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TEACHING AND LEARNING OF ENGLISH AS A SECOND LANGUAGE USING ICT  
TOOLS IN TURKISH K-12 SCHOOLS

MA Thesis

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### **Abstract**

The use of ICT in classroom for the teaching of English as a Second language has gained traction over the last couple of decades. This study investigates teaching and learning Of English as a Second Language using ICT tools through the lens of the affordances and strategies that can be exploited in delivering distance education in Turkish K-12 schools during the Covid-19 pandemic. The principal findings of this research are that Microsoft Teams and Blackboard provided the most affordances for K-12 EFL teachers; and that collaboration and participatory learning are key ICT enhanced pedagogy that should be modelled in online classes. In addition, constructivism, as a theory of learning, was found to play a vital role in motivating and engaging learners.

Keywords: ICT tools, ICT-enhanced pedagogy, Affordances, Collaboration, Constructivism

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## Introduction

Using ICT tools in k-12 classrooms is gradually becoming part and parcel of English as a Second Language (ESL) education worldwide in this day and age. Studies on the use of ICT tools for ESL in Turkish k-12 schools represent a growing interest on how they can be used meaningfully to mediate teaching in the classroom so as to make technologically supported learning avenues available to the students (Aduwa Ogiegbaen, 2009; Ardiç & Çiftçi, 2019). According to Ardiç & Çiftçi (2019), Information and Communication Technology (ICT) refers to those technologies that give access to communication through telecommunication. Similarly another researcher Majumdar (2015) saw ICT as the means and the effective utilization of pedagogy a major goal when it comes to the use of ICT in education. Ardiç & Çiftçi (2019), also cited examples of these tools to include the Internet, wireless networks, cell phones, and other communication mediums. According to Yildiz (2020b), some of the challenges that are relevant to ESL classrooms range from understanding the 21st-century learner's needs, the shift in the pedagogical approach, and the way emergent technologies can be used efficiently. During the time of Covid-19 crises there was a sudden shift of normal classrooms into e-classrooms, that is, educators had to shift their entire pedagogical approach to tackle new market conditions and adapt to the changing situations (Dhawan, 2020). ICT tools in this study includes technology and also consist of both hardware and software- and I would be using these terms (including digital tools) interchangeably henceforth.

As a k-12 ESL teacher who has taught various levels, majorly Cambridge English classes, one of the major challenges I face most times is how to use the right pedagogical approach in motivating and engaging my students. This has led me to read up various books on Active Learning, Engaging and Motivating of Students- to mention but a few. Although, I have been able to mitigate the challenge over the years through experience and in-service training, I found myself in uncharted territory when the Covid-19 pandemic hit. What I was supposed to teach my students face-to-face during classes was now going to be somehow replicated online by using ICT tools. I was not in the boat alone as many of my colleagues had faced the same challenge too. I could remember asking myself this question – What would be the suitable pedagogical approach in getting students engaged during classes?. This got me pondering and has led to this thesis research in which I would be exploring the various affordances, theories of learning and strategies so as the pinpoint to the one(s) that best support the teaching and learning of ESL by using technology-based tools. Since the Corona virus has made institutions to go

from offline mode of pedagogy to online (Dhawan, 2020) , it has become expedient that the most suitable pedagogy is employed in delivering online or distance education since accessibility, affordability, flexibility, learning pedagogy, being a life-long learner, and policy are some of the arguments related to online pedagogy (Dhawan, 2020).

### **The Impact of ICT Tools on ESL Learning**

The impact technology has had on language learning has been studied by many researchers including Heift et al. (2019) who found that the ideas of making use of technology for language instruction started gaining traction in the late 1960s when a few researchers and teachers realized that computers and technology were significant pedagogical tools. A study conducted related to the use of ICT tools in Turkish schools is that of Hol & Aydın (2020). In their study, they investigated the beliefs of Turkish EFL teachers (from across State, Private and Colleges) about their use of technology in the classroom and the factors affecting such beliefs. For their study, 563 Turkish in-service EFL teachers participated in the online survey beliefs questionnaire which was used to collect data. After their analysis, Hol & Aydın (2020) found that teachers held positive beliefs on their use of technology in the classrooms when it relates to importance, use, expertise and context. Also, Carstens et al. (2021) in their research studied the effects of technology on students learning in k-12 with a survey sent to k-12 educators in a local school district in central Illinois, United States. Interestingly, their outcome yielded more positives than negatives as teachers viewed technology to have more positive impacts than drawbacks. Perhaps, more germane to their findings is that going forward, teachers would gain from more personal training on implementing the technology in the classroom so that they feel more relaxed with the inclusion of technology (Carstens et al., 2021). A study which gives impetus to the need to critically examine the pedagogy of ESL teachers in their use of ICT in classrooms is that of Ardiç & Çiftçi (2019) when they mentioned that expertise, external support, perceived capability, beliefs, attitudes, the constructive thinking, and classroom pedagogy had a connection with the use of Internet. However, the teacher's expertise was the most factor that directly affects the use of internet.

