Remote Learning: Fostering Learning of 21st Century Skills through Digital Learning Tools

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Abstract
The shift from in-person to remote learning has have led to crisis management. Teachers find it more challenging as content designing and presentation have to undergo drastic change. Though many face-to-face methodologies could be adapted in the online context, Yet, "one size fits all approach" cannot be standardized in remote learning setups. The critical challenge in this 'new era' is to make the learners motivated, productive, and responsible. The study aims to find the impact of four digital tools: Discussion Forums, Kahoot, Padlet, and FlipGrid in fostering 21st-century skills and identify the existing gaps between Remote Learning and instructional activities in the EFL context. The study adopts a quantitative approach. First, it tries to examine the utilization of the digital learning tools under Blackboard by the faculty at the Department of English at Prince Sattam University and find out the impact of digital tools in fostering 21st-century skills on the undergraduate students pursuing level six. From the results of the study, it is evident that digital learning tools empower learners. The study recommends significant changes in the pedagogies. Finally, the study suggests rubrics be taken into consideration while choosing digital tools to foster 21 st century skills.

Keywords: digital learning tools, EFL, FlipGrid, Kahoot, Padlet, 21st-century skills

Introduction

According to Trilling and Fadel (2009), 21st-century skills reflect the idea that "the world has changed so fundamentally in the last few decades that the roles of learning and education in day-to-day living have also changed forever". Thus, there is a need to train the learners in non-cognitive, or 21st Century, skills (Critical Thinking, Communication, Collaboration, and Creativity) to prepare for the job market. Moreover, with the shift from face-to-face sessions to remote learning, the pedagogical norms have been revolutionized. 'Lecture", "Seminars" have been taken over by "discover", "explore", "share", and "apply". Remote learning has also brought about significant changes in the attitudes, and perceptions of EFL learners. Academic challenges combined with psychological, and emotional challenges have been having a negative impact, increasing passiveness and anxiety. "Dumping large amounts of text onto a website cannot be the solution". (Islam, Beer & Slack, 2015). Zain, Abdullah, Adnan & Nazri, 2020) developed a module by integrating 21st-century skills in the core of learning. It was evident that both students and teachers were benefited. In addition, Kristianto (2020) employed a project-based teaching model and found that students could sharpen their 21st-century skills: creativity & innovation, critical thinking, problem-solving, communication, and collaboration apart from reading and speaking skills. Thus, the shift in place and lowered affective filters have thrown challenges before the teachers, making them think of diverse innovative, and interesting ways to keep the learners motivated. A variety of digital learning tools are being used by the teachers to support active learning and meaningful student engagement online. Akkan, Guven, and Cakiroglu (2012) consider digital learning tools to be integral to fostering engagement, self-efficacy, and ownership of learning. "Flipped or blended classrooms that primarily use a variety of tech tools to deliver and explore content, tools such as video, PowerPoint, and online discussion forums, may help to spark learners' interests. These alternative approaches to the traditional stand-and-deliver model which often lacks technology, give students a sense of freedom that boosts the desire to learn". (Goodwin & Miller, 2013). Ceylan and Kesici (2017) from the experimental study on learner motivation in blended learning setup concluded that digital learning tools have a positive impact on academic success. (Koh, Chai, Benjamin & Hong, 2015)state that the ability to use digital learning tools to create knowledge, innovative processes, and products; engage individually and collectively in cognitive activities to understand and solve conceptual problems and solve problematic situations in digital environments. Merz (2010) supports the incorporation of web 2.0 tools to build connections rather than competition between and among students. (Shear, Novais, Means, Gallagher & Langworthy, 2010)state "when students use information and communication technology (ICT) for learning, they are designing, creating, representing, evaluating, or improving a product, not merely demonstrating their knowledge. In doing so, they need to choose how and when to use the ICT as well as know-how to recognize credible online resources". Thus, remote learning has shifted the responsibility of learning to the students. The learners are provided with synchronous and Asynchronous environments and it is left to the learners to make the utmost of it.

