

**The effectiveness of curriculum modification and delivery
using online platforms in the UAE**

الإلكترونية المنصات باستخدام وتقديمها المناهج تعديل فعالية

by

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Abstract

In the past two years, since the Covid-19 pandemic, virtual classes have been one of the primarily used methods in curriculum delivery. Consequently, educators had to make the necessary changes to the curriculum to suit the new dominant method of delivery. With this rise of online learning, more investigated questions arise about the pedagogical efficiency and practicality of educational online platforms and applications. Therefore, this paper aims to focus on the challenges educators and learners face in curriculum modification in virtual classes and its effectiveness in improving the standard of education and enhancing learners' interaction. To collect contextualized and relevant data the researcher conducted a questionnaire and interviews with teachers and students who use online platforms such as Teams, Zoom, Nearpod, Kahoot, etc in their teaching and learning to investigate the area of study. The results serve to inform stakeholders and educators about the challenges faced when modifying curriculum to suit virtual classes as the main method of delivery. Hence update, modify and reconstruct these platforms about best practices and online teaching and learning theories. The challenges will be described, examples will be given, and potential solutions will be suggested. Although numerous researches have commonly investigated the benefits and challenges of virtual learning, fewer researchers have addressed the connection between virtual classes and curriculum modification and delivery. Nevertheless, the next decade is likely to witness a considerable rise in research on how to modify the curriculum for virtual classes. The author starts this paper with an overview, then a discussion of literary theories that can be correlated to the present curriculum modification in virtual classes. The next section highlights the implication of modifying the curriculum for virtual classes and how it affects the teaching and learning experience. It will also outline some examples of curriculum modification for virtual classes. Finally, it will present the data collection method, participants, research limitations, and findings.

Keywords: Virtual Classes, distance learning, e-learning platforms, curriculum modification, curricula delivery

ملخص

في العامين الماضيين ، منذ جائحة كوفيد-19 ، أصبحت الفصول الافتراضية إحدى الطرق المستخدمة بشكل أساسي في تقديم المناهج الدراسية. وبالتالي ، كان على اختصاصيي التربية إجراء التغييرات اللازمة على المناهج الدراسية ليناسب طرق التسليم السائدة الجديدة. مع هذا الارتفاع في التعلم عبر الإنترنت ، تظهر المزيد من الأسئلة التي يجب التحقيق فيها حول الكفاءة التربوية والتطبيق العملي للمنصات والتطبيقات التعليمية عبر الإنترنت. لذلك ، تهدف هذه الدراسة إلى التركيز على التحديات التي يواجهها المعلمون والمتعلمون في تعديل المناهج الدراسية في الفصول الافتراضية وفعاليتها في تحسين مستوى التعليم وتعزيز تفاعل المتعلمين. لجمع البيانات السياقية وذات الصلة ، أجرى الباحث استبياناً ومقابلات مع المعلمين والطلاب الذين يستخدمون منصات عبر الإنترنت مثل Teams و Zoom و Nearpod و Kahoot وما إلى ذلك في تعليمهم وتعلمهم لاستكشاف مجال الدراسة. تعمل النتائج على إعلام أصحاب المصلحة والمعلمين بالتحديات التي تواجههم عند تعديل المناهج الدراسية لتناسب الفصول الافتراضية باعتبارها الطريقة الرئيسية للتسليم. ومن ثم تحديث وتعديل وإعادة بناء هذه المنصات بالرجوع إلى أفضل الممارسات ونظريات التعليم والتعلم عبر الإنترنت. سيتم وصف التحديات وإعطاء أمثلة واقتراح الحلول المحتملة. على الرغم من أن العديد من الأبحاث قد بحثت بشكل عام في فوائد وتحديات التعلم الافتراضي ، فقد تناول عدد أقل من الباحثين العلاقة بين الفصول الافتراضية وتعديل المناهج الدراسية وتقديمها. ومع ذلك ، من المرجح أن يشهد العقد المقبل ارتفاعاً كبيراً في الأبحاث حول كيفية تعديل المناهج الدراسية للفصول الافتراضية. يبدأ مؤلف هذه الورقة بنظرة عامة ، ثم مناقشة النظريات الأدبية التي يمكن ربطها بتعديل المناهج الحالي في الفصول الافتراضية. ثم يسلط في القسم التالي الضوء على الآثار المترتبة على تعديل المناهج للفصول الافتراضية وكيف يؤثر ذلك على تجربة التدريس والتعلم. كما سيحدد بعض الأمثلة على تعديل المناهج للفصول الافتراضية. أخيراً ، سيقدم طريقة جمع البيانات ، والمشاركين ، وقيود البحث ، والنتائج.

الكلمات المفتاحية: الفصول الافتراضية ، التعلم عن بعد ، منصات التعلم الإلكتروني ، تعديل المناهج ، تقديم المناهج

Dedication

I DEDICATE MY LIFE, WORK, STUDY, ACHIEVEMENT, AND SUCCESS TO MY PARENTS, MY BELOVED FATHER 'ABDELRAHMAN ELHABAK' MAY HIS SOUL REST IN PEACE, AND THE MOST CARING AND AMAZING MOTHER 'HWAIDA MORSE.

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Abbreviations

MoE: Ministry of Education

RQ: Research Questions

BYOD: Bring Your Own Device

SIQ: Students Interview Questions

TIQ: Teacher Interview Questions

SEND: Children with Special Needs and Disabilities

MoE: Ministry of Education

BUiD: British University in Dubai

Chapter 1: Introduction

According to UNESCO statistics, schools around the world were forced to shut their doors to contain the Covid-19 spread and maintain the safety of their staff and students affecting 91% of the world's students. Resulting in a sudden shift to online learning from home where parents are the monitors (Crypto, 2022). The UAE was well-prepared for this radical shift and the government equipped parents, learners, and teachers with the necessary technologies, internet connection, platforms, application, and training to implement distance education. Some of the initiatives taken by the MoE are delivering a one-week free distance training for more than 34,200 private and government schools and cooperating with telecommunication companies such as Du and Etisalat to provide free internet access for families who do not have internet connection in the entire country to maintain the communication between learners and their teachers (UAE Government, 2021).

Nevertheless, this sudden shift had its obstacle due to connectivity issues, digital gap, resources availability, resistance to adapt to change, maintaining learners' engagement and participation, and lack of face-to-face interaction with peers and teachers. Forcing educators to reconsider how education is managed, modified, and delivered (Sebugwaawo, 2022).

The internet created a global classroom where teachers and students have access to unlimited resources (Cristol and Gimbert, 2013). Despite that online learning was commonly considered as an educational option or subelement for many years till the Coronavirus pandemic shifted this old perception and made e-learning one of the limited methods to obtain and provide education. Even in 2021 when students went back to school, blended and hybrid learning became a major part of schools' method of delivery (Gulfnews, 2021). Although this sudden change was perhaps forced on educators and learners, it led to a change in their perception of online learning and teaching.

To adapt to this sudden shift necessary modifications were needed in the curriculum and methods of delivery (Pokhrel, & Chhetri, 2021). However, due to educators', parents', and learners' lack of experience with e-learning many obstacles in the learning process were inevitable affecting the productiveness of these modifications. Some of these challenges were due to accessibility, connectivity, lack of teacher training, lack of concentration, limited students interactions, and delayed teachers' feedback. Santos and Bochecho (2017) claim that learning online could be disruptive as learners tend to get distracted by online content.

To address some of these challenges and to stimulate learners' involvement, educators started to rely on several interactive e-learning platforms and applications such as Teams, Zoom, Nearpod, etc that resemble traditional classroom interactions to deliver lessons. These platforms provide different types of engaging and dynamic activities such as interactive boards, educational games, and visual illustrations. Hakami (2017) advocates that teachers need to adapt various interactive methods using online tools to involve their learners.

Although these platforms helped in enhancing interaction and learners' engagement, investigating the effectiveness and impact of these platforms on education is still limited. Additionally, exploring how learners and educators perceive curriculum modification using online platforms, and how they view their effects on their learning by comparing it to their traditional learning environment before the recent technological integration is interesting. Hence, the researcher aims to focus on the effectiveness of curriculum modification and delivery in virtual classes and how it impacts the standard of education.

To collect contextualized and relevant data the researcher will conduct a survey and questionnaire to investigate the area of study. The results serve to inform stakeholders and educators about the challenges faced when modifying and delivering curricula to suit virtual classes.

1.1 Background

With the sudden shift in education and with technological integration in education, necessary changes and upgrades in the education tools and methods of delivery were needed. Consequently, changes in curriculum, instructions, resources, and methods of delivery. Since 2020 teachers started to rely more on online platforms and applications to share resources and deliver lessons (Pokhrel & Chhetri, 2021). Some of these platforms are used for live sessions with students such as Teams and Zoom and other platforms were used to enhance interaction and assessment such as Kahoot, Quizziz, Nearpod, and Padlet. For the use of these platforms, educators digitalized content and curriculum to be accessible by students. This transfer of material was either done by digital education professionals such as Alef that digitalized the MoE curriculum and build digital lessons for all core subjects for K-12 (Alef Education, 2022), or by individual teachers who use some learning platform to computerize the curriculum.

It is important to investigate whether online education has fulfilled its promise of advancing the quality of education by creating a virtual learning environment where teachers and students can

have a sense of community to interact and collaborate. No one can deny that these platforms have advanced the quality of teaching and made it more accessible, nevertheless, there is a growing list of concerns about technicality, social interactions, assessments, and teacher-student interactions in e-learning. Hence, it is essential to identify its shortcomings as tools of delivery and content sharing for better application. Several studies shed light on the effectiveness of e-learning from learners' perspectives and highlighted a few downsides like lack of comprehension of the course aims, limited chances of interaction with peers, and delays in teacher feedback (Song, Singleton, Hill and Koh, 2004).

1.2 Problem Statement

Nowadays, technology is one of the main pillars of education, yet both learners and educators are still struggling to utilize its benefits whether online or in a traditional setting. Additionally, the use of these tools needs the adoption of sound pedagogy and adaptation of content for effective delivery (Santos & Bocheco, 2017). Therefore, scholars advocate that technological tools will be effective when they are perceived as instruments used to enhance the teaching and learning process, not as presentational tools. As a result, changing teachers' role from lectures and presenters to an encourager and facilitators (Hakami, 2017; Şahin and Kurban, 2019).

Since school systems are varied in their learners, material, and technologies, there is no single educational tool that will obtain similar outcomes everywhere (Ganimian, 2021). Therefore, understanding the perspectives of educational tools to enhance learners' academic performance requires surveying the best available tools, and closely monitoring the result of technological integration in different settings. Hence, this study investigated the changes made in curriculum content and delivery and the impact of these changes on education from both learners' and teachers' perspectives.

1.3 Research Objectives

This study is designed to investigate teachers' and students' perceptions about the effectiveness of curriculum modifications and delivery. This research questions whether these modifications were relevant, necessary, and based on sound methodologies. Moreover, this paper investigates the challenges encountered during this process of modification and delivery and the effectiveness of integrating platforms like Teams and Zoom, with other interactive platforms such as Kahoot, Nearpod, Quizziz, etc. Consequently, this study could contribute to the enhancement of the online learning process, for it produces information on the usefulness of certain changes in curriculum and methods of delivery for online learning.

1.4 Research Questions

The study aims to investigate the effectiveness of curriculum modification and delivery using online platforms. The study raises five questions worth exploring:

RQ1. What are the pedagogical considerations in building effective online platforms?

RQ2. To what extent is the curriculum modification adequate for curriculum delivery using online platforms?

RQ3. How effective is content delivery in online classes compared with face-to-face classes?

RQ4. From students' and teachers' perspectives, what are the challenges faced in curriculum modification and delivery using online platforms?

RQ5. From students' and teachers' perspectives, what are the necessary adjustments for making the online learning experience more effective?

This will be achieved by collecting the opinions of both students and teachers who use online platforms hence directly involved in the phenomenon under study. A questionnaire and interview are the main methods for gathering information to complete the study. Students and teachers who use online platforms in different contexts will be the participants of the study. To gather in-depth information, a group of participants will be interviewed to give an in-depth analysis of the findings and confirm the quantitative data.

1.4 Research Hypothesis

A research hypothesis is a statement of predicted outcomes that will be assessed by research and data analysis. This study tests the following hypothesis:

- Hypothesis 1: It is hypothesized that teachers and educators struggle to modify the curriculum for online delivery and lack a clear understanding of online learning methodologies, hence they rely mainly on ready-made content.
- Hypothesis 2: Learners do not get enough interaction chances and feedback from their teachers.
- Hypothesis 3: Curriculum delivery online is more challenging than curriculum delivery in traditional classes.

- Hypothesis 4: It is hypothesized that online platforms increase engagement, and practice, but provide limited learners' interactions and authentic application.

1.5 Theoretical Implications

This paper has several implications due to the novelty of the area of study with limited literature and tested applications for in-depth reference. The researcher has limited access to students from different schools therefore other teachers from the researcher network will be asked to share the questionnaire with their students and collect the necessary consent.

1.6 Organization

In the following pages, this research is organized into five chapters. The first chapter covers the background and overview of the study. Chapter two serves as literature and theoretical base for the research. It also refers to the past studies relevant to the area of investigation. The third chapter illustrates the methodology of online learning, curriculum modification, and delivery. The fourth chapter presents the findings and outcomes of the data analysis. The fifth and final chapter concludes the research and presents future recommendations.

Chapter 2: Literature Review

2.1 Introduction

The educational system had a drastic change in the last two years with heavy technological integration and reliance on divergent platforms and tools (Weiner et al., 2022). These online platforms have allowed students to access education remotely and equipped teachers with the necessary tools and aids to deliver classes face to face, virtually, or in a hybrid model. The UAE is one of the pioneer countries in providing access to several online platforms for all MoE curriculum schools across all emirates such as Alef, Aldewan, Almanhal, etc (Edarabia, 2020). To evaluate the effectiveness of these online learning and teaching tools, it is essential to evaluate the modifications in the curriculum offered, the context it is presented in and the methods of delivery used.

This chapter presents the essential elements that need to be regarded in building a successful online learning infrastructure, including content planning, modification, delivery, and assessment. It also refers to the literature and theories that guide content modification and effective delivery methods.

Structuring a foundation for e-learning systems has several interrelated elements, including content, learning technologies, context, learners' needs, assessment, interaction, feedback, and more, which make it challenging to produce a unified checklist or guidelines for all online contexts. The focus in this chapter is on e-platforms and the necessary adaptation for online delivery, and some of the associated complications that need to be considered.