Going by these findings, one of the most significant current discussion in the area of using ICT tools in ESL classrooms is whether or not teachers have the right pedagogy to achieve learning goals and properly deliver education to their students online. This is corroborated and supported by the research of Koehler et al. (2013); Nugroho & Mutiaraningrum (2020); and Rahamat (2019) who found that it is widely accepted that

the availability of digital technology creates effective technology-based learning, but the acquisition of teachers' pedagogy and skills are highly necessary to accomplish the full potential of technology integration in language classroom. Furthermore, Yildiz (2020b) claims that in the 21st century, it is important we adapt our current pedagogy and practices into one which concentrates on not just what students learn but how they learn. Suffice to say, it is evident that teachers using ICT in ESL classroom these days need not just concentrate on the glamour, fun and pageantry aspect of technological-based tools alone but to also develop and use the correct pedagogical approach in delivering the materials and content to the students in their classrooms. Otherwise, without the requisite knowledge and expertise needed to effectively engage with technology, pre-service and practicing teachers tend to use it in peripheral, inefficient ways (Kingsley, 2010). Bolstering this assertion, Majumdar (2015), said that although literature provides some evidence of the effectiveness of using ICT in technical considerations, little is known about the learning strategies and pedagogical framework that should be used for education and training. A major case study I would be examining in this research is that of the recent lockdowns we had across the world because of the Covid-19 pandemic. During this period, Turkey was the second country after China to announce nationwide distance education due to the Covid-19 pandemic (Fiş Erümit, 2021). Consequently, schools across Turkey (universities, colleges, and K-12) were closed and all the lessons were transferred to distance education. In this current setup, teacher had to deliver their lessons through synchronous or asynchronous means to their students in different places and at different times. Several studies have been conducted to investigate the use of ICT tools (an ecology of tools) during the pandemic. First, Şenol et al. (2021) recently conducted a research to examine the distance education offered by the universities in North Cyprus during the pandemic. 500 university students and 24 instructors participated in the survey conducted for April 2020 - August 2020. From the overall result of the survey, it was observed that students concurred to 30 out of the 43 benefits they were asked in their questionnaire. In the students view, the online education they had offered them some of the following benefits: education from various universities, increase in students' participation, information is accessible when needed, working is not a problem during learning, information can be accessed anywhere (Şenol et al., 2021). However, they also noted things such as online education helps students become participant individuals in their future lives, students in the educational environment develop positive attitudes towards each other and improve learning performance. And as

per the teachers, using different technology-based platforms and strategies helped them to motivate students and keep their engagement intact. However, they cited the following as the barriers and impediments they faced during their online lectures: internet interruptions, problems of downloading class notes for students, access to online platforms and exams via cell phones, technological incompetencies of students, apathy of students about online education, low student participation and engagement in courses (Şenol et al., 2021). Another study conducted which seeks to look into how the distance education fared during the period of Covid-19 pandemic is that of Fiş Erümit (2021). For her investigation, Fiş Erümit (2021) evaluated the distance education along with its activities during the Covid-19 pandemic in Turkey's Primary, Secondary and High School by interviewing 12 students who were selected using criterion sampling. Evaluating EBA TV, a platform created for schools to support availability of effective materials both at home and in classrooms as well as in all other settings (Fiş Erümit, 2021), it was discovered that the asynchronous distance education and synchronous lessons had both positive and negative results. The major advantages of the EBA TV, according to the students, were that it provided them with learning space and also supported them psychologically by providing them with motivation and support needed during the pandemic. Yet, Fiş Erümit (2021) found the negatives to be the teachers' lack of pedagogical content knowledge, lack of pedagogical competencies, students' neglect of EBA TV programming following the introduction of asynchronous lessons amongst many others. Comparing the aforesaid studies from Turkey, Fiş Erümit (2021) on her part examined the online education in Turkey during the pandemic but didn't go in-depth into the pedagogical aspects of learning on the teachers' side. In the same vein, the study of Şenol et al. (2021) failed to touch on the pedagogical underpinnings that helps teachers to deliver the content and materials in their ICT classrooms appropriately. Nevertheless, there was another recent interesting study conducted by Liu et al. (2017) which came so close in examining the pedagogical beliefs of EFL teachers in their use of ICT in China. Revising the Technology Accepted Model (TAM) by including teachers pedagogical beliefs, the researchers found that the EFL teachers pedagogical beliefs were more constructive than transmissive. Although this study seem to touch on the issue at hand, it hasn't answered the "whole" question since the 202 Chinese EFL teachers interviewed in the study were from the university residing in the coastal areas across China. Besides, the instruments used in the questionnaire, served to the teachers, related only to pedagogical beliefs and didn't touch on ICT-related behaviour. This research addresses the ICT