One of the most essential 21st-century skills which need to be honed is communication skills. NEA(2014) defines communication as one's ability to "articulate thoughts and ideas effectively; use oral, written, and non-verbal communication skills in a variety of forms and contexts; listen effectively to decipher meaning, including knowledge, values, attitudes, and intentions; use communication for a range of purposes; use multiple media and technologies, and know-how to assess the impact and their effectiveness a priori, and communicate effectively in

diverse environments" (p. 14). Since conversations and interactions among learners and instructors play an important role, the transmission model by the teachers is gradually being replaced by a range of communication technology tools that enable and motivate the learners to express their ideas and thoughts. Riegel & Kozen(2016) consider the shift from traditional to Virtual sessions to be beneficial in terms of attaining and becoming proficient in the 21st-century skills i.e. communication, collaboration, critical thinking, and problem-solving, and creativity. The application of innovative teaching and learning methods is critical if we are to motivate and engender a spirit of learning as well as enthusiasm on the part of students

Discussion forum: It is an effective tool as it aids in knowledge co-creation through collaboration, discussion, and production. It facilitates communication and interaction between students, their peers, and tutors. Online discussion forums are considered an extension of traditional learning that promotes dialogue, reflection, knowledge construction, and self-assessment. Online discussion forums are beneficial in knowledge construction to enable flexible and independent learning. According to Seethamraju (2014), threaded forums are one of the most commonly used environments for online discussion. Jonassen and Kwon(2001) observed satisfaction and quality of the discussion were higher for members of the online group when compared with face-to-face groups.

Another important 21st-century skill preferred in the job market as an employability skill is collaboration. It develops healthy competition and improves learners' conflict resolution skills. According to Resta and Laferrière (2007), four instructional motives justify the use of technology as a way of introducing collaborative learning in the classroom. First, it helps students to be ready for the knowledge society by increasing their collaboration skills and knowledge creation. Second, it contributes to enhancing students' cognitive performance and promoting deep understandings of key concepts. Third, it provides the teaching process with a higher flexibility of time and space for collaborative learning, and fourth, it promotes students' engagement in knowledge creation. Many technology tools and resources allow students collaborative opportunities that are not possible in traditional instructional environments. (Bouden, Hurt & Richardson, 2017). Similarly, Torun; Stevani, and Putro (2020) emphasize collaborative learning and the incorporation of digital tools.

In a webinar organized by the University of Bahrain, Dr. Keith shared the idea of forming collaborating partners for speaking classes. The advantage is to have learners collaborating from across the globe. In addition, EFL learners would be greatly motivated and benefitted by conversing with the learners who are native speakers. Vis-a-vis learners who are native speakers will have the opportunity to interact and develop their communication skills and develop cultural awareness. The use of breakout rooms can be beneficial in enabling the learners to collaborate and come up with a better piece of work. The instructor can invite the whole class or have groups of students assigned to different time blocks. The instructor can also Pre-load activities into breakout rooms ahead of time. This can be an effective way to get learners to work together on a language-based project in smaller groups. Once the task is completed they can get back into the main room and present their project to the larger class. It has been rightly said that group work leads to "dream work." In addition, many collaborative digital tools support remote learning.

FlipGrid is a video-mediated communication (VMC) tool that encourages discussion and engagement and promotes long-distance collaboration. FlipGrid is useful for project-based learning modules. The grid is created by the teacher and students upload short videos as responses using the link. The user interface functions like YouTube, Instagram, and Snapchat. Students are notified when new content is uploaded. The duration of the video can range from thirty seconds to five minutes. Students can pause while recording, and opt for retakes until they contended to upload their video. When students view their oral presentation video, it will stimulate a recall of performance, which will encourage students to reflect on their presentation (Ahmad & Lidadun, 2017). The ability to pause and re-record videos also helps students to practice communication of their ideas before posting. (Stoszkowski, 2018).

Padlet is another effective tool that allows creative collaboration with Hypermediality (audio, video, and textual). Padlet offers different collaboration options, such as inserting comments on others' posts or reacting with a voting system. These options provide opportunities for online dialogue and even for peer assessment because students have immediate access to the reactions of their classmates to their contributions to the wall (Martin, 2019). According to Fisher(2017), Padlet is a live online bulletin board that has been described by its developers as "a living, breathing webpage" and "the easiest way to create and collaborate in the world."