2.2 Online learning

Online learning has several terms such as web-based learning, distance learning, e-learning, etc, these terminologies originally meant that students and teachers interact from a distance using technology (Carliner, 1999). Twigg (2003) defines it as an economical approach for content delivery that improves the quality of education and removes situational barriers. Online learning is also defined as using technologies to transfer informational and educational content to meet students' needs (Koohang, and Harman, 2005). Bermejo (2005) defines online learning as an educational context for adults who use technologies to connect and share information with their teachers. Boneu (2007) claims that defining online learning is confusing due to the various definitions and terminology that are often associated with it such as computer-based learning, distance learning, and technology-based learning. With the fast-growing use and application of

online learning in education, online learning is considered a form of teaching and learning that required internet and technological integration to promote the quality of education (Sangrà, Vlachopoulos, Cabrera, and Bravo, 2011).

All learning theories were developed before the widespread of networked learning, and Siemens (2004) urges for the development of these theories or creating new theories to guide online material design. The most relevant theory to online learning is connectivism which views learning as a dynamic process of evaluating information to replace old concepts with new ones in a networked environment (Siemens, 2004). All the three schools...

To use these platforms learners need to have their own devices to access the video conferences or the platform. According to a study conducted by MsClaean and Crowe (2017) students feel excited and active in class when using their own devices. Several other studies have also proven that bring your own device(BYOD) model improves learners' academic performance, and motivation Safar, 2018; Nikou and Economides, 2018; Hakami, 2020).

2.3 Building online platforms

Any successful teaching and learning systems are designed based on two essentials the students' needs, and the learning aims of the educational course. Therefore, to understand learners' needs, their technological knowledge, learning history, necessities, available resources, and technologies should be investigated (Little, 2009). Consequently, the best system should address these considerations most effectively in meeting students' individual needs. For example, considering which students have the technological tools needed to access online learning and those who do not have these tools due to financial limitations.

Additionally, setting comprehensible learning aims is essential in making decisions related to content choice, skills, curriculum sequencing, and assessment tools. For example, if one of the learning aims is to enhance problem-solving skills then the content should be designed to trigger learners' ability to reflect on different problems and provide the best solution. Chickering and Ehrmann (1996) claim that designing a successful online learning system should have direct learning objectives that are linked with relevant teaching approaches and principles.

The goal of any online platform is to promote access to learning, and an ideal online platform must be constructed based on two main foundations; learners' needs, and course learning aims (Anderson, 2008). Platforms designers need to consider learners' existing knowledge, technological literacy, expectations, ability to access resources, network, and abilities.

Additionally, identifying the intended course aims is essential to identify the necessary skills, instructions, methodologies, assessment tools, and success criteria (Red River College, 2004). For example, if the intended learning outcome is to enhance collaborative learning between students in carrying out research projects, then this aim should guide the design, content, and resources on the online platform used.

Nevertheless, the process of building an effective online platform is not merely based on these two foundations only. It initially starts by developing courseware built by an experienced team of content experts, curriculum, instructions and visual designers, technicians, and programmers. Then carefully choose a pre-existing learning management system (LMS) with efficient staff and technical support, or build a new one (Course Management Systems, 2007). A successful practice in evaluating a potential LMS was done by Athabasca University which developed an evaluative checklist that included mandate, system admin, cost, instruction design, and teaching tools. The third stage is developing or adapting a Content Management System (CMS) which means a system that provides secured database storage space and accessible material for both teachers and learners to interact. Moreover, the learner services provided by these platforms whether it is technical or special support for special needs students are essential to be considered at this stage. Both LMS and CMS then interact with the Student Information System (SIS) to make sure that students' data is available and accessible by school management and teachers. This takes the process to another element which is the user's portal. Some portals require secured access with username and password, and it has customized features to help learners choose their preferred setting. The last factor to be considered is quality assessment for future improvement and necessary modification to guarantee the system's return on investment and the quality of teaching and learning it facilitates.

As interaction in traditional classes mismatch interactions in online classes, it is essential to consider the pedagogical aspects of e-learning interaction when building web-based content (Thurmond & Wambach, 2004). Interaction is viewed from different perspectives; for behaviorists, it is limited to teacher-student interaction where the teacher is in control of learners' stimulus; as in cognitivism, learners are active observers who get encouraged by teachers to make hypotheses and form conclusions built on their background knowledge; the last and most applied perspectives is constructivists theory who connected knowledge gain with different forms of social interactions teacher-student, student-student, and learner-content, and learner-interface (Chen, 2002; Swan, 2001).

To enhance interaction, online platforms should encourage four actions: 1) involvement, 2) answer, 3) feedback, and 4) teachers' comments (Thurmond & Wambach, 2004). Which emphasizes the importance of learner-learner interaction as well as teacher-leader interaction. It was highlighted in various studies that learners cherish interaction time with their teachers as it enhances their understanding of course content, and they preferred courses that were offered by teachers they know well (Thurmond & colleagues, 2002; Jiang & Ting, 1999)

In e-learning platforms, the integration of features that help teachers provide adequate, individual oral and written feedback is crucial for various reasons. Firstly, distance learning lacks physical interaction due to the distance between learners and their teachers. Secondly, the differences in learners' pace and cognitive abilities are more vivid in e-learning where students finish tasks and projects before the others, and to move forward with their self-learning they wait for their teacher's feedback. Thirdly, the use of technology might require support from teachers in dealing with technological issues such as the inability to download material, access classes, or submit finished work (Collis et al., 2001).

2.4 Online Learning vs. Classroom Learning

Several studies have investigated the effectiveness of technological integration, however, no evidence proves that children gain more knowledge from computerized content than they do from traditional books. In a study with 271 elementary schools, both students who used text books performed at the same level as those who received laptops (Bando, Gallego, Gertler, and Romero, 2016). According to some studies, providing learners with technologies to make them more autonomous, independent and enhance their computer skills has failed as learners use their devices for recreational purposes (Malamud & Pop-Eleches, 2011; Cristia, Ibararán, Cueto, Santiago, and Severín, 2017).

Unlike traditional classes where students passively copy input from the board with limited time to practice, online learning gives learners more chances to revisit material and implement what they have learned. A study with Chinese elementary students proved that reviewing material using videos and gamified practice have improved their academic progress in math by 0.12 SDs (Lai, Zhang, Hu, Qu, Shi, Qiao, Boswell, Rozelle, 2013). Despite that, other researchers debate that this improvement is insignificant in comparison to improvement that resulted from content modification according to learners' level (Muralidharan, Singh, and Ganimian, 2019)

2.4.1 Content preparation

In traditional classes, teachers often share content gradually as learners progress during a lesson or the term and sometimes make some modifications, unlike in online classes where teachers need to prepare content before the start of the term and share it online platform educational institutes. For example, the MoE shares its curriculum before the start of the academic year with Alef, an educational provider that creates digital learning content for MoE schools, so it is ready for delivery across all private schools in the UAE (Alef Education, 2022).

2.4.2 Interactions and community learning

In traditional settings, teacher-learner interaction and teacher-learner interactions take place throughout the lesson through discussion, projects, and questioning. Hence learners get a sense of community and get support from their peers and their teachers Gokulan, D. (2018). While in an online setting teachers use online platforms to create a class-like setting where students use their mics and cameras to interact verbally or post their answers on interactive boards such as Padlet, or in the meeting chat such as Teams and Zoom. In this online setting, teachers use more techniques to provide distance-education students with opportunities to cooperate with their peers in completing tasks and projects in breakout rooms.

Additionally, no matter how advanced online platforms are in providing autocorrections and instant feedback on learners' progress, nothing could replace constructive written or verbal feedback from teachers, as they can provide feedback based on observation, learners' critical thinking skills, collaboration, problem-solving and more. Therefore, regular support and feedback throughout the learning process need to be integrated. Several studies prove that learners feel unsatisfied with the amount of feedback given by teachers in online classes in comparison to face-to-face classes (Dixon, 2012; Jaques & Salmon, 2007; Soon, Sook, Jung &IM, 2000; Vrasidas and McIsaac, 1999).

2.4.3 21st Century Skills

Online learning provides heaps of visual and auditory content that enhances diverse communication skills and new interaction opportunities and chances to revisit the material regularly at any time and anywhere. Whereas teachers mostly rely on textbooks and smartboards to display content with limited integration with technology. Although in both online and in-person classrooms teachers used projects and tasks that promote 21st-century, e-learning. A study was conducted with EFL students showed that the practice of 21st-century skills was at a high

level using e-learning activities, helping learners develop their soft skills such as IT and numeracy skills and hard skills such as course knowledge (Hadiyanto, 2019).

2.4.4 Student Engagement

In E-learning classes with all students having their own devices and access to the internet, teachers get better chances to carry out gamified activities that improve student engagement and motivation by prompting learners to compete against their peers in educational activities. Despite that, some studies have proved that students' engagement is less in online classes in comparison to traditional face-to-face lessons (Robinson and Hullinger, 2008). Similarly, Araya, Arias Ortiz, Botton, and Cristia (2019) advocate that whereas gamification improves students' assessment results in subjects like math, it does not impact students reading skills and it reduces student-student collaboration. Both studies prove Dixon's claims (2012) that students' engagement is affected by student-student and teacher-student interactions.

2.5 Curriculum Modification

The curriculum is not just a course or a syllabus, it means the entire process that learners undergo to build knowledge, achieve learning aims, and enhance their skills under the school's supervision (Bishop, 1958; Taneja, 2012). Curriculum modification is a process that is built on learner's needs analysis, assessments, or implications in what was already implemented but needs reforming or modifying to improve learners' educational experience (Marshal, 2009). Therefore, the curriculum is built and regularly changes based on individual context to fit the needs of individual learners. Meaning that curriculum changes are not just limited to learners with special needs, but it is also inclusive of all students who face implications in accessing education (Gabriel, and Kapalu, 2020).

Making curriculum available online for learners mitigates the distance limitations and reduces the educational cost for both learners and institutes. When building educational content for an online setting, it is essential to consider online learning principles and best practices in making the necessary modifications (Emery, 2012; Santos, and Bocheco, 2017). These modifications include the course content, learning outcomes, delivery mode, resources, material, activities, and assessment.

Curriculum modification does not have one final accepted definition however some definitions highlight some of its aspects. Curriculum modification includes alteration to some educational elements such as instructions, learning outcomes, content, and methods of delivery by modifying

resources and educational measures (Comfort, 1990; King-Sears, 2001; Reisberg, 1990). This process is often interwoven with other changes in the curriculum such as adaptation, enhancement, revision, differentiation, and modification. King-Searss (2001) puts curriculum modifications into four types: accommodation, adaptation, parallel curriculum outcomes, and overlapping curricula. These four kinds are further defined and illustrated in the following sections.

The holistic approach to designing one general curriculum that fits all regardless of learners' social behavioral and academic diversity is impossible and impractical. Therefore, modifying and improving the curriculum to make learning more accessible and effective for students and educators is a common process in several academic contexts. In this study, curriculum modification means adapting educational formal content, method instructions, activities, medium of study and learning aims to create an individualized learning environment. (Comfort, 1990 and Reisberg, 1999).

2.5.1 Accommodation

Accommodation means modifying or changing instructional methods by integrating assistive technologies such as visuals, auditory and technological aids to scaffold the learning process and support learners with different needs. This process does not require simplifying or changing the general curriculum content but might include modifying the pacing or the rate at which the learning happens. A common example of modification is using recorded texts in reading classes to support auditory learners or learners who have difficulty reading in acquiring the necessary input from a text, where are allowing learners to provide oral answers instead of written answers that demonstrate their comprehension with consideration to their limitations. This way students who received auditory support can participate in a post-reading comprehension activity to demonstrate understanding of what they have comprehended from the text (King-Sears, 2001). Additionally, technological integration is another example of accommodation that is used to empower learners with visual, or hearing impairment, or who need visual and auditory illustration (Gabriel, and Kapalu, 2020).

2.5.2 Adaptation

Although like accommodation, adaptation does not affect the curriculum content, it might slightly affect its level of difficulty. Adaptation means changing the method of delivery such as activities, assessment, and material for specific learners. This adaptation could be achieved by

demanding less from weaker students and higher from stronger learners. For instance, a teacher could ask stronger students to produce a paragraph using complex sentences while asking weaker students to produce the same using simple and compound sentences. So unlike accommodation, it is not a matter of changing the amount as much as it is a change in the conceptual difficulty (King-Sears, 2001).

2.5.3 Parallel Curriculum outcomes

The concept of parallel curriculum outcome is similar to adaptation in changing the level of difficulty while maintaining the content, but the changes happen to a greater extent. Using parallel curriculum outcomes creates an inclusive learning environment where learners with disabilities or specific needs work on easier tasks from the rest of the class to gain broader content knowledge. This process is similar to what Switlick (1997) refers to as ‘partial participation’ (p236) which means prioritizing all learners’ participation in class despite gaining an equal level of conceptual gain. As an illustration Switlick (1997) recommends assigning differentiated tasks in an ELA class for different groups of students based on their needs - which means that one group could read a story and highlight the targeted language while others just read.

2.5.4 Overlapping curricula

Overlapping curricula is a modification in the curriculum that is caused by the overlap of individual learners’ learning aims with the main curriculum learning objectives. This does not require significant changes in the main curriculum, but the inclusion of certain personalized learning targets and demands. In other words, whilst learners with various learning aims are studying to achieve their personalized targets, they are still engaged in the very same content as the rest of the class. For example, if one of the students learning targets is to develop his interpersonal skills, he could be assigned communicative tasks such as distributing material for a science or math class to greet his classmates and ask them about the material they need. Therefore, while the student is developing his individual learning aims, concurrently the whole class is prepared with all the material needed to start a task that is targeted to meet their main learning aims (Switlick, 2001)

2.5.5 Assessment modification

Assessments are the main tools used to inform educators about learners’ academic progress, hence modifying assessment for e-learning is as essential as modifying instructions, material,

and content. Assessments modification include but are not limited to modifying the pacing; the form of communication; level of challenge; support from the teacher; simplified language; visuals, and auditory aids; display and style (Okumbe & Tshenko, 2011)

2.6 Curriculum Delivery

Growingly, educators are relying on online learning as the primary delivery method in teaching for its numerous benefits for both students and teachers. For students, the flexibility of time, location, and distance make learning more accessible. Additionally, learners can access limitless learning material and connect with their teachers for guidance and support. Similarly, teachers can share material, assign tasks, and give feedback to their learners (Simmons, 2002).

In the UAE context, students in public schools follow the MoE curriculum and use platforms provided by partner companies such as Alef, Almanhal, etc. to share resources and Teams to facilitate online classes. As for private sectors, some schools invest in buying some applications and platforms that aid teachers in increasing learners' involvement such as Schoology, Google meet, and upgraded versions on Nearpod and Quizziz. This was the case till recently when both the private and public sectors started delivering lesson entities face-to-face or in a blended model where learners go to school for four days and study from home for one day (Sebugwaawo, 2022).