related behaviours and look into how teachers can better integrate technology into their online classes. That said, Liu et al. (2017) still offers some insight into what is to come in this study because the beliefs of teachers are important for their pedagogical reasoning and ICT-related pedagogies will require evaluating teachers' ideas, values, belief system and the thinking that leads to concrete observable elements in practice (Webb & Cox, 2004). Going back to the two previous studies mentioned, Fiş Erümit (2021) & Şenol et al. (2021), both were broad with the instruments they used in testing for the research as it encompasses various subjects from all fields of learning. To address this knowledge gap, the present study examines the pedagogical approaches of teachers toward information and communication (ICT-enhanced pedagogies) in regard to the online education delivered in k-12 schools during the Covid-19 pandemic in Turkey.

### **Pedagogical Approaches in the Use of ICT Tools For Teaching and Learning**

According to Dhawan (2020), the Corona Virus has somehow pushed institutions to go from offline mode of pedagogy to online mode and Yildiz (2020a) has said that students of the 21st-century engage and learn differently than ever before because the new age calls for the need to adapt our current pedagogy and practices into one which is centred on not just what students learn but how they learn. Before delving into the several pedagogical approaches that enhances the correct use of ICT in education (English as A Second Language Class), it will make sense if we provide the definition for the term “pedagogy”. According to Somekh (2007), pedagogy is so complex when evaluated at the level of the classroom. Hence, the term “pedagogy” encompasses a wide array of elements when it comes to teaching. More importantly, when it comes to language pedagogy and ICT-related ones. One of the first work that examined pedagogy related to technology that involves the process of teaching is that of Shulman (1987) as cited in Webb & Cox (2004). In his research, Shulman (1987) looked into the different process involved in teaching and also digged deep into how knowledge is being transformed so it can be taught. Furthermore, Shulman’s model incorporated the teachers’ knowledge that pertains to curriculum, the learners and pedagogy. Although, Shulman’s work was mainly about knowledge instead of beliefs and ideas, there is evidence from literature that the beliefs, values and ideas of teachers may influence their practice (Moseley et al., 1999; Wilkins, 2008). Building upon these knowledge, it is obvious and imperative to have a holistic approach to examine different methodologies used in language learning as it concerns ICT-mediated pedagogies. Since, we are talking about English as a second language here, it would be appropriate to define what language pedagogy is. According to Jules, J., & Belgrave, K. (2020) as cited in Gülmüs & Cansever (2021), Language pedagogy is defined as a definite theory and philosophy which serve as a guide and drives the instruction used in teaching language. To this end, it is obvious that the teaching of English as a Second Language requires that the right pedagogy be applied and bearing in mind the context, learners, content, and the use of Information Communication Technology (ICT) since pedagogy cannot exist alone as it should go along with content (Majumdar, 2015). To put things into context, at the heart of every good teaching with technology are three core components: content, pedagogy, and technology, with the relationships amongst them also taken into account (Koehler et al., 2013). As a result, the use of ICT in pedagogy should be one that helps to improve learning and engage learners.