Kahoot: It is another popular digital tool that enables teachers and students to create games quickly and easily and in a professional template complete with music and color. The use of KAHOOT games achieved outcomes beyond the simple fun of a game. The jocular and low-stakes environment of the KAHOOT! The game combined with the camaraderie of competition enabled substantive, heartfelt, and student-centered discussions of academic integrity that could never have been achieved through the usual dry, teacher-led lecture about plagiarism. (Zucker and Fisch, 2019).

Another skill that needs to be fostered is creativity. In this fast-paced world, thinking out of the box is always appreciated and therefore the instructors are required to provide opportunities to the learners to use and develop their creativity. Making videos on the content material provided by the teacher not only makes the sessions interesting, bringing in variety and innovation but, also motivates the learners to contribute and indulge in active learning. Remote Learning can provide ample opportunities for independent and self-directed learners to take control over their learning (Herold, 2017; Redmond et al., 2018). Subramani and Iyappan(2018) stress the application of innovative teaching and learning methods to motivate and develop a spirit of learning among students. Thus, if designed with the utmost care, remote learning can be a great way to boast self-directed learning. Learners get ample opportunities to not only reflect on the tasks performed but also identify their strengths and weaknesses. Since learners have different learning styles: visuals, auditory, kinaesthetic, logical, intrapersonal, etc, they adapt their learning styles in the learning process.

Theoretical framework
Learning becomes meaningful and engaging with the help of effective and efficient instructional designs. This way learner involvement and motivation are promoted.
The theory of constructivism introduced by Piaget (1958) promotes active learning as it revolves around student-centered learning. The theory gives a lot of importance to previous knowledge or

schemata to create something new. Hence, each learner based on his previous knowledge and experiences will create something unique when compared to his peers. The theory stresses learning as an active process. Real learning will take place when the learner participates and contributes. Mere listening to the lecture is a passive activity and will not be beneficial. Therefore, they need to engage themselves in discussion, activities, etc. The theory also stresses learning as a social activity. This means People around the learners have an impact on their learning. This suggests that group activities or peer learning can enhance learning. Conversations and interactions with group activities can be beneficial in retaining the information for a longer time. In addition, the theory gives a lot of importance to motivation. Teachers have to come up with innovative ways to engage the learners and keep them intrinsically and extrinsically motivated. Most of the traditional sessions did not provide ample opportunities for the learners to indulge in constructive learning. Learning can be made effective and productive by focussing on the concept of Constructivism which means co-construction of knowledge developed from student-student and student-instructor interactions. Constructivism enables the instructor to harness or tap the learners' potential by providing suitable learning environments in the form of extensive social interactions, self-assessment, and independent work to channelize their previous learning, already formulated knowledge, ideas, and understandings.

Collaborative learning Theory Vygotsky (1978). This theory is also called Social constructivism. It gained prominence in the twentieth century and research shows that the rate of learning and retaining was faster and longer among learners working in pairs and groups. According to Collaborative learning theory, community places a central role, and the people around the student greatly affect the way he or she sees the world. The Zone of Proximal Development is based on the application of problem-solving skills at an individual level and in a pair or group. Therefore it encourages active learning through discussions, debates, interactive instructional strategies, individual learning projects.

Another theory based on similar principles is the "Community of Inquiry" (CoI). This concept was introduced by early pragmatist philosophers C.S.Peirce and John Dewey. It promotes teamwork and emotional connectivity among learners as learners support each other due to their collective identity. It also states that learners improve and are determined to give their best as healthy competition prevails among them. Also, appreciation and acknowledgment by peers could be a great source of extrinsic motivation thus, resulting in team spirit and strong interpersonal skills: necessities of the job market. This theory has been widely accepted. (Garrison, Anderson & Archer, 2000)state that there is a relationship between the three presences and students' perceived learning, satisfaction with the course, satisfaction with the instructor, actual learning, and sense of belonging. (Huang, Hurt, Richarson, Swan & Caskurlu, 2020) state that to make the community of inquiry an effective learning process, teachers can introduce icebreakers, learners should be made to share anecdotes, experiences in discussion boards. Collaborative activities could include projects, discussions on case studies to come with solutions, open-ended questions, introducing self-assessment activities, and providing audio and video feedback.