The debate about online delivery started with Clark (1983) and later supported by Bonk and Reynolds (1997) claiming that it is not the use of technologies as a medium of delivery that improves learners' academic progress, but the course design and material. Cooper (1993) Wilson, (1997), and Rossett (2002), on the other hand, argue that online material improves the quality of learning if it is interactive, authentic, contextualized, learner-centered, and stimulates real-life application.

According to Anderson (2008), constructive online learning is a process of four stages starting with learners' preparation by linking the learning outcomes with real-life application and sharing expectations and rationale to build interest and motivation. The second and third stages include activities that prompt meaningful application and practice in various forms of learner interaction with content, context, other learners, and their teacher. Leading to the last stage in which the learner transfers and personalizes the information for real-life application.

2.7 Implications for online learning

Modifying curriculum content and method of delivery based on learners' needs and prior knowledge seems to solve several traditional situational, attitudinal, and institutional challenges to learning. Nevertheless, individualizing and modifying curriculum is a complex process and causes several implications in curriculum design and delivery. These implications and opportunities need a generic theory of online learning that guides the choice of technological tools with the most relevant content, assessment, interactions, and instructional strategies. Some of these challenges will be covered in the following section.

2.7.1 Autonomy

Online learning was traditionally favored for adults and mature learners (Kanuka & Anderson, 1998). Nowadays online learning is used with both adults and young learners and both are expected to have a level of maturity and independence which is unattainable with a 6-year-old student. Therefore, online material should encourage autonomy, independence, and critical thinking to help learners evaluate information and select the most reliable information that meets their study needs.

2.7.2 Adaptation from traditional classes

The flexibility of web-based content allows educators to easily edit and modify online course content. Most often this happens without informed pedagogy and with no restrictions and monitoring from school administration compromising the quality of education. Although some aspects of traditional classes could be applied and used in e-learning, it is not a straightforward copy-paste approach as done by teachers who are inexperienced with e-learning pedagogy and practice. Rather, criteria of adaptation need to be consulted to discriminate between these two dissimilar teaching contexts. Having this mind as well as dealing with novel technological integrations, and maintaining individualized content that is tailored to meet the needs of individual students puts teachers under loads of pressure and workload (Gillett-Swan, 2017; Jaques & Salmon, 2007). This can be tackled by sharing good practices between educators focusing on the effective application of e-learning without inessential replication (Kirkwood & Price, 2014)

2.7.3 Interaction

Successful interaction is connected with several elements of best practices such as engagements, collaboration, effective feedback, communication, and sufficient task-time

(Thurmond & Wambach, 2004). This connection prioritizes the importance of considering interaction from the early stages of designing e-learning content. Swan (2001) claims that the unclarity in structural design of online courses negatively impacts student-content interaction. In a study with 57 nurses, Attack and Rankin (2002) found out that limited time to participate in live classes limits learners' chances to interact. Another barrier affecting interaction in e-learning is the lack of physical interaction (Beard & Harper, 2002 as cited in Thurmond & Wambach, 2004).

It is debated that, for a successful online learning environment, learners' interaction and collaboration should be more encouraged (Daniela, Visvizi, Gutiérrez-Braojos, & Lytras, 2018). Nevertheless, lack of interaction with the teacher has been repeatedly reported as one of the learners' challenges in distance learning (Barnes, 2000; Beard & Harper, 2002).

2.7.4 Assessment

Although assessment is often viewed as tests, exams, and quizzes, its nature is way broader and more complex including defining needs, selecting content, designing evaluations, collecting information, analyzing and interpreting data, and modifying curriculum and instructions accordingly.

Despite the significance of collaboration in online classes, designing and conducting collaborative assessments is a complex process that needs both individual and group effort. To sustain adequate teaching and learning, online platforms need to integrate effective assessment and feedback features that learners find beneficial (Blair and Valdez Noel, 2014). A study, that was designed to examine 72 learners' perceptions of the effectiveness of several assessment tools in online learning, is also consistent with the assertion that students find peer-assessment, projects, essay-type, and discussion forms assignments to be the most effective assessment tools (Ogange, Agak, Okelo, & Kiprotich, 2018).

Although online platforms provide teachers with auto-corrected formative and summative assessments, the over-reliance on these features might lead to an assessment-centered system compromising collaborations, peer support, and self-assessment. Scholars such as Vygotsky (2000) and Wenger (2002) urges for a community-centered online learning experience where students support and challenge each other

2.7.5 Timely Feedback

The quality of feedback given to learners about their assessment results, strengths, areas that need development, and action points is crucial for their academic progress (Collis, DeBoer, & Slotman, 2001). Feedback is often mentioned by students as an area of dissatisfaction in online classes and makes them feel frustrated and neglected which in turn affects their progress. One of the reasons that cause delayed feedback is teachers' unfamiliarity with online platforms and lack of teacher training (Jaques & Salmon, 2007; Soon, Sook, Jung &IM, 2000; Vrasidas and McIsaac, 1999).

2.7.6 Technological Experience

Although recent generations are believed to be digital natives, many students reported technical problems in their online classes and a lack of computer skills (Simmons, 2002; Soon et al., 2000; Swan, 2001; Swan, 2017). This could lead to anxiety associated with using technology in learning (Gillett-Swan, 2017). Meaning that converting to e-learning teaching and learning could be equally strenuous for instructors and learners (Jaques & Salmon, 2007; Kirkwood & Price, 2014). As learners' and teachers' computer competencies could negatively impact learning in online platforms.

Another barrier is using technology as a new medium of assessment, leading to complications and issues for learners who have connectivity issues or are unfamiliar with the platform used for the assessment (Jaques & Salmon, 2007). Nevertheless, these issues do not always result in negative consequences (Kenny, 2002), as some studies reported that learners' technological competence did not impact their views about online courses (Thurmond et al., 2002).

Learners' frustration could also be led by accessibility issues or incompatibility between their devices and the school platforms and resources. According to Schrum and Hong (2002) accessibility issues and poor infrastructure support from schools prompt learners to withdraw from online courses.

2.7.7 Adaptation during a crisis

The impact of Covid-19 led to major global changes in the educational system forcing educators to immediately shift to distance learning to create a safe educational environment for learners. Hence online platforms such as Zoom, Microsoft Teams, and Google classroom were used to connect students with their teachers and share educational content (Weiner et al., 2022).

Several studies have investigated curriculum design and delivery in learning. Nevertheless, these studies examined the phenomenon when it was a choice (Gillett-Swan, 2017; Jaques & Salmon, 2007; Thurmond et al., 2002), but the changes recently made were forced on educators and students during times of crisis.

Conventionally, online learning and self-teaching were not preferred by teachers, students, and parents; however, post Coronavirus pandemic, all stakeholders were forced to adapt to a sudden shift to online learning during times of crisis. With less pastoral care from the teacher and student-student interactions, learners felt isolated and got limited chances to socially interact with their peers and teachers. This obligation might also affect learners' perception of online learning and create resettlement as it is a forced medium of study.

2.7.8 Teacher training

Successful implementation of curriculum modification relies on the quality of teaching and teachers' involvement in professional development (Gorozidi, and Papaioannou, 2014). It is argued that the majority of the issues in effective curriculum implementation are caused by the lack of teacher training and involvement in the process of curriculum modification. As many teachers were not adequately trained to deal with the current changes in education and the high level of technological integration in their teaching. There is a gap between teachers' background knowledge and the demand for a modified curriculum. Which leads to an inappropriate application by ill-train educators (Gabriel, and Kapalu, 2020). Therefore, teachers need to be actively involved in curriculum modification as they are the main executors of any curriculum changes. For example, a study with visually impaired students in schools in Zambia highlighted that there was a senior in technological integration to help visually impaired students due to teachers' lack of technological knowledge (Mtonga, 2013).

Chapter 3: Research Methodology

3.1 Introduction

The most effective method to understand a research theoretical foundation is through collecting data, comprehensive data analysis, and research transparency (Bernard, 2002; Frey, 2018). Hence, to answer the research questions, and meet the research objectives a triangular approach was selected to merge the literature review with empirical data analysis using different tools of inquiry to collect data, namely a survey questionnaire and an in-depth interview (Frey, 2018).

The data collection took two phases, quantitative and qualitative. The quantitative stage was aimed to gather participants' general viewpoints about the area of investigation and identify trends, similarities, and differences to guide the next qualitative stage of data collection. The qualitative methodology was designed for its flexible nature in collecting data (Denzin and Lincoln, 1994). The qualitative methodology provides an in-depth understanding of attitude, viewpoints, meanings, and perceptions (Krueger, 1988) about how students and learners consider the effectiveness of curriculum modification and delivery for e-learning.

3.2 Purpose Statement

Online learning platforms were previously used as a supplementary tool for assessment in traditional classrooms till the Covid-19 pandemic when it became the main tool of delivery. Hence, there is a limited number of studies that investigated the effectiveness of e-learning platforms and websites as the main tool for education delivery. This paper aims to investigate teachers' and students' viewpoints regarding the productiveness of curriculum modification and delivery in e-learning using online platforms in the UAE educational context to enhance the design of e-learning platforms and improve the learning experience. It also examines the viewpoints and experiences of a group of students and teachers who use online platforms in their teaching and learning. Specifically, this study aimed to answer the following research questions.

3.3 Research Questions

In this study, the following research questions were investigated:

RQ1. What are the pedagogical considerations in building online platforms?

RQ2. To what extent is the curriculum modification adequate for curriculum delivery using online platforms?

RQ3. How effective is content delivery in online classes compared with face-to-face classes?

RQ4. From students' and teachers' perspectives, what are the challenges faced in curriculum modification and delivery using online platforms?

RQ5. From students' and teachers' perspectives, what are the necessary adjustments for making the online learning experience more effective?

3.4 Methods in Data Collection and Analysis

This study aims to investigate the productiveness of curriculum adaptation for e-learning from both learners' and teachers' perspectives. The literature review highlighted the background of the study and set the guidelines for the two data collection tools used in collecting quantitative and qualitative data, namely two anonymous questionnaires one for teachers and one for students; and two interviews. Nelson (2019) advocates for the adequacy of quantitative research tools in collecting data for researches that involve school stakeholders. Additionally, questionnaires are fruitful data collection tools because they are fast and straightforward in obtaining a sufficient number of reliable data (Patton, 1990).

Then, to allow in-depth examples and to obtain a better understanding of the phenomenon in its social context, an interview will be used as a quantitative research tool (Glesne, 2011). Cameron (2018) advocates that triangulating data by using both methods increases understanding of the study and enhances the study findings. Patton also (1990) debates that triangulating data provides in-depth responses that aid in validating and cross-checking the research findings.

For data analysis two approaches were used, firstly, in analyzing the interviewees' responses, the researcher took a thematic analysis approach to present data in a meaningful and comparable manner (Clarke & Braun, 2014). Thematic analysis is a qualitative approach that is widely used by multiple scholars because it is a flexible method that answers the research inquiries, provides meaningful data about participants' viewpoints, and identifies patterns (Glesne, 2011) Secondly, descriptive analysis with percentages, numbers, and charts was used to analyze the questionnaire outcome. Findings were correlated and analyzed to answer the research questions and investigate the phenomenon under study.

3.4.1 Questionnaire

For numerical data collection, a semi-structured questionnaire-based survey was designed as a quantitative research method and administered online using Google forms (see Appendix A).

The questionnaire was aimed to seek learners' and teachers' views about mode/time of interactions, hindering factors, support, feedback, assessment, and other common aspects between online and traditional educational settings. Teachers from the researcher network who have taught or still teach online were invited to complete the questionnaire via email, What's App, and Telegram. The questionnaire relevance, time, clarity, and practicality were evaluated and piloted by two of the researcher's colleagues. The time needed to complete the questionnaire was about 5-10 minutes. Both the students' questionnaire and the teachers' questionnaire followed the same themes and order of questions for comparative data analysis and to analyze the similarities and differences in views from both stakeholders' perspectives (see Appendix A).

The questionnaire consisted of 24 questions and was divided into four sections. Questions were designed based on Hawkes (1996) four broad criteria for assessing school-based distance education systems, namely instructional, ethical, technical, and technical maintenance. The types of questions used included: choices, ranking, and open-ended. More specifically, the first section (Questions 1-3) had questions about teachers' learners' demographic backgrounds and experience in online teaching and learning. To answer RQ2, the second part included six (questions 4-10) ranking and Likert-type questions to measure respondents' general views and experience in online classes. The third section included 9 questions (11-20) was aimed to answer RQs 3 and 4 to explore the effectiveness of curriculum modification and delivery in online learning in comparison to face-to-face learning. The fourth part, consisting of one question (question 21), was designed to answer RQ4 and offered learners and teachers several options to choose all the challenges they encounter in online classes. To obtain more relevant answers, teachers were also given the 'other' option to add any challenges that were not covered in the list. The fifth and final section included two questions (Questions 22, and 23) that were aimed to collect learners' and teachers' views about the necessary modifications needed for an effective online learning experience. Questions 23 was designed as an open-ended question to answer RQ5 and to get teachers' and learners' suggestions about the necessary modifications and changes for a productive learning experience. Additionally, participants were given the space to leave their comments and suggestion on the subject of curriculum modification and delivery.

3.4.2 Interview

Following the first stage of data collection, the participants were invited for a voluntary short interview to further investigate participants' answers. To ensure convenience, participants were given the choice to participate in the interview online using Teams or in person at school. The

interview was selected as an investigation tool because it provides rich data about the area under study and verifies the survey findings (Pathak, Jena, & Kalra, 2013).

Both teachers' and students' interviews consisted of 4 open-ended questions correlated with the survey questions to encourage elaboration and detailed responses to guide the research(see Appendix C). Interviews were conducted individually, to encourage participants to reflect on their experience with e-learning, without consulting external resources or opinions. The questions were non-leading, unbiased, voluntary, and easy to comprehend (Rowley, 2012). Learners were encouraged to ask for clarifications if they could not understand any of the interview questions.

Each interview lasted for 10 minutes and participants' answers were recorded and scripted and the most relevant answers to the research were thematically analyzed. The interview started with an introduction and explanation of the study's aim, purpose, and objective. The data from the interview were analyzed using thematic analysis to spot common themes and patterns in the participants' responses. The identified themes were then reviewed against the questionnaire findings then assembled to inform the research questions.

The following table illustrates the connection and relevance between the data collection tools and research questions (See Appendix A, and B).