It should also promote collaboration, motivate, foster enquiry and exploration, and help to create a new learner-centred learning culture (Dhawan, 2020; Majumdar, 2015). The use of ICT in education and learning requires a high level of collaboration and this simply means collaboration in the design of a course, teaching in Teams, joint development of resources and making resources available to everybody (Laurillard, 1993) and there is also a need for teachers to have positive attitudes towards the application of skills such as collaboration, authentic materials, technological planning so as to affect the flow of their lessons (Kavanoz et al., 2015; Tondeur et al., 2018). For instance, ICT-enhanced pedagogy (internet to be specific) has a lot to offer learners if teachers can use its many affordances to pedagogically transform the way students learn. Paraphrasing the words of Somekh (2007), it is not internet that has changed knowledge and communication systems, but rather the creativity and skill of human designers and users who completely explored those affordances by utilizing their emerging mental models to imagine new possibilities. Hence, we can thus say that the more flexible technology tools are, the more affordances they will have when they are to be used by teachers. The teachers in this case are the human agent and the skills and imagination with which these tools are used will determine the latent possibilities they yield in helping the pedagogical formation in the ICT-mediated classroom. Not only that! A major affordance of the internet is that it always makes knowledge available for both the learners and the teachers. In other words, it makes knowledge fluid but in a less packaged form. Based on this premise, the responsibility of the teacher then is to ensure the availability of ICT affordances in their classroom, prompt students to use it while also explaining and demonstrating with it. Ultimately, in order to effectively use ICT for distance learning, teachers of English as a Second Language are to first of all recognise the specific affordances that the technological tools provide (Haines, 2008) by familiarising themselves with it (Stockwell, 2009) and evaluate beforehand how they can meet their learning objectives because while the characteristics of successful teachers is not so different across online and traditional classroom environments; and the traditional roles of teachers can be transferred to the online environment (Kurt et al., 2022a; Zhang & Lin, 2020), the affordances and drawbacks of the new learning setting requires that teachers adapt to new roles for creating effective and meaningful learning experiences (Kurt et al., 2022b; Martin et al., 2019; Rapanta et al., 2020).

### **Constructivism and ICT-based Tools for Teaching and Learning**

According to Ertmer et al. (2012) & Petko (2012), teachers who are active and innovative in their instruction with technology are closely linked to constructivism. Duffy & Cunningham (1996, p. 2), in their study defines constructivism as: "...an active process of constructing rather than acquiring knowledge, and instruction is a process of supporting that construction rather than communicating knowledge". The central idea behind constructivism is that learning in human is constructed and that learners build the new knowledge gained upon the foundation of previous learning (Xu, 2020). Meanwhile, Pritchard & Woollard, (2010) stated that constructivists hold the believe that since knowledge can be created or recreated- the need for the learner to be actively involved in the learning process is necessary. The use of technology such as smart phones, laptops, tablets and so on in an ICT-enhanced EFL classroom has been found to have positive influence on students' opportunity to study English (Mokhtar, 2018). This confirms previous studies which found that students perform better in ELT if multimedia technology is integrated into the teaching and learning (Cavalheiro, 2015; Nguyen et al., 2012). The different forms of constructivism that we have are personal constructivism, radical constructivism, and social constructivism. Since teachers' use of technology for teaching and learning relies on the cultural, social, and organizational contexts in which they work and live with other people (Liu et al., 2017; Somekh, 2007), and ZPD stresses the role of social interaction and the part community plays in building cognition (Yildiz, 2020a), as a consequence- the works of Levy Vygotsky (1978)- Zone of Proximal Development and Social Theory- plays a central role in this study (Vygotsky, 1978). Learners, in the Zone of Proximal Development, are on the brink of understanding something, as they are about gaining problem solving skills by themselves (Kong-in, 2020) and it is also a bridge to building communities of active learners through an understanding of social learning theories (Yildiz, 2020a). Vygotsky's theory centres on collaboration which ICT-mediated classrooms provide. For example, platforms like Zoom, Blackboard, Microsoft Teams, Google Classroom and so on are built with affordances which allows the teachers to create groups and assign students to them. Moreso, collaboration promotes the engagement of student and crucial in language learning development (Kirsch, 2016). The teacher can also decide to switch the students from one group to another whilst also moving around to monitor the activities in each of the group. From this standpoint, there would be learning going on

these platforms and not just teaching. This is supported by the study of Jha (2017) as learning is a collaborative procedure which is distinguished between two developmental levels. With this kind of setup, the students would be self-directed in their learning and will not have to depend on the teacher; since English language learners promote interaction with their friends and make use of language within a meaningful context which helps them to attach a purpose to its usage (Yildiz, 2020a). Meanwhile Personal constructivism is based on the work of Piaget (1972) and stresses learning on individual basis tailored to the needs of the individual (Jha, 2017). By Contrast, Radical constructivism deals with two major ideas- one being that the knowledge would need to be actively constructed at first and second- it would be meaningful to the learners when their experiences are organized (Glaserfeld, 1995).