A byproduct of Collaborative learning theory is Problem-based learning (PBL). It promotes active learning through engagement in real-world and meaningful projects. It focuses on the demonstration of knowledge and skills by solving a real-world problem or answering a

complex question. It encourages critical thinking, collaboration, creativity, and communication skills: the most desired 21st-century skills. It stands for channelizing the creative energy of the students while they investigate and respond to an authentic problem Savery and Duffy(1995). According to (Duch, Groh &Allen, 2001), to make Problem based learning an effective learning process the teachers should take into consideration some factors while selecting problems for instance: The problem should sound interesting and motivate students to analyze, it should be closer to real-life situations so that the learners come up with authentic solutions and should be in a position to justify, it has been based on what they have learned before so that they can think logically and co-relate and to give the learners a direction to think a few open-ended questions should be asked.

Online Collaborative Learning Theory introduced by Harasim (2012) is a concurrence of both constructivist approaches to learning and the development of the Internet. The theory is based on the concept that discussion is central to learning, and textbooks and other materials are supplementary. Students are encouraged to collaboratively solve problems through brainstorming. It supports student-centered learning and the development of high-level skills such as critical thinking, analytical thinking, synthesis, and evaluation. Harasim states that the construction of knowledge takes place in three phases: a) Idea generating: the brainstorming phase, where divergent thoughts are gathered b)Idea organizing: the phase where ideas are compared, analyzed, and categorized through discussion and argument and c)Intellectual convergence: the phase where intellectual synthesis and consensus occurs, including agreeing to disagree, usually through an assignment, essay, or other joint pieces of work. Since OCL focuses on conversational learning, it encourages online discussion forums as they have a few advantages, for instance, they are asynchronous and learners can log in anytime. Moreover, the provision of threaded connections enables the learners to follow multiple discussion topics.

All the theories discussed above are student-centered and promote active learning. Several key 'best' practices have been identified as contributing to constructive learning. These include: facilitating a cooperative learning environment through discussions and debates, encouraging active learning by applying interactive instructional strategies, individual learning projects, and problem-based learning. Most of the digital learning tools with a social constructivist approach to learning. The study sets around the following research questions:-Why is it essential to foster 21st-century skills?
-How do digital learning tools foster 21st –century learning?
-What are the perceptions and attitudes of the learners towards digital learning tools?

Research Methodology
  The present study adopts a quantitative approach. The study relies on data documented by the eLearning committee and an open-ended questionnaire. First, nineteen faculty members belonging to the Department of English submitted reports to the E-learning committee at three intervals. The first was in the period of initiation, the second was the period of Exploration, and the third was the period of adaptation. In addition, a Questionnaire comprising of nine statements was distributed to thirty-five students pursuing level six at the undergraduate level at Prince Sattam bin Abdulaziz University, Saudi Arabia.

Based on the data submitted to the E-Learning Committee, the study compared the data related to the usage of Interactive tools by the Nineteen members and calculated the Mean (M) and Standard Deviation.

Comparison between three stages

Table1. *Blackboard Tools used by the PSAU Faculty*

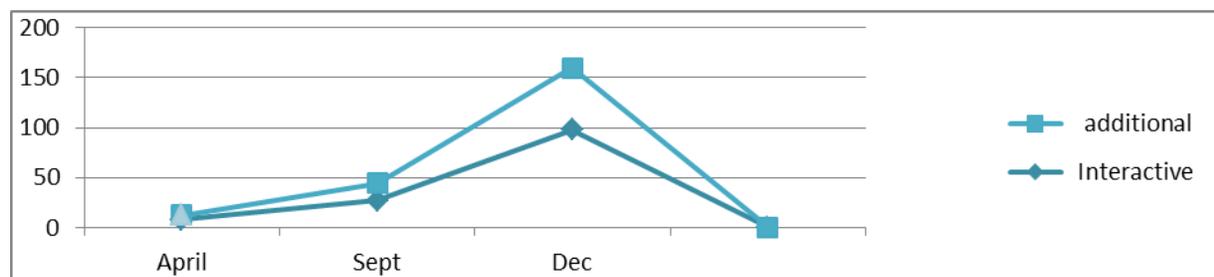|	Online sessions	Discussion Boards	Interactive tools	Additional Tools
April	300	15	4	4
September	311	62	10	17
December	329	77	36	62
Mean (M)	313.3	51.3	16.6	27.66
(SD)	-07	-06	-14	0

Figure 1. Utilization of digital learning tools.