Table 1: Research Questions Integration in Research Tools

Research Questions	Survey questions	Interview Questions
RQ1	8, 11, 16	SIQ2
RQ2	7, 9, 10, 12, 13, 18, 19, 20	SIQ1, TIQ3
RQ3	7, 8, 9, 10,11, 14, 18, 19, 20	SIQ2, SIQ3, TIQ3
RQ4	21, 13, 14, 16, 20, 21	SIQ1, TIQ1,
RQ5	22, 23, 20, 21	SIQ4, TIQ2, TIQ4

3.5 Approach in Sampling

Sample means a group of participants selected as a representation of a wider population attributes that are targeted for study and investigation. The findings from the study of this sample are then used to draw conclusions and generalizations of specific phenomena (Martínez-Mesa, González-Chica, Duquia, Bonamigo, & Bastos, 2016). For this paper, a purposive sampling method was followed to choose the target population. Purposive sampling means obtaining the views of a varied sample or the viewpoints of experts in the area of study. Therefore, this sampling approach was adopted in selecting only participants that directly experienced the phenomenon resulting in reliable findings (Morgan, 1997). For these reasons in concentrated on teachers and students.

Participants were teachers and students from different countries and backgrounds with the majority being from the middle east living in the UAE. Both students and teachers experienced online learning in different contexts. First, the population of students comes from different schools to the researcher institute to develop their English language skills, hence the researchers got the chance to collect the viewpoints of students who study in both private and public sectors and in both British and American curricula. Similarly, the participants from teachers were selected from the researcher's former and current teaching settings, who have experience teaching different curriculums in both private and public schools (See table 1).

Due to the accessibility constraints, and as the researcher does not have access to a wide network of students and teachers, a small gender-inclusive sample size was targeted, with accounts of 30 students (20 males and 10 females); 20 teachers (5 males 15 females). All sampled students were high schoolers aged 18+, and familiar with the terminology used in the questionnaire and interview. About the wider population of UAE teachers and students, a respectively small sample size was selected because the researcher has more than two years of experience teaching online and talking to other teachers about their experience, hence can identify and analyze trends in learners' answers. Thomson (2011) argues that the researcher's background knowledge from personal experience and the literature review helps design questions and analyze outcomes.

With students, the questionnaire link was shared on What's App and in class, and the interview was conducted online on Microsoft Teams. As for teachers, the questionnaire was shared via email and What's Ap and the interview was conducted over the phone and on Zoom. Teachers were encouraged to share the questionnaire link with their network of participants who have direct experience with the phenomenon.

Although 30 students and 20 teachers completed the questionnaire, only four students and four teachers (2 males and 2 females) were randomly selected for the interview. A small sample was selected for in-depth analysis and investigation of the participants' context. Locke (2001) debates that detailed understanding and description of participants' social context provides substantial chances of analytics generalizability. This decision was also made after the first three interviews when the researcher noticed similarities in participants' responses. It is debated that, the sample size is sufficient enough when it does not provide new data and the answers are repetitive (Douglas, 2003; Goulding, 2002; Locke, 2001). Thomson (2011) also argues that using the initial interview guide the number of interviews required.

3.6 Ethical Considerations

Ethical implications may occur due to different causes, like the tools of the study, the type of participants concerned, the study topic and content, the methods used in gathering information, or the way the participants' data will be used and shared (Cohen, Marrison & Manion, 2018). Therefore, in planning this research the following aspects will be considered to avoid potential ethical issues: informed consent form; protection of data; participants' safety, privacy, permission, confidentiality, respect, fairness, and anonymity; data collection tools' clarity, trustworthiness, practicality, and reliability.

Firstly, for clarity and practicality, two colleagues from the researcher's institute, who are actively involved in online classes, validated the content of the questionnaire. The participants were encouraged to ask for any clarification about any of the questionnaires, or the interview questions, and the researcher's email was also shared with participants for any further inquiries, leading to more enriched data.

Secondly, regarding permissions, safety, and confidentiality, the research received approval from the BUiD, and permission forms were signed by the teachers who carried out the questionnaire with their students. Additionally, to avoid the risk of harm and any position of discomfort for participants informed consent forms were shared with learners including the purpose of the study, the methods used, potential outcomes, and how the data is to be used. Then the students were given the option to participate in the study or not (Cohen, Marrison & Manion, 2007). The questionnaire and interview were conducted after obtaining participants' informed consent and in a non-threatening manner and in a safe environment (Harvey, 2011), whether online using Teams or Zoom; and face-to-face at school.

Thirdly, for respect and fairness, participants were treated respectfully and fairly when conducting the research, regardless of age, race, religion, or nationality. participation in this study was voluntary and participants were given the right to withdraw from the study at any point if they wish to do so. The time and methods used in data collection were shared with the participant before they agree to participate.

Fourthly, Bryman and Bell (2007) claim that the most critical concepts for ethical considerations are the participants' safety, privacy, confidentiality, and anonymity. Therefore, for anonymity, participants might fear providing answers that would compromise their work or studies as the study ask them to critically evaluate the effectiveness of online learning application and deliver where they work or study. Consequently, the consent of the participants was mandatory before the beginning of the study as participants were required to approve a consent form that required their permission in sharing their answers without identifying their identities. Also, participants were assured that their responses would be used merely for this study to draw conclusions and recommendations, and the completed questionnaire and interview responses will be deleted after the researcher obtains her final result. Moreover, participants' e-mail addresses were not recorded to respect anonymity and confidentiality.

Lastly, for information reliability, trustworthiness, and validity, the study investigated the views of stakeholders who directly experienced the area under study. To avoid the risk of 'group think' the questionnaire and interview were carried out individually without any group discussions. Participants chose the time and place of the interview to feel comfortable and safe (Cohen, Marrison & Manion, 2007). Participants were also given the freedom to ask any questions about the study throughout the data collection stage. Also, the researcher collected data from high school students who are aged (18+) and can provide consent and comprehend the research tools language.

3.7 Significant of the study

Due to the unplanned modifications in education as a result of the drastic shift to online learning, investigations are required to evaluate the effectiveness of these modifications and changes in delivery to guarantee the quality of education provided for learners in e-learning. This area of investigation is still novel and is not explored enough by educators and researchers. Therefore, this study will present figures and findings that could guide the choice of online platforms and address learners' and teachers' concerns.

3.8 Conclusion

In summary, the above-mentioned methodologies and ethical considerations in data collections are aimed to answer the research questions and achieve its aims. This is a triangulated study that is based on two data collection tools to investigate teachers' and students' perceptions on the effectiveness of curriculum modification and delivery in virtual classes using different online platforms. For ethical considerations, confidentiality, anonymity, non-discriminatory, and safety, consent, and permissions were maintained during the data collection stage.

Chapter 4: Findings

4.1 Introduction

This chapter sets out the findings concerning the previous chapters. Firstly, it highlights the key aspects of curriculum modification and delivery presented in the literature review, followed by the findings of the questionnaires and interviews. Then it ends with a discussion that connects the last three chapters with the findings.

To present information and findings numerical scales, tables and graphs were used to build meaning and interpretations. The quantitative data from students' and teachers' questionnaires were analyzed using the descriptive approach, while the qualitative data from the survey were analyzed using thematic data analysis. Lastly, comparative analyses to correlate findings and identify trends, similarities, and differences.

4.2 Data analysis

4.2.1 Quantitative Data Analysis

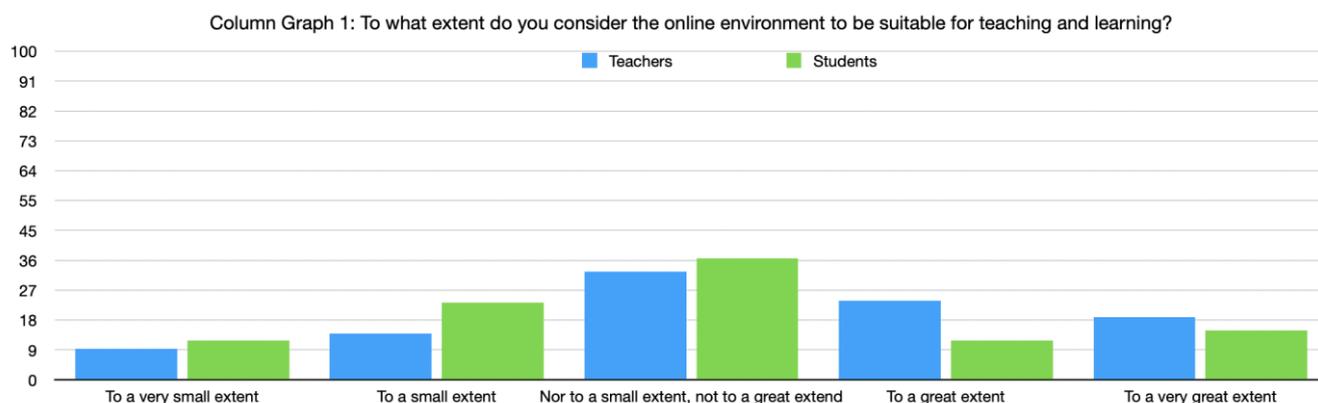
The total number of participants in the study is 44 students (38% females, and 62% Males), and 21 teachers (71% females, 29% males). The majority of participants study or teach in private schools at a high school level. Also, the majority have more than one year of experience in online learning and teaching, 95% of the teachers and 91% of the students (see Table 2, appendix tables 5.1, 5.2, and 5.3). This contributes to the relevance and validity of the data collected as all participants have sufficient exposure to the area under study.

Demographics	Teachers	Students
Number of participants	21	34
Gender	71% Females, 29% Males	62% Males, 38% Females
Age	20-30 (10%), 31-40 (67%) 41+ (23%)	100% aged 18-25
Education stage (studying in/teaching in)	43% High School, 28% Primary School, 5% university level 24% Different levels	100% High school
School system	71% Private, 10% Public, 19% both private and public	85% Private school, 15% Public school

Length of teaching online	95% More than a year, 5% less than 6 month	91% more than one year, 6% less than 3months, 3% less than 6 months
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All participants use different online platforms in their online lessons. Teachers mainly use Zoom and Microsoft team (76% and 81%) in their online sessions, with the integration of some other interactive platforms like Kahoot (100%), Quizziz (91%), Padlet (61%), Nearpod (67%), Quizlet (57%), Edmodo (38%), Alef (24%), Mentimeter (19%), Classdojo (19%), Bamboozle (10%), Schoology, Booklet, Liveworksheet, and Century, Literacy Planet (5%). Similarly, the majority of students use Zoom and Microsoft Teams (65% and 74%) for online lessons and practice on different platforms like Quizziz (91%), Kahoot (71%), Alef (50%), Padlet (44%), Nearpod (32%), Quizlet (35%), Edmodo (27%), Quizlet (35%), Cl:assdojo (9%), Classkick (5%) Schoology, Google forms, and Whiteboard (3%). Therefore, it can be concluded that both teachers and learners use two main platforms for delivery and more than 12 other platforms for activities and interaction with Quizziz and Kahoot as the most repeatedly used (See Appendix C- Tables 5.4, and 5.5).

Regarding the suitability of the e-learning environment for teaching and learning, the majority of teachers and students had a neutral feeling, with more teachers finding it suitable 43% (19% to a very great extent, 24% to a great extent), than students 27% (15% to a great extent, 15% to



a very great extend) (see Column Graph 1)

The study results revealed that the majority of teachers and students showed an overall level of satisfaction with e-learning platforms, with accounts of 86% teachers (43% very satisfied and 43% satisfied), and 74% students (27% very satisfied, 47% satisfied) (see Appendix C Table 5.6). Despite that, there is a considerable high percentage of students (41%), and teachers (62%) who prefer class is to be held face-to-face with only 6% of students and 10% of teachers who would rather online teaching and learning. Surprisingly, both students (79%) and teachers (68%) find e-learning less fun and interesting than traditional teaching and learning (see Appendix C, Table 5.15). It is also worth mentioning that 29% of teachers and 50% of students prefer a mix of online and face-to-face classes It's also worth mentioning that 29% of teachers and 50% of students prefer a mix of online and face-to-face classes (see Appendix C, Table 5.7)

In comparing curriculum delivery in e-learning vs. face-to-face, both teachers and students had considerably similar feedback about four aspects (see Appendix C, Tables 5.9, 5.12, 5.13, 5.15, and 5.16.) Firstly, the suitability of material, the highest percentages indicate that teachers (57%) and students(47%) find online and face-to-face material to be similar. While about 23% of teachers and students find online material more suitable 29% of students and 19% of teachers find it less suitable. Secondly, regarding interaction opportunities, both teachers (95%) and students (59%) agreed that learners get limited opportunities to interact with their peers in e-learning. Closely, the lack of teacher-learner interaction is considerably high from both teachers' and learners' viewpoints (52%, and 47% respectively). Thirdly, teachers and learners have contradictory viewpoints about practice time during online lessons. Whereas approximately a third of participants feel no difference between both modes of study, 29% of teachers and 28% of students feel that they practice more online, 33% of teachers and 29% of students feel the opposite. with accounts of 52% e-learning Why the majority of students agreed that. Lastly, both participants (43% teachers, and 38% students) agreed that learners face challenges in understanding online content.

Moreover, in comparing assessments online vs. face-to-face, a high percentage of teachers (29% unfair, 10% very unfair), while students showed a neutral perspective. about fairness of assessment (see Appendix C, Table 5.10). Another contradiction between teachers' and students' viewpoints is about ease of presenting projects online. Although teachers believe that students find presenting online to be more challenging than presenting in class, learners' responses indicated the opposite (see Appendix C, Table 5. 11).

When measuring participants' satisfaction with the amount of feedback given by teachers, students' views were divided into three groups; the first group (35%) feels satisfied with the amount of feedback, the same percentage indicated the dissatisfaction of the second group, and the third group (29%) perceived the amount of feedback as moderate. As for teachers, while 19% felt that the amount of feedback is insufficient, 30% felt the opposite, and 43 percent felt that the feedback amount is moderate (see Appendix C, Table 5.17).

Additionally, the data collected participants' views about whether there is a necessity to make any curriculum modification for e-learning delivery. Surprisingly, the majority of students and teachers feel that there is a level of change needed to make curriculum content more appropriate for e-learning delivery, with accounts of 72% of teachers, and 88% own students. Yet some of these participants felt concerned about these changes (14% teachers and 12% students) (see Appendix C, Table 5.18).

As e-learning is considerably a new approach to teaching and learning on such a large scale during the past two years, it comes with its positives and negatives. Many many of these challenges were highlighted by previous studies (Song, Singleton, Hill and Koh, 2004; Dyrbye, Cumyn, Day &Heflin 2009), and confirmed by the current study. The most challenging aspects identified by both students and teachers are: limited chances for teacher-student and student-student interaction, lack of learners' engagement, learners getting distracted during online classes, lack of explanation and feedback, poor online platforms provided by schools, unreliable assessment tools, and results, and difficulty in understanding online material. Other challenges identified by teachers are the lack of learners' independence and time to deliver content. As for learners other challenges they face have to do with technical support, unsuitable material, lack of study skills, and lack of motivation to engage in online lessons (saw Table 4).