### **Aims of The Study and Research Questions**

By and large, understanding the affordances and constraints of specific technology in the ways they were used during the Covid-19 pandemic in K-12 online learning in Turkey are not straightforward and would require teachers to rethink their pedagogical approaches to teaching in their distance education classes. Due to this, one of the main aims of this study is to investigate how the affordances of these different ICT tools can be leveraged pedagogically. Building upon these frameworks and mindset, the research questions for this thesis are thus given below.

1. Which technological tools offered EFL K-12 teachers the most affordances during their distance education classes during the Covid-19 pandemic?
2. Which theory/theories of learning does the EFL teachers think was dominant in helping them engage and motivate the students?
3. Which instructional and teaching strategies supported the EFL teachers in facilitating and mediating students' learning in achieving learning objectives?

## Methodology

This study is majorly centred on investigating the technological tools that provided the most affordances for EFL K-12 teachers during the Covid-19 pandemic in Turkey. In addition, it went a step further in examining the theories of learning that was dominant in the EFL classes during this period; and the instructional and teaching strategies that helped the teachers in achieving their learning objectives during the classes. Considering this, this study aims to give EFL teachers in K-12 schools new insights into the technological tools and platforms that would facilitate them in achieving their lessons objectives the most and furnish them with the right strategies to help motivate and engage their students in online classes.

To conduct this research, I chose focus group as the qualitative data collection method- with the questionnaire (*see Appendix A*) used as the instrument during the interview. Focus group interview was chosen particularly for this study to help explore the teachers' in-depth emotional state, behaviour, and mental impressions about the use of ICT tools and platforms; plus, the strategies and theories of learning that best supported them in their online classes during the Covid-19 pandemic.

According to Martyn Denscombe (2010), focus groups are made up of small groups of people who are brought together by a researcher to explore attitudes and perceptions, feelings and ideas about a definite topic and they comprise of six to nine people in them. This is further buttressed in Nuttavuthisit (2019), that the focus group interview should be done in an environment that helps them to share their experiences and opinions freely. As such, the focus group is not the same as group interviews but rather serve as a tool to stimulate group interaction in order to learn about the shared views of participant (Nuttavuthisit, 2019). From the foregoing, the focus group interview conducted for this thesis research had a group discussion that was based on the experience the participants had similar knowledge about (Martyn Denscombe, 2010) and the participants reflected on the questions asked by the moderator. The researcher of this thesis project formulated the questions in the focus group interview based on his research questions and literature review; and for this reason, the questions explored the various affordances different ICT tools offered K-12 teachers, the instructional strategies that were employed and the theories of learning that underpins the best practices in delivering online classes.

### **Population and Sampling**

The Covid-19 pandemic had a far-reaching and reverberating effect on the educational system across the world and Turkey was not left out. Under this circumstance, all the schools (K-12 in this case) moved their classes online during the period when the government declared lockdowns, so in view of this, there were millions of teachers who taught and had different experiences in the use of ICT tools for their online classes. Also, non-probability sampling method- purposive sampling- was used with the aim of using this subset of the population of K-12 teachers to represent their whole population. The schools where participants from this research were drawn from are situated in Ankara, Müğla and Denizli in Turkey.

Six teachers volunteered to participate in the focus group interview for the study from a total number of ten teachers who were contacted. Also, these teachers were selected based on their ability and willingness to provide rich data for the use of ICT tools for online education during the Covid-19 pandemic in Turkey (Epps et al., 2021). Those who participated in this study were English teachers whom the researcher knew through EFL conferences and seminars he had attended in the past. They were contacted and briefed about the scope of the research, how their data will be processed, and an informed consent was obtained. For confidentiality of the participants' identity and to easily pinpoint to them, these identification codes were assigned to the participants of the interview in the data analysis: PST01, PST02, SST03, SST04, HST05, HST06. The pairs of the EFL teachers from each of the city -Ankara, Müğla and Denizli- who participated in this research were from the same school. The pair of PST01 and PST02 teach at a primary school in Denizli while that of SST03 and SST04 teach in the secondary section in Müğla