Period of Initiation (shifted to remote learning): From April 1st -30th, 300 Online sessions were conducted through Blackboard Ultra. Fifteen times discussion Boards were used, four times interactive tools (wikis, journals, blogs, break out rooms) were used, and four times additional tools that were not a part of Blackboard LMS were used.

Period of Exploration (explored and incorporate a few digital learning tools): From Sept 1 -30th, 311 Online sessions were conducted through Blackboard Ultra. Sixty-two times discussion Boards were used, ten times interactive tools were used, and seventeen times additional tools that were not a part of Blackboard LMS were used.

Period of Adaptation(introduce new pedagogies.): From Dec 1 -30, 329 Online sessions were conducted through Blackboard Ultra. Seventy-seven times discussion Boards were used, thirty-six times interactive tools were used, and sixty-two times additional tools that were not a part of Blackboard LMS were used.

To find out the impact of digital learning tools in fostering 21st-century skills, Thirty-five students pursuing level six were introduced to four digital learning tools (Padlet, discussion forums, FlipGrid, and Kahoot. A humanistic approach to teaching was adopted to foster 21st-century skills. Students were encouraged to hone their communication skills, collaborate and

develop their critical thinking and Problem-solving skills by reasoning, formulating judgments, and making decisions in creative ways.

Figure 2. Types of Learner Interaction through Digital Learning Tools.

Table 2.*Impact of digital learning tools on learners*

		TA	A	N	D	TD
1.	Digital learning tools enhance learning.	31	4	-	-	-
2.	Digital learning tools motivate to learn more	32	3	-	-	-
3.	Digital learning tools provide more learner autonomy	28	2	5	-	-
4.	Digital learning tools make the learner more responsible.	26	4	5	-	-
5.	Digital learning tools help to improve problem-solving abilities	22	7	6	-	-
6.	Digital learning tools provide more opportunities	28	5	2	-	-
7.	Digital learning tools boost creativity	34	1	-	-	-
8.	Digital learning tools help to communicate effectively	29	6	-	-	-
9.	Digital learning tools do not require much orientation and are easy to navigate.	17	2	4	7	

Discussion

Through the analysis of data documented by the e-Learning committee and the open-ended questionnaire, it is evident that the period of Initiation (initial days): March to May were marked by uncertainty and pressure to deliver. Most of the members in the department hardly used interactive tools. The findings are in line with the observations made by (Kamenetz; Martin 2020). The figures for online sessions have been on a higher side as a quick training session was conducted by the Quality Committee to just begin the sessions. The sudden shift without preparation harmed the teachers as well as the students. During the Period of Exploration (second half). From July to September, teachers, and learners slowly started getting accustomed to digital learning tools. The findings indicate that there is an increase in discussion board tasks and interactive tools both of Blackboard and additional. This initiative by the teachers is indicated in the findings. The results are in line with Orlando and Attard (2015). The students were gradually becoming more engaged and teachers were exploring different ways to motivate the learners and

enhance learning productivity. Teachers made use of interactive tools of blackboard: Wikis, Journals, Discussion Boards Breakout rooms, and additional video-mediated tools in their effort to make the learning process interesting thus shifting from convergent approaches to productive /divergent approaches like collaboration, gamification, project-based learning, constructive learning, flipped classrooms, student-centered sessions. Teachers who in traditional classrooms had been solely focussing on language skill development, and ignoring the 21st-century skills: Collaboration, Creativity, problem-solving, communication, and digital skills were making efforts to maintain a balance between cognitive skills and soft skills due to plenty of interactive platforms provided by digital technologies. Thus, preparing the learners simultaneously to have better opportunities in the job market. The results are in agreement with Piopiunik et al. (2020). Thus, the findings indicate that the learners were provided ample opportunities to hone 21st-century skills. The third stage (from October to December) came to be considered as a blessing in disguise due to proper selection and utilization of digital tools thus, leading towards progressive learning.