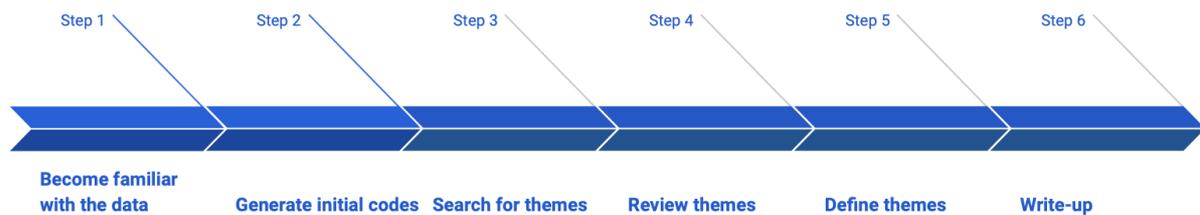
As previously mentioned in the literature review, teacher training is crucial in the implementation of curriculum changes, the findings from both the questionnaire show that teachers skill lack computer skills in lesson delivery and designing online content. In the questionnaire, 5% of the teacher stated that they lack computer knowledge, and 14 percent face challenges in designing online assessments. This was further confirmed by T2 and T4 stating that they find challenges in differentiation and modifying g content to suit the needs of all their learners equally.

Table 3 -Challenging aspects of curriculum modification and delivery in e-learning			
Students' Challenges		Teacher's Challenges	
I don't have enough computer knowledge	9%	don't have enough computer knowledge	5%
I don't receive enough technical support	21%	I don't receive enough technical support	5%
Teachers do not explain everything	29%	I don't have enough time to cover the curriculum	10%
I do not interact enough with my classmates	52%	Learners do not interact enough with each other	81%
I do not interact enough with my teacher	32%	Learners don't interact enough with me	62%
Material is not suitable for online lessons	6%	Material is not suitable for online delivery	10%
I do not get enough feedback from my teacher	21%	I do not get enough chances to give feedback	52%
Online assessments are unfair	21%	Online assessment tools do not give accurate results about learners 'level	52%
I do not know how to study alone	15%	Learners lack independence and rely mainly on me	29%
I get easily distracted in online classes	53%	Learners get easily distracted in online classes	71%
I find online material difficult to understand	15%	I find difficulty in modifying curriculum for online classes	5%
No assessment in online classes	3%	Designing online assessment tools is difficult	14%
The platforms that the school provides are not suitable	6%	Platforms provided by schools are inadequate for online learning	10%
I do not like to engage in online classes	15%	Learners are not engaged enough in online classes	33%
The platforms that the school provide are not suitable	3%	Pronunciation is not clear in language teaching	5%

4.1.2 Qualitative Dat Analysis

The quantitative data is discussed in percentage and the qualitative data from the interview was subjective to qualitative analysis. For qualitative analysis, the researcher adapted Braun & (2006) top-down thematic analysis approach that consists of six steps and is guided by the research questions (see Line graph 1). First, the data from the interview was scripted and reread to identify themes. Then initial open codes were used and modified throughout the coding process, then

common themes were identified and reviewed. Finally, the researcher used the themes in analyzing, and describing data. First, the qualitative data were analyzed by recording the interview responses into categories of common themes linked to the research questions. The repetition of themes was also counted and represented in percentage based on the repetition in participants' responses to the interview questions. The line graph below illustrates the process followed in this study in applying Braun & Clark's (2006) six steps in analyzing qualitative data.



Line Graph 1: Braun & Clark's (2006) six-step framework for thematic analysis

In both students' and teachers' interviews participants were encouraged to compare curriculum modification and delivery in e-learning versus face-to-face settings. They were also prompted to provide their viewpoints about the effectiveness and challenges of e-learning. Furthermore, participants were asked to provide some recommendations about the necessary changes that would make the learning experience more effective in online settings (see Appendix B, and D). Similar to several researches, both teachers and learners highlighted some pros and cons of curriculum modification and delivery in e-learning (Song, Singleton, Hill and Koh, 2004; Dyrbye, Cumyn, Day & Heflin 2009). The main challenge for all sampled teachers and students is a lack of interaction opportunities with both teachers and peers. The main challenge for learners is understanding lessons in online lessons. While the lack of engagement coupled with the lack of participation was considered as the main obstacle of teaching by the majority of teachers, the main implications for teachers are the lack of engagement and participation. These two challenges are consequential because a lack of understanding lesson content would probably result in a lack of participation and interaction.

Regarding the effectiveness of e-learning, some positive aspects were repeatedly mentioned by almost all participants like the use of interactive and engaging platforms in delivering and practicing the content, and the flexibility of sharing and accessing material any time and anywhere. Another advantage mentioned by the students is the clear objectives presented in

online classrooms. Also, some teachers mentioned that classroom management is better and more effective in online classrooms with the teachers having all the control of the learning environment (see Appendix D.2).

Participants provided valuable recommendations that would inform stakeholders about the necessary changes needed in curriculum modification and delivery. Some teachers recommended that parents need to be more involved to follow up with their kids' attendance participation in class and work submission because with no teacher supervision at home maintaining the quality, the authenticity of learners' work is compromised. Almost all teachers highlighted the importance of investment in educational technologies and platforms to include features that enhance interaction and differentiated instructions to meet the needs of all learners equally especially SEND, low achievers, and high achievers;

T2 said, 'The more we invest in this technology the better the learning experience is going to be for us as educators that for our students as well as overtime both of us are becoming better finding our feet in this whole online learning experience home it would also definitely help the students adhere to turning the cameras on because this is something that culturally still not accepted here in the UAE especially for ladies to be on camera. Or at least are physically present because on the other end of the screen you never know if the student is physically present in or out there doing something.'

On the other hand, students made other recommendations that included better technological support, less amount homework and exams, and also involving learners and the decision-making process when it comes to the curriculum pacing and their lessons timings because some learners feel pressured having to study at home and also commit to their families;

S3 said, 'Teachers should also think of the students who have deal with too much pressure on them, and not only school pressure but also family and personal pressure. Students tend to be more alone in closed spaces and face personal problems and can't tell our friends about them.'

Table 4 - Thematic Analysis of Qualitative Data

Teachers' Interview			Students' Interview		
Q	Theme	%	Q	Theme	%
TIQ1	Lack of students' Engagement	75%			

	Lack of participation	100%	SIQ 1	Lack of explanation, consequently lack of understanding	75%
	Less commitment towards learning	50%		Limited time to ask questions in online class unlock face-to-face	50%
	Low students' accountability	50%		Technical issues	75%
	Plagiarism	25%		Cheating hence unfair marks	25%
	Low collaboration	25%		Lack of interaction	100%
	Limited changes to differentiate content	50%		Teachers do not nominate everyone equally	25%
	No chances to provide feedback	50%		No chances to answer questions	25%
TIQ 2	Changing learner's attitude towards online learning	50%	SIQ 2	Do not prefer online learning	100%
	Investment in appropriate online platforms the provide reliable assessment tools, and results; and differentiated content	100%		Interactive games and platforms like Kahoot and Quizziz	75%
				Less screen time in face-to-face	25%
TIQ3	Accessible content at any time and anywhere	75%	SIQ 3	Accessible content and teacher support at any time and anywhere	50%
	Better classroom management	25%		Easier to share and present material online	75%
	Better tools in delivering content	75%		Clear objectives	25%
	Interactive platform and fun educational games	100%		Interactive platforms and fun educational games	75%
TIQ4	Going back face-to-face	25%	SIQ 4	More students involvement in decision making	50%
	Encourage parents involvement	50%		More integration of interactive platforms and activities	75%
	More investment in educational technologies	75%		Support with technical issues	100%
	Improve classroom interaction	50%		Less homework and exams	50%
	Prioritize inclusive learning opportunities for SEND, low achievers and high achievers	50%		Equal opportunities	25%

4.3 Discussion

Since students and teachers are two of the main executors involved in the curriculum implementation, the finding of this study was guided by their views in reference to the literature review (Tabulawa, 2013). This study presented background review, effective and challenging aspects of curriculum design and delivery in e-learning compared to traditional settings, and recommendations based on both learners' and teachers' viewpoints. The study interprets the perception of students and teachers, which showed that online learning provides flexibility and accessibility to learning with some drawbacks. According to participants, e-learning is a reliable source of information as both teachers and students agree upon the fact that e-learning is a reliable learning environment.

Whereas online platforms provide solutions for some key issues that hinder developing online learning settings, it also has its obstacles that hinder their successful implementation in an e-learning environment. It is highlighted by this study literature review that engagement, assessment, feedback, interaction are some of the common challenges that face both teachers and learners in e-learning. Still, this study's findings have echoed these key implications in both qualitative and quantitative data analysis. Other implications that are highlighted in the previous section are lack of comprehension, inadequate material, and platforms for e-learning delivery. This is mainly because schools do not provide teachers with sufficient platforms for assessment, interactions, and content delivery, and as a result, teachers supplement with other free online platforms that require lots of editing and modifying of content without school supervision. For a case in a point, according to this study finding, teachers use more than 12 platforms in online classes and all these platforms are free online.

In answering TIQ4, T4 said, 'Also, schools should convert the material to electronic textbooks, because teachers spend a lot of time converting material from textbooks online and with more workload, teachers end up sharing the pdf version and this is not as engaging for learners as it should be.'

Based upon the analysis of participants, both teachers and students prefer face-to-face learning despite the advantages of e-learning due to the limited interactions with peers and teachers and low learners' engagement and participation. According to the findings from both the teachers'

survey and questionnaire, learners tend to be very passive in class with less participation verbally or in writing. This is also echoed in learners' responses as 41% prefer online lessons, and 100% of the Learners mentioned that they do not like studying online (see Appendix C and D). This explains the low level of participation and engagement in class that frustrates almost all teachers.

In this study, collaboration and interaction between learners are proven to be major challenges for both teachers and learners. Some studies addressing the issue of collaborative learning, claim that collaboration between learners is marginalized as it depends on various variables that are not limited to the design and delivery of the instructions (Cortiz and Silva, 2017). One of these variables is learners' accountability towards their learning and their active participation in online classes. Some learners might be reluctant in their collaborative work online because they lack the technological skills or they have a negative perception of online learning. Ho et al. (2014) has echoed this finding by reporting that students' commitment to their study was very low with only 37% accessing the online platform, due to the intrinsic characteristic of online learning and lack of interaction between learners.

This was also echoed in the interview by T2 who mentioned, 'Another challenge is perhaps holding the students accountable. Like putting your finger on the students they can easily slip away and not complete the task whereas when you see them face-to-face in class again just looking at them in the eye and saying why haven't you completed the lesson task they become more accountable.'

Moreover, the assumption that learners are technologically competent does not particularly mean that they prefer technological mediums, on the contrary, the findings show that hardly 6% of students prefer online learning, while 50% prefer blended learning and 41% chose traditional classes. These findings were further investigated in the interview and 100% of students mentioned that they prefer face-to-face classes to online classes because teachers' explanation is clearer and they miss interactions with their peers in e-learning. This means that digital competence might not affect learning ability in e-learning or learning preference. This echoes previous study findings that reported that learners did not feel comfortable using technology in their learning and they preferred traditional teacher-led classes (Faux and Black-Hughes, 2000)

Also, challenges in the assessment were repeatedly mentioned by the majority of participants throughout the data collection stage. This is due to various variables first, learners do not open their cameras while taking the assessment, second, teachers lack the necessary skills to build

online assessments, third, schools do not invest enough in reliable platforms for assessments and do not provide learners with adequate technical support.

Although the findings show a low level of participation in online classes, learners' and teachers' responses about the effectiveness of online platforms show their tendency in favoring them as educational tools but are conditioned with some modification in content and delivery. A possible factor is that learners use their own devices, and some studies concluded that the BYOD model improves learners' interaction and motivation (Nikou and Economides (2018).

Nevertheless, teachers and students highlighted the importance of modification in the online tools used for delivery. For example, 75% of the teachers interviewed mentioned that online platforms need to be more inclusive to equip teachers with the necessary tool to differentiate content and instructions for SEND students and low-level learners because in online lessons these learners do not get the same support from their shadow teachers as they do in face-to-face. Teachers also mentioned the importance of a face recognition system to hold learners more accountable (see Appendix D.2).

Furthermore, in giving recommendations about what makes the learning experience more effective in teaching and learning, some learners highlighted the importance of choosing their own time to study, and how to study. For example, most of the students gave examples of their favorite online platforms to use when learning online like Kahoot, Nearpod, and they highlighted the importance of choosing their lesson time (see Appendix D.1).

Both teachers and students highlighted the usefulness of online learning flexibility in accessing material any time and anywhere, even if they miss online classes, learners can always see the material shared by teachers, lesson recordings, and chat notes. Leading to self-paced learning, and as proven by several studies enhanced memory performance and cognition (Tullis & Benjamin, 2011).

Overall, the platforms that this study evaluates whether used to hold synchronous lessons, or used as a supplement to increase interaction and involvement in online classes, provide flexible opportunities to access content, contact teachers for support, and exchange information between the instructors and their learners in a safe, economical, and flexible learning environment. Teachers' and learners' responses in the interview have proven these claims, as the majority reported a high level of satisfaction (86% of satisfied teachers, and 74% of satisfied students)

with online platforms especially Kahoot, Quizziz, Padlet, and Nearpod (see Appendix C, Tables, 5.6 and 5.5).

Chapter 5: Conclusion and Recommendations

5.1 Introduction

Before the pandemic, schools were relying on textbooks and smartboards to deliver the curriculum with occasional technological integration in lessons and formative assessments. However, post the pandemic, the educational system has been going through significant changes globally. These changes started with synchronous online lessons using platforms like Microsoft Teams and Zoom, and with growing concerns about learners interaction, motivation, and active engagements, other interactive platforms, applications, and innovations started to be used and experimented with online teaching to deliver content an interactive, safe, and productive learning environment for learners around the world. Therefore this research was aimed to investigate some stakeholders' perceptions of the effectiveness of the major education modification in curriculum and delivery using online platforms and report findings and provide recommendations.

This study examined the perceptions and experiences of a group of students and teachers who use online platforms in their teaching and learning. Specifically, this study aimed to investigate the pedagogical considerations in deigning online platforms (RQ1); the adequacy of curriculum delivery in e-learning (RQ2); the effectiveness of content delivery in online classes concerning traditional settings (RQ3); the challenges that face students and teachers in e-learning (RQ4), and the necessary adjustments for making the learning experience more productive from both students' and teachers' perspectives (RQ5).

