levels and due to the Google Classroom feature that allows individual access to class materials, teachers can give high level students more choices to work independently on the uploaded learning materials, while providing additional structure and guidance to low level students.

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