Impact of digital learning tools in fostering 21st-century skills:
Based on the responses for the statements the analysis are as follows:
1.Do Digital learning tools enhance learning? 31 out of 35 students agreed and the remaining four agreed. None of them were neutral or disagreed.
2.Do Digital learning tools motivate to learn more? 32 agreed and the remaining three agreed. None of them were neutral or disagreed.
3. Do Digital learning tools provide more learner autonomy? 28 agreed, two agreed five were neutral and none disagreed.
4.Do Digital learning tools make the learner more responsible? 26 totally agreed, four   agreed and five were neutral.
5. Do Digital learning tools help to improve problem-solving abilities? 22   totally agreed, seven agreed, six were neutral and none disagreed.
6.Do Digital learning tools provide more opportunities?28 totally agreed, five agreed, two were neutral, and none disagreed.
7. Do Digital learning tools boost creativity? 34 totally agreed, one agreed, and none was neutral or disagreed.
8. Do Digital learning tools help to communicate effectively? 29 totally agreed, six Agreed and none was neutral or disagreed.
9. Do Digital learning tools do not require much orientation and are easy to navigate? 17 totally agreed, two agreed, four were neutral, and seven disagreed.

    The results indicate that digital learning tools have a great impact on students. There is a positive shift from teacher-centered to learner-centered pedagogy. Remote learning has paved way for increased responsibility on the part of the learners giving them ample opportunities to hone their 21 st century skills, thereby, preparing them to face the future job market demands and global competition. Moreover, it is a good opportunity for the instructors to include not only cognitive but also non-cognitive dimensions in their content. Thus, integrating core academic knowledge, critical thinking, and social skills in teaching and learning. It is thereby imperative that the instructors connect the curricula with the real world to support student participation, motivation, and understanding for the academic subjects, as well as preparing them for adult life.

Conclusion:

A sudden shift from face-to-face to virtual sessions though challenging has given a new dimension to the teaching /learning process. Traditional teaching methods which were adopted for centuries became a topic of analysis and the limitations of a good number of methods came to be highlighted. Remote learning has been instrumental in creating a quest for diverse methods to not only keep the EFL learners motivated but also, enhance engagement through a variety of digital tools. Inclination to move towards divergent approaches has have proved to be beneficial in supporting collaborative learning, creativity, communication skills, and digital literacy. At the same time, Remote learning has increased student responsibility. Learners are being provided with synchronous and asynchronous environments and it is up to them to use judiciously. In addition, Remote Learning has increased the scope for the learners to apply their metacognitive strategies. Criteria to select digital learning tools:

1. The tool should serve the intended purpose/classroom use.
2. Should be flexible to accommodate different class sizes.
3. Should be easy to use and provide guidance through user engagement.
4. Should provide timely help.
5. Should support Hypermediality (audio, video, and textual communication).
6. Should engage learners in a flexible and nonlinear way.
7. Should support multiple learning approaches and engage all types of learners.
8. Should require limited equipment to accommodate a broad group of users.
9. Should be easily embedded within the institutionally backed Learning Management System(LMS).
10. Should preferably support offline mode.
11. Should be operating syestem and device-agnostic(accessible through a browser or downloading the "app".
12. Should have backup and export facilities.

Recommendations

-Since most of the convergent approaches do not provide ample opportunities for constructive learning, a shift towards divergent and productive approaches is inevitable.
-Remote learning with effective and efficient instructional designs and appropriate digital tools can be a great way to make learning meaningful and engaging.
-Active, social and collaborative, and experiential and project-based learning can keep the learners motivated.
- Balance between academic and soft skills group activities have to be encouraged.
- Collaborative tasks could be beneficial in promoting peer learning.

About the Author

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