5.2 Research Limitations

Even though the current study explores the factors that impact curriculum modification and delivery, it has some limitations. First, as the number of participants is limited to a few schools in the UAE, the extent to which it can be generalized to all e-learning platforms and all schools is restricted (Tellis, 1997). Nevertheless, the outcomes of this study are still relevant for educators who use and modify content for online learning. Although the research sample is small, it still represents a large portion of students who study online in the UAE. Because most of the students who participated in the research study in different private and public schools, hence represent the implementation of various curriculums (see Appendix C, Table 5.2), hence it fits the research objectives and hypostasis and presents valuable findings. More importantly, participants have recently experienced the phenomena, as they are also using different platforms in their current educational setting, which would also increase the data validity and relevance.

Secondly, the fact that students who participated in the study came from different schools to the researchers' institute to develop their language skills gave the researcher the chance to evaluate the perspective of students exposed to different curricula and different methods of delivery. Nevertheless, this could be disadvantageous in providing thorough analyses of a specific context. data about given that most of these applications were facilitated by different teachers working in different school systems, distinguishing the effectiveness and challenges of online platforms is based on non-casual proof.

Thirdly, some biases are possible due to some factors. Participants could be biased in their views based on their personal experience with the school, individual teachers, or their own perspectives of online learning. Additionally, participants are not equally distributed into females and males, so the findings might reflect gender bias. Also, the research did not focus on the curriculum modification and delivery of one specific subject or using one specific platform, so the results might not be an accurate representation of all contents and e-learning tools.

5.3 Research Recommendations

5.3.1 Recommendations for stakeholders

Based on the literature reviews and the findings of this study some recommendations are presented in this section to guide decision-makers in choosing and modifying technological tools in curriculum delivery to enhance teaching and learning. First stockholders should consider the effect of technology integration on content and interactions. Because giving learners access to technology might not lead to improvement without other changes in instructions, methodologies, and curriculum. Once this is identified, then learning objectives should be framed and shared with learners to regulatory evaluate progress and make the necessary adjustments in content design, delivery, and assessment.

Another recommendation to encourage participation is to motivate participation by sharing with learners the percentage of participation as used in some online platforms such as Quizziz, Nearpod, and Kahoot to stimulate responses. This paper provided valuable knowledge about online assessment tools like portfolios and projects, where students are given the chance to document their personalized focus, questions, synthesized information and findings, reflections, and achievements during the course of their study online. These assessment tools guarantee fairness and different forms of interaction. Moreover, The importance of assessing collaborative learning online was often highlighted by researchers like Fisher, Phelps, and Ellis (2002))who

claim that encouraging assessed group projects enhances learners' sense of achievement and give them a sense of community.

Stimulating interaction, and learners' autonomy might not happen if online tools are merely considered as presentational methods used by teachers acting as lectures (McClellan and Crowe, 2017; Siani, 2017). Contrarily, online content should encourage collaborative learning through the use of projects, portfolios to enhance the feeling of a learning community (Palloff & Pratt, 2001). Similarly, teachers advocate that student-student interaction is the most crucial type of interaction in a student-centered e-learning environment where teachers act as facilitators of the content. Several other studies address the importance of student-student interaction in e-learning in improving learners' performance (Jiang & Ting, 1999; Swan, 2001; Thurmond & Wambach, 2004). A potential solution to overcome engagement issues is using a grading rubric based on the established goals and expectations to assess and motivate discussions and collaboration.

Another element that interrelates with successful interaction is effective feedback. This connection is supported by a study that was designed to investigate students' interaction, reporting that getting timely feedback from teachers was an important element that impacted interaction between learners and their active participation in online sessions (Vrasidas & McIsaac, 1999). The varied range of online platforms could be utilized in e-learning to provide an abundance of interaction chances and an opportunity to provide instant feedback and modify tasks to meet learners' individual needs (Jaques & Salmon, 2007).

5.3.2 Recommendation for researchers

5.4 Further Study

As observed in the literature review, it is difficult to rely on one definition for online learning as it is an evolving term, hence more studies that investigate the nature and aspects of online learning based on the most recent dynamics in the educational system.

Additionally, as schools and universities progressively integrate online and blended teaching in their educational system, more investigation as to how it impacts pedagogy is needed (Gregory & Salmon, 2013; Kirkwood & Price, 2014).

Another area that requires further research is the period that learners spent interacting with content, their peers, and their teacher in online classes in comparison to the amount spent in face-to-face classes and how it impacts their learning. It is claimed that learner-content interaction in

online learning is longer than in face-to-face classes resulting in higher learner motivation and interaction (Leasure, Davis & Thievon, 2000). These claims need further support and more recent investigation.

Another important aspect that requires in-depth study is the effectiveness of curriculum delivery of different subjects online. Such as art, math, and science that have more practical aspects in teaching and learning.

5.5 Conclusion

During the past two years, e-learning became a necessity due to the Covid-19 pandemic. Therefore, This research was aimed to share some perceptions and experiences of teachers and learners with educators and online content designers to show a realistic image of curriculum modification and delivery in e-learning with the hope that the process of building effective e-learning tools will continue to develop. This study highlighted participants' attitudes towards online learning in comparison to traditional classroom-based settings, concerning its pros and cons, and possible alterations that could refine the teaching and learning experience. It also analyzed the perception of students and teachers from private and public schools in the UAE of the effectiveness of curriculum modification and delivery in e-learning.

With this in mind, two data collection tools were developed to investigate the viewpoints and experiences of learners and teachers quantitative data using two questionnaires and qualitative data using two interviews. Triangulating the data complemented each method, confirmed the findings of the quantitative data, and presented an in-depth analysis of the topic under study Cameron (2018). The research questionnaires were created for this study, data were collected with a mixed-methods research paradigm. The population of the study consisted of 44 students and 21 teachers. The interview sample size compromised of 4 students and 4 teachers. The data findings confirmed the findings of similar studies, challenged the researcher's hypothesis 1, and confirmed the researcher's hypothesis 2, 3, and 4. It also provided more in-depth prospects of stakeholders on recent phenomena in the educational system.

Although online platforms are practical educational practices in modern classes, they still have some drawbacks in meeting learners' needs. Hence, this study serves to address some of the weaknesses in curriculum modification and delivery for online platforms that could be addressed to strengthen its potential. Based on the findings, there is increased emphasis on developing more effective and holistic online platforms that integrate reliable assessment tools, interactive

activities, interaction opportunities, tools to provide consistent feedback, technical support, and inclusive learner opportunities for all learners equally. This will first reduce destruction and reduce the large number of platforms the teachers rely on to address these challenges individually. Additionally, addressing these key issues facing teachers and students might alter their perception of the effectiveness of curriculum modifications and delivery in e-learning.

The reflections presented throughout this paper have presented variables that have been connected with e-learning implications including content duplication, assessment, feedback, technological experience, limited changes of interaction, and lack of students' independence and autonomy. Incompetence with computer skills has been highlighted as a negative obstacle to learning. Studies referenced present contradictory findings of learners' perception of technological issues impact on their learning experience, and disconnection between computer competency and choosing online learning as a medium of study. Overall, lack of technological experience might not be negatively perceived by all studies, yet it is clear that learners' have different perceptions of technological integration in their learning, causing further complications for online-content designers to make online platforms more inclusive and appealing for learners.

Regarding future studies, it would be helpful to note that the findings of this paper are subject to some limitations. All participants are living and are being educated in UAE schools therefore, the outcomes may not be representative of global students who use the same online platforms. Nevertheless, this research finding could be used as benchmarks while designing web-based content and deciding on the focus of future studies.

With the growing concerns about diseases and war, e-learning is here to stay hence educators and curriculum designers need to take these research findings into account when building reliable online platforms to provide a barrier-free curriculum. Also, accommodation, adaptation, parallel curriculum, overlapping curriculum, assessment modification, and curriculum delivery require careful considerations while transferring teaching and learning to online platforms and investment in teacher training for effective application.

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Appendices

A. Questionnaires

1. Student Questionnaire (SQ)

Link: <https://forms.gle/j5GY2BHzCgVnDi999>

Welcome

You are invited to participate in this study by completing an online survey questionnaire which would take 5-10 minutes. This page provides you with the key information about the study, so that you may provide informed consent to participate in the research.

Study Title: The effectiveness of curriculum modification and delivery using online platforms in the UAE.

Researcher: Nadia Elhabak (Master's Degree in Education Management Leadership and Policy candidate), The British University.

Purpose of the study: To investigate and evaluate the effectiveness of curriculum modification and delivery using online platforms in the UAE. For example using platforms such as Teams, Zoom and supplementing them with Edmodo, Padlet, Nearpod, etc. to deliver modified curriculum content online, where learners can join and engage with the content using their own devices in online classes.

Use of data: The data collected through this online survey questionnaire will be used for this dissertation only, where I will be able to draw conclusions and recommendations on this topic. Completed questionnaires will be kept private and deleted after the study results are completed. Should you wish to see the results please contact me using my email below.

Anonymity and confidentiality: Participation in this is completely voluntary, and you have the freedom to withdraw at any point. Your responses are completely anonymous, and all information provided will be treated with strict confidence.

Risk: Participation in this research doesn't involve any risks. You will not be asked to provide any personal, sensitive, or confidential information at any stage.

Further information: This study is aimed to collect data from students who have experience in learning online. If you require any further information about this research, please contact Nadia Elhabak. Email: nadia_elhabak@yahoo.com

Your agreement: By completing this survey you agree to the terms identified above.

Your input and time are highly appreciated!

Section 2 of 6

Part 1- Demographics

1. What is your gender?

Female

Male

2. What is your age?

Under 12 years old
12-17 years old
17 - 30 years old
35 years or older

3. At which educational stage have you studied in online lessons?

Primary school
Secondary School
High School
University level

4. Which school system have you studied online in?

Private school
Public school
University

Section 3 of 6

Part 2 - Online Learning Experience

5. For how long have you studied in online classes?

Never
Less than three month
Less than 6 month
More than one year

6. Which of these platforms do you use in online lessons?

Zoom
Microsoft Teams
Google meet

7. Which of these platforms do you use for online practice?

Quizziz
Padlet
Nearpod
Alef
Mentimeter
Bamboozle
Kahoot
Classdojo
Quizlet
Edmodo
Schoology
Other...

8. To what extent do you consider the online environment to be suitable for learning?

To a very small extent
To a small extent
Nor to a small extent, nor to a great extent
To a great extent
To a very great extent

9. How do you prefer to give answers in an online class?

Answer live during the online class
Write my answer in the chat-box
Both in the chat-box and live
I don't answer

10. Overall, how satisfied are you with your learning experience using e-learning platforms (e.g. Teams, Quizzes, Kahoot, Nearpod, etc.) in online lessons?

Very dissatisfied
Dissatisfied
Nor satisfied, nor dissatisfied
Somewhat satisfied
Very satisfied

11. If you could choose, you would prefer:

For classes to be held online
For classes to be held face-to-face
A mix of online and face-to-face classes
I don't know

Section 4 of 6

Part 3 - Content and Delivery in Online learning vs. face-to-face learning

12. Compared to face-to-face classes, how clear are the learning objectives in online classes?

Very unclear
Unclear
Similar to face-to-face classes
Clear
Very clear

13. Compared to face-to-face classes, how would you evaluate the material used in online classes?

More suitable and interactive
Similar to the material used in a face-to-face class
Less suitable and interactive

14. Compared to face-to-face classes, how would you evaluate assessments methods used in online classes?

Very unfair
Unfair
Neutral
Fair
Very fair

15. Compared to face-to-face classrooms, when you present a project online

You find it harder to present
You find it easier to present
You find it nor easier, nor harder to present

16. Compared to face-to-face classrooms, how long do you have for interaction with your peer?

Less time than face-to-face classes
More time than face-to-face classes
Nor less time, nor more time

17. Compared to face-to-face classrooms, how long do you have for interaction with your teacher?

Less time than face-to-face classes
More time than face-to-face classes

Nor less time, nor more time

18. Compared to face-to-face classes, how do you feel about online classes?

More fun and interesting to learn

Nor fun, nor interesting to learn

Less fun and interesting than learning in face-to-face classes

19. Compared to face-face- classes, how would you evaluate your understanding in online classes?

Easier to understand information

Harder to understand information

Nor easier, nor harder to understand information

20. Compared to face-to-face classes, how much do you get to practice and do activities in online classes?

More than they practice in a face-to-face class

Less than they practice in a face-to-face class

Nor more, nor less

I do not practice at all

21. Compared to face-to-face classes, how often do you get feedback from your teacher in online classes?

Never

Not enough

Moderate

Enough

More than enough

Section 5 of 6

Part 4- Challenges

22. In your opinion, what are the most challenging aspects of online lessons? Tick all that applies.

I don't have enough computer knowledge

I don't receive enough technical support

Teachers do not explain everything

I do not interact enough with my classmates

I do not interact enough with my teacher

Material is not suitable for online lessons

I do not get enough feedback from my teacher

Online assessments are unfair

I do not know how to study alone

I get easily distracted in online classes

I find online material difficult to understand

No assessment in online classes

The platforms that the school provides are not suitable

I do not like to engage in online classes

Other...

Section 6 of 6

Part 5 - Necessary changes and modification

23. Do you believe that some changes should be made in the curriculum used for online lessons?

Yes, I believe that the curriculum should change to be suitable for online lessons

Yes, but I am concerned about the changes

Maybe, some changes should be made

No, the curriculum has already changed for online lessons

No, the curriculum for online lessons is appropriate and doesn't need changes

24. What are the curriculum changes needed for online learning?

Long answer text

Comments

2. Teachers' Questionnaire (TQ)

Link: <https://forms.gle/gbz9PNU3ReYsv9JN8>

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You are invited to participate in this study by completing an online survey questionnaire which would take 5-10 minutes. This page provides you with the key information about the study, so that you may provide informed consent to participate in the research.

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Your agreement: By clicking on the next button below you agree to the terms identified above.

Your input and time are highly appreciated!

[Section 2 of 6](#)

Part 1- Demographics

1. What is your gender?

Female

Male

2. What is your age?

20-30

31-40

41-50

+51

3. Which educational stage have you taught using online classes?

Primary school

Secondary School

High School

University level

Other...

4. Which school system have you taught online classes in?

Private

Public

Both private and public

University

Other...

Section 3 of 6

Part 2 - Online Learning Experience

5. For how long have you taught online?

Never

Less than three month

Less than 6 month

More than one year

6. Which of these platforms do you use in online lessons?

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Microsoft Teams

Google meet

Other...

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Padlet

Nearpod

Alef

Mentimeter

Bamboozle

Kahoot

Classdojo

Quizlet

Edmodo

Schoology

Other...

8. To what extent do you consider the online environment to be suitable for teaching and learning?

To a very small extent

To a small extent

Nor to a small extent, nor to a great extent

To a great extent

To a very great extent

9. How do students give answers in an online class?

Answer live during the online class

Write answers in the chat-box

Both in the chat-box and live

They don't answer

10. Overall, how satisfied are you with your teaching experience using e-learning platforms (e.g. Teams, Quizzes, Kahoot, Nearpod, etc.) in online lessons?

Very dissatisfied

Dissatisfied

Nor satisfied, nor dissatisfied

Somewhat satisfied

Very satisfied

11. If you could choose, you would prefer:

For classes to be held online

For classes to be held face-to-face

A mix of online and face-to-face classes

I don't know

Section 4 of 6

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21. Compared to face-to-face classes, how often do you give learners feedback in online classes?

Never

Not enough

Moderate

Enough

More than enough

Section 5 of 6

Part 4- Challenges

22. In your opinion, what are the most challenging aspects of online lessons? Tick all that applies.

I don't have enough computer knowledge

I don't receive enough technical support

I don't have enough time to cover the curriculum

Learners do not interact enough with each other

Learners don't interact enough with me

Material is not suitable for online delivery

I do not get enough chances to give feedback

Online assessment tools do not give accurate results about learners' level

Learners lack independence and rely mainly on me

Learners get easily distracted in online classes

I find difficulty in modifying curriculum for online classes

Designing online assessment tools is difficult

Platforms provided by schools are inadequate for online learning

Learners are not engaged enough in online classes

Section 6 of 6

Part 5 - Necessary changes and modification

23. Do you believe that some changes should be made in the curriculum used for online lessons?

Yes, I believe that the curriculum should change to be suitable for online lessons

Yes, but I am concerned about the changes

Maybe, some changes should be made

No, the curriculum has already changed for online lessons

No, the curriculum for online lessons is appropriate and doesn't need changes

Other...

24. What are the changes needed?

Comments

B. Interview Questions

Students' Interview Questions (SIQ)

SIQ 1: What aspects of your learning do you find difficult in online classes?

SIQ2: What is the difference between your learning experience face-to-face and online?

SIQ 3: What aspects of your learning do you find more effective in online classes?

SIQ 4: What could improve the online learning experience for you?

Teachers' Interview Questions (TIQ)

TIQ: What are the challenges you face/ have faced in teaching online?

TIQ2: What are the necessary curriculum changes needed for online learning delivery?

TIQ3: How effective is curriculum delivery in online classes compared to face-to-face? Why?

TIQ4: What could improve the online teaching experience for you?

C. Questionnaire Data

Table 5 - Comparative data

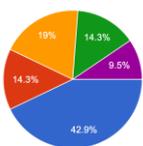
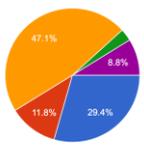
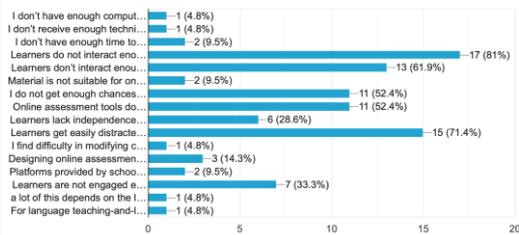
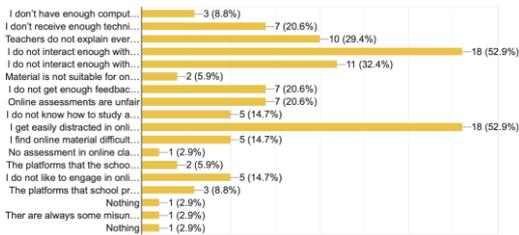
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5.1	<p>1. What is your gender? 21 responses</p> <table border="1"> <tr><th>Gender</th><th>Percentage</th></tr> <tr><td>Female</td><td>71.4%</td></tr> <tr><td>Male</td><td>28.6%</td></tr> </table>	Gender	Percentage	Female	71.4%	Male	28.6%	<p>1. What is your gender? 34 responses</p> <table border="1"> <tr><th>Gender</th><th>Percentage</th></tr> <tr><td>Female</td><td>38.2%</td></tr> <tr><td>Male</td><td>61.8%</td></tr> </table>	Gender	Percentage	Female	38.2%	Male	61.8%																																																																																	
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5.5	<p>7. Which of these platforms do you use with your learners to practice in online classes? 21 responses</p> <table border="1"> <tr><th>Platform</th><th>Count</th><th>Percentage</th></tr> <tr><td>Quizizz</td><td>19</td><td>90.5%</td></tr> <tr><td>Padlet</td><td>13</td><td>61.9%</td></tr> <tr><td>Nearpod</td><td>14</td><td>66.7%</td></tr> <tr><td>Aiel</td><td>5</td><td>23.8%</td></tr> <tr><td>Mentimeter</td><td>4</td><td>19%</td></tr> <tr><td>Bamboozle</td><td>2</td><td>9.5%</td></tr> <tr><td>Kahoot</td><td>21</td><td>100%</td></tr> <tr><td>Classdojo</td><td>4</td><td>19%</td></tr> <tr><td>Quizlet</td><td>12</td><td>57.1%</td></tr> <tr><td>Edmodo</td><td>8</td><td>38.1%</td></tr> <tr><td>Schooly</td><td>1</td><td>4.8%</td></tr> <tr><td>Blocket</td><td>1</td><td>4.8%</td></tr> <tr><td>Century, Literacy Planet and...</td><td>1</td><td>4.8%</td></tr> <tr><td>Liveworksheets</td><td>1</td><td>4.8%</td></tr> </table>	Platform	Count	Percentage	Quizizz	19	90.5%	Padlet	13	61.9%	Nearpod	14	66.7%	Aiel	5	23.8%	Mentimeter	4	19%	Bamboozle	2	9.5%	Kahoot	21	100%	Classdojo	4	19%	Quizlet	12	57.1%	Edmodo	8	38.1%	Schooly	1	4.8%	Blocket	1	4.8%	Century, Literacy Planet and...	1	4.8%	Liveworksheets	1	4.8%	<p>7. Which of these platforms do you use for online practice? 34 responses</p> <table border="1"> <tr><th>Platform</th><th>Count</th><th>Percentage</th></tr> <tr><td>Quizizz</td><td>31</td><td>91.2%</td></tr> <tr><td>Padlet</td><td>15</td><td>44.1%</td></tr> <tr><td>Nearpod</td><td>11</td><td>32.4%</td></tr> <tr><td>Aiel</td><td>17</td><td>50%</td></tr> <tr><td>Mentimeter</td><td>0</td><td>0%</td></tr> <tr><td>Bamboozle</td><td>0</td><td>0%</td></tr> <tr><td>Kahoot</td><td>24</td><td>70.6%</td></tr> <tr><td>Classdojo</td><td>3</td><td>8.8%</td></tr> <tr><td>Quizlet</td><td>12</td><td>35.3%</td></tr> <tr><td>Edmodo</td><td>9</td><td>26.5%</td></tr> <tr><td>Schooly</td><td>1</td><td>2.9%</td></tr> <tr><td>Google forms and google cla...</td><td>1</td><td>2.9%</td></tr> <tr><td>White board</td><td>1</td><td>2.9%</td></tr> <tr><td>classkick</td><td>1</td><td>2.9%</td></tr> <tr><td>Classkick</td><td>1</td><td>2.9%</td></tr> </table>	Platform	Count	Percentage	Quizizz	31	91.2%	Padlet	15	44.1%	Nearpod	11	32.4%	Aiel	17	50%	Mentimeter	0	0%	Bamboozle	0	0%	Kahoot	24	70.6%	Classdojo	3	8.8%	Quizlet	12	35.3%	Edmodo	9	26.5%	Schooly	1	2.9%	Google forms and google cla...	1	2.9%	White board	1	2.9%	classkick	1	2.9%	Classkick	1	2.9%
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Table 5 - Comparative data

	Teachers' Responses	Students' Responses
5.6	<p>10. Overall, how satisfied are you with your teaching experience using e-learning platforms (e.g. Teams, Quizzes, Kahoot, Nearpod, etc.) in online lessons? 21 responses</p> <ul style="list-style-type: none"> Very dissatisfied Dissatisfied Nor satisfied, nor dissatisfied Somewhat satisfied Very satisfied 	<p>10. Overall, how satisfied are you with your learning experience using e-learning platforms (e.g. Teams, Quizzes, Kahoot, Nearpod, etc.) in online lessons? 34 responses</p> <ul style="list-style-type: none"> Very dissatisfied Dissatisfied Nor satisfied, nor dissatisfied Somewhat satisfied Very satisfied
5.7	<p>11. If you could choose, you would prefer: 21 responses</p> <ul style="list-style-type: none"> For classes to be held online For classes to be held face-to-face A mix of online and face-to-face classes I don't know 	<p>11. If you could choose, you would prefer: 34 responses</p> <ul style="list-style-type: none"> For classes to be held online For classes to be held face-to-face A mix of online and face-to-face classes I don't know
5.8	<p>12. Compared to face-to-face classes, how clear are the learning objectives in online classes? 21 responses</p> <ul style="list-style-type: none"> Very unclear Unclear Similar to face-to-face classes Clear Very clear 	<p>12. Compared to face-to-face classes, how clear are the learning objectives in online classes? 34 responses</p> <ul style="list-style-type: none"> Very unclear Unclear Similar to face-to-face classes Clear Very clear
5.9	<p>13. Compared to face-to-face classes, how would you evaluate the material used in online classes? 21 responses</p> <ul style="list-style-type: none"> More suitable and interactive Similar to the material used in a face-to-face class Less suitable and interactive Neither suitable nor interactive 	<p>13. Compared to face-to-face classes, how would you evaluate the material used in online classes? 34 responses</p> <ul style="list-style-type: none"> More suitable and interactive Similar to the material used in a face-to-face class Less suitable and interactive
5.10	<p>14. Compared to face-to-face classes, how would you evaluate assessments methods used in online classes? 21 responses</p> <ul style="list-style-type: none"> Very unfair Unfair Neutral Fair Very fair 	<p>14. Compared to face-to-face classes, how would you evaluate assessments methods used in online classes? 34 responses</p> <ul style="list-style-type: none"> Very unfair Unfair Neutral Fair Very fair
5.11	<p>15. Compared to face-to-face classrooms, when learners present a project online 21 responses</p> <ul style="list-style-type: none"> They find it harder to present They find it easier to present They find it nor easier, nor harder to present 	<p>15. Compared to face-to-face classrooms, when you present a project online 34 responses</p> <ul style="list-style-type: none"> You find it harder to present You find it easier to present You find it nor easier, nor harder to present

Table 5 - Comparative data

	Teachers' Responses	Students' Responses
5.1 2	<p>16. Compared to face-to-face classrooms, how long do learners have for interaction with their peers? 21 responses</p> <ul style="list-style-type: none"> Less time than face-to-face classes More time than face-to-face classes Nor less time, nor more time 	<p>16. Compared to face-to-face classrooms, how long do you have for interaction with your peer? 34 responses</p> <ul style="list-style-type: none"> Less time than face-to-face classes More time than face-to-face classes Nor less time, nor more time
5.1 3	<p>17. Compared to face-to-face classrooms, how long do you have for interaction with your learners? 21 responses</p> <ul style="list-style-type: none"> Less time than face-to-face classes More time than face-to-face classes Nor less time, nor more time 	<p>17. Compared to face-to-face classrooms, how long do you have for interaction with your teacher? 34 responses</p> <ul style="list-style-type: none"> Less time than face-to-face classes More time than face-to-face classes Nor less time, nor more time
5.1 4	<p>18. Compared to face-to-face classes, how do you feel about online classes? 21 responses</p> <ul style="list-style-type: none"> More fun and interesting to teach Nor fun, nor interesting to teach Less fun and interesting than teaching in face-to-face classes 	<p>18. Compared to face-to-face classes, how do you feel about online classes? 34 responses</p> <ul style="list-style-type: none"> More fun and interesting to learn Nor fun, nor interesting to learn Less fun and interesting than learning in face-to-face classes
5.1 5	<p>19. Compared to face-to-face classes, how would you evaluate your learners' understanding in online classes? 21 responses</p> <ul style="list-style-type: none"> Easier to understand information Harder to understand information Nor easier, nor harder to understand information 	<p>19. Compared to face-to-face classes, how would you evaluate your understanding in online classes? 34 responses</p> <ul style="list-style-type: none"> Easier to understand information Harder to understand information Nor easier, nor harder to understand information
5.1 6	<p>20. Compared to face-to-face classes, how much do learners get to practice and do activities in online classes? 21 responses</p> <ul style="list-style-type: none"> More than they practice in a face-to-face class Less than they practice in a face-to-face class Nor more, nor less They do not practice at all 	<p>20. Compared to face-to-face classes, how much do you get to practice and do activities in online classes? 34 responses</p> <ul style="list-style-type: none"> More than they practice in a face-to-face class Less than they practice in a face-to-face class Nor more, nor less I do not practice at all
5.1 7	<p>21. Compared to face-to-face classes, how often do you give learners feedback in online classes? 21 responses</p> <ul style="list-style-type: none"> Never Not enough Moderate Enough More than enough 	<p>21. Compared to face-to-face classes, how often do you get feedback from your teacher in online classes? 34 responses</p> <ul style="list-style-type: none"> Never Not enough Moderate Enough More than enough

Table 5 - Comparative data		
	Teachers' Responses	Students' Responses
5.1 8	<p>23. Do you believe that some changes should be made in the curriculum used for online lessons? 21 responses</p>  <ul style="list-style-type: none"> Yes, I believe that the curriculum should change to be suitable for online lessons Yes, but I am concerned about the changes Maybe, some changes should be made No, the curriculum has already changed for online lessons No, the curriculum for online lessons is appropriate and doesn't need changes 	<p>23. Do you believe that some changes should be made in the curriculum used for online lessons? 34 responses</p>  <ul style="list-style-type: none"> Yes, I believe that the curriculum should change to be suitable for online lessons Yes, but I am concerned about the changes Maybe, some changes should be made No, the curriculum has already changed for online lessons No, the curriculum for online lessons is appropriate and doesn't need changes
5.1 9	<p>22. In your opinion, what are the most challenging aspects of online lessons? Tick all that applies. 21 responses</p>  <ul style="list-style-type: none"> I don't have enough comput... -1 (4.8%) I don't receive enough techni... -1 (4.8%) I don't have enough time to... -2 (9.5%) Learners do not interact eno... -17 (81%) Learners don't interact enou... -13 (61.9%) Material is not suitable for on... -2 (9.5%) I do not get enough chances... -11 (52.4%) Online assessment tools do... -11 (52.4%) Learners lack independence... -6 (28.6%) Learners get easily distracte... -15 (71.4%) I find difficulty in modifying... -3 (14.3%) Designing online assessmen... -3 (14.3%) Platforms provided by schoo... -2 (9.5%) Learners are not engaged e... -7 (33.3%) a lot of this depends on the l... -1 (4.8%) For language teaching-and-l... -1 (4.8%) 	<p>22. In your opinion, what are the most challenging aspects of online lessons? Tick all that applies. 34 responses</p>  <ul style="list-style-type: none"> I don't have enough comput... -3 (8.8%) I don't receive enough techni... -7 (20.6%) Teachers do not explain ever... -10 (29.4%) I do not interact enough with... -18 (52.9%) I do not interact enough with... -11 (32.4%) Material is not suitable for on... -2 (5.9%) I do not get enough feedbac... -7 (20.6%) Online assessments are unfair... -7 (20.6%) I do not know how to study a... -5 (14.7%) I get easily distracted in onl... -5 (14.7%) I find online material difficul... -5 (14.7%) No assessment in online cla... -1 (2.9%) The platforms that the schoo... -2 (5.9%) I do not like to engage in onl... -5 (14.7%) The platforms that school pr... -3 (8.8%) Nothing -1 (2.9%) There are always some misun... -1 (2.9%) Nothing -1 (2.9%)

D. Interview Data

1. Students replies

Q	S1	S2	S3	S4
SIQ 1: What aspects of your learning do you find difficult in online classes?	From my experience, I see that face-to-face is more useful to the students and easier than online learning because we can focus with the doctor in the time that he is explaining in the class. Also, there will be a high contribution between the doctor and the student in face-to-face rather than online so I see that online is not a good situation for us as university students or in general	Online learning is very interactive when we use Kahoot and Quiz and other online games to study and it is easy to share screen and presentations in class and I feel more confident. But I prefer face to face because I do not get enough time to talk to my classmates or ask the teacher questions.	In class I always see the teacher and understand when they explain, but online I feel lazy and because I don't see the teacher I don't understand.	I feel that the lessons are too much and I spend too much time in front of my computer.

<p>SIQ2: What is the difference between your learning experience face-to-face and online?</p>	<p>The different aspects that I've found harder in online learning classes. One is that sometimes we don't understand the doctor's explanation, sometimes he speaks too fast sometimes he speaks too slow, and also sometimes his voice lags and there is an echo sound so that sometimes we don't understand. Another aspect for me is that in online classes I think that the doctor is not like really really explaining for example in one of my subjects he just shares the PowerPoint and he just reads and talks about the slides and sees if anyone has questions. That's it! But in face-to-face, there is high contribution between us the teacher. So these are the hardest aspects of online classes.</p>	<p>The teachers don't explain in details and they don't make sure that all students understand what they said, and when I have troubles with the subject the teacher does not notice because they don't see me. Teachers also choose the smart students to answer questions or their "favorite" students to answer, I hope they choose random people and care for other students and let them answer too</p>	<p>Many of my friends cheat and share answers on What's app and I feel that our marks are not fair and I end up cheating too. Another issues is assessments they are not fair online. The teacher also don't explain and when the lesson ends they close the meeting and I can't say may problems.</p>	<p>No support with technical issues and I lost marks in exams because of technical problems and when I tell the teacher they don't answer.</p>
<p>SIQ 3: What aspects of your learning do you find more effective in online classes?</p>	<p>One of the aspects that I liked in the online classes and that happened to me in my previous semester. In one of my subjects, I used to answer activities using Nearpod and Kahoot while studying online. So I liked that in online classes. Another aspect for working students like me the working student they will be having a comfortable time, so don't need to go to university and come back, so they just sit in the home and take classes. Also to add that there is easy communication with the teacher. So I can contact him on Team or via email and I like this aspect too.</p>	<p>The learning objectives are clear and I like online games and activities</p>	<p>I like activities online and the pictures and videos that the teacher share. It is also good to be at home and relax while studying.</p>	<p>It is good during Ramadan because we can't fast, wake up early get ready go to school walk around and do everything and coming back home at 3, we should help cooking too we can't just sit home. So we should be online we can't do everything at the same time we will be exhausted.</p>

<p>SIQ 4: What could improve the online learning experience for you?</p>	<p>One of my suggestions is before starting the semester they check with learners which comfortable time to have classes. Also to have more activities in the online classes, so the student will not feel like the class is too boring for them.</p>	<ul style="list-style-type: none"> - Teachers should be more open to students - Teachers should ask if students like online or not before forcing it on us. - Teachers can ask if we have trouble on their computer or wifi or on communicating in class - Teachers should also think of the students who have deal with too much pressure on them, and not only school pressure but also family and personal pressure. Students tend to be more alone in closed spaces and face personal problems and can't tell our friends about them. 	<p>Teacher and school it need to support us with technical issues because sometimes the platform doesn't open or I face problems when answering questions online. We also need more activities to practice. Online learning should be an option not mandatory because I miss talking to my friend and teachers.</p>	<p>More interaction with out classmates and chance to chart with our teachers privately. Teachers need to explain more in online lessons. We can study both online and face to face but more time in class to study with our friends. And teachers should stop giving too much homework and exams.</p>
<p>Comments</p>	<p>I prefer face-to-face</p>	<p>I prefer face-to-face</p>	<p>Studying at school, I don't like online learning</p>	<p>Going back face-to-face</p>

2. Teachers' Replies

	T1 (Elementary/ American Curriculum)	T2 (High school/ taught both British and American curriculum online)	T3 (High school/ American curriculum)	T4 (High school/ MoE curriculum)
TIQ: What are the challenges you face/ faced in teaching online?	<p>Well if to speak about the challenges facing, and the challenges we faced while teaching online I think one of them would be students engagement. They definitely feel and especially not in front of the eyes of the teacher they do believe that it's not necessary to be engaged all the time to even type on the answer in the chat or participate in the call or something some of them are just you know blank names on the screen so students engagement one of the biggest issues. And another one whenever they have to complete something online they kind of stopped feeling there is some kind of deadline to complete assignments they feel that it can be open for whatever and honestly in case of my school they definitely facilitated that feeling because even when we made assignments not timed but like they have to complete it within a certain period of time let's say within two days or whatever, our admin would insist for us to open that assignment again. Not the assessments but the assignments. That feeling of I can do it one more time I can repeat it one more time transferred even to the assessments like they lost the feeling of urgency and that they have to do their best from the first time.</p>	<p>Talking about the challenges that I have been facing teaching online since last year well the most striking challenges perhaps students engagement because where is the online class it's easier for the students to get distracted doing something else or they can simply up to zone out of the classroom or choose not to be engaged. Even if you ask put them into breakout rooms to work with their classmates. They just leave the room and decide not complete the activity. Another challenge is perhaps holding the students accountable. Like putting your finger on the students they can easily slip away and not complete the task whereas when you see them face-to-face in class again just looking at them in the eye and say why haven't you completed the lesson task they become more accountable. So this has to do with the students engagement which is which is the most important factor. Also plagiarism using Google search and Wikipedia.</p>	<ul style="list-style-type: none"> - getting authentic feedback, use curriculum designed for traditional assessment- so the assessment tools and results are not reliable anymore - groups work and team work is challenging and no enough interactions between learner - Some subjects are difficult to teach online - Attendance rate is very low and also participation and teachers don't have control over who attend class anymore - Curriculum used is curriculum designed for Used online is a curriculum designed for a traditional setting 	<p>The main three challenges for me were engagement, differentiation, and low participation. Making the less engaged students participate and engage in class. Also creating differentiated content for students who are struggling it was difficult to spot the students who were struggling because many choose to mute themselves and avoid participation completely.</p>

<p>TIQ 2: What are the necessary curriculum changes needed for online learning delivery?</p>	<p>I honestly haven't thought about the curriculum changes in regards of the online teaching, but so far I don't think it's the problem of the curriculum, of the skills that you have to teach it's the attitude of the students whenever they set and study in front of the screen and especially when talking about upper elementary maybe it is different in upper grades like a defined starting grade. In my case they feel that whatever they are. We even noticed a big difference in regards of students participation and attitude whenever something like now this year we had one month online and then they were all asked to come back face-to-face. The things that they used to do online is taken as a joke and the moment they're back to school and you give them paper even if it's just a worksheet to practice the skills in class they take it way mores seriously then similar work to be completed online. For assessment because they were given endless extensions in terms of submitting the assignment that feeling is still there that they can continue working on that endlessly and many times as they feel like doing it.</p>	<p>Regarding the second point about adjustments were going to that saying that there needs to be more integration of technology and online platforms to make the delivery of the class more interactive and more effective. So, there needs to be certain channels where learners can turn in their lesson tasks whether they are differentiated tasks, standard in-class tasks or projects. There is a need for efficient online platforms to be used during the lesson for instructions, assessments, and project all together rather than so many other platforms. Also supporting and understand inclusion. There need to be certain intervention platforms that are used to make sure that the students are accommodated in the lessons. For example in my previous school I have used IXL where differentiated tasks were assigned for lower level, higher level and SEND and all their needs were dually accommodated. Regarding the curriculum changes I think something that needs to be factored in is the pace of instruction during online lessons especially that as I said the engagement factor is a major concern based on data that we get from formative assessments and summative tasks we may go back and change the pacing and the sequence of instructions so if we felt that students haven not mastered the learning objectives because of poor engagement we may go back and revise the concepts or skills to make sure that everyone is on board.</p>	<p>Assessment- thinking about the purpose of assessment is based on feedback and sharing with learners information about the areas that need development-encouraging independent test-takers - showing the link between learning aims and the assessment tools used - including family members using an interactive website like Achieve 3000 and sharing the learning objectives with them to empower their children</p>	<p>What could be better is providing digitalized textbooks not simply sending pdf version of the book. To allow learners to interact actively with the content, answer questions digitally without having to supplement with so many other platforms. Having a digital text book and a touch iPad where learners could type on the screen and continue using their hands, as they struggle now after coming back face to face after two years and they hardly use pens in class.</p>
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<p>TIQ 3: How effective is curriculum delivery in online classes compared to face-to-face? Why?</p>	<p>Honestly from the teacher's point of view curriculum whether it's online delivered online off-line face-to-face I don't know I'm not sure if the curriculum in terms of content affecting their quality of learning because like you know whenever it's face-to-face once the word is said and you missed a lesson there is no way for you to return and repeat that lesson, but with online we provided them with all the power points used during the lesson that with all the links and worksheets. Student for whatever reason Mr online class he or she could have repeated reviewed and even could have seen the recording of the of the live lesson so for me I don't know, I believe online is better in those terms like that is always there is always a chance to go back to the material even if they've missed in class.</p>	<p>Regarding the effectiveness of the instruction or delivery during the online lessons well I believe that there are several variables play here but there were times when I have felt that the lessons have been conducted effectively and the students have grasped the learning outcomes they have completed their tasks other times though I thought that they were disengaged. One competitive edge of online learning over face-to-face instruction is classroom management issues because these issues are reduced to a minimum when the teachers delivering the teacher feels that he or she has more control over the students when they are delivering the lesson tasks they are splitting students in to break up rooms. So yeah it's really depends on different variables that writing lessons have been more effective during online lessons because focused on task on the task at hand and at as I said before you wouldn't find students are talking or chatting or acting up online.</p>	<p>Delivery in online lessons with lots of tools for differentiation and engagement is an advantage in online classrooms with more technological integration. I will definitely say that online tools have a better effect on teaching than delivering in person.</p>	<p>Of course the best thing is attendance because even when students have other things to do they still join class anywhere they are. Even when they are abroad and check the content and material shared by teacher. Also the gamifying aspect of online learning using different online platforms and LMS like Kahoot, Nearpod, Block it. The game format of teaching is a plus and learners enjoy them because they get instant answers towards the end.</p>
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<p>TIQ 4: What could improve the online teaching experience for you?</p>	<p>Well I can only say that I honestly hope it will not happen in the future again I mean we wouldn't be in the same situation. I would honestly prefer face-to-face old style cause again with my age group and that's the only experience that I have is with upper primary grade. 10 and 11 years old students are not serious enough. They are not responsible for their education enough to take that whole online education seriously and do what is necessary. The engagement is not there and the proper attitude towards the whole thing is absent. So even you know when the students are supervised by their parents during the online lesson like there is an adult somewhere it's totally different when the kids are left by themselves. The students when they are completely alone in most of the cases they will just play something on the side or check their Instagram, or anything else that would distract them in the lesson.</p>	<p>For me another part would be more participation from the parents they need to take online education seriously. Could make the experience better for the future I think that in the future students are going to become experts in online lessons they are going to be more well versed in the different online platforms they will have less troubleshooting issues like they will have more mastery of the different platforms that we are using and in times it will be more apps and more collagen-based learning resources available for students. The more we invest in this technology the better the learning experience is going to be for us as educators that for our students as well as overtime both of us are becoming better finding our feet in this whole online learning experience home it would also definitely help the students adhere to turning the cameras on because this is something that culturally still not accepted here in the UAE especially for ladies to be on camera. Or at least are physically present because on the other end of the screen you never know if the student is physically present in or out there doing something.</p>	<p>Better connection with learners and more techniques to improve teacher-learner rapport. If schools can vanquish the engagement issues then everything else is secondary. Students' allocation in classes and allocation of SEND students in class with no support from school affect the efficiency of addressing learners' special needs. Like assigning SEND teachers in online classes as normally takes place in traditional classes. Train teachers and invest in their professional development.</p>	<p>Learners should open their camera at all times or a continuous face recognition system because teachers do not know who is setting on the other side of the computer. This also needs to be controlled teachers. Also, schools should convert material to electronic text books, because teachers spend a lot of time converting material from text books online and with more workload, teachers end up sharing the pdf version and this is not as engaging for learners as it should be.</p>
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Comments		<p>Using Brain pop, slides, Kahoot games and other platforms help in raising engagement and practicing different skills. These websites were integrated by teachers' not necessarily the school which means that schools do not provide sufficient platforms for online learning and teaching. In comparing between American and British systems, the British are more organized especially when the pandemic started students opened cameras in exams and put mirrors to show no phones or notes. They used Person's version of text books which shows better investment in technological integrations. Unlike American schools that relied on Teams for live lessons and slides.</p>	<p>The educational system needs to be proactive in forecasting and anticipating future needs</p>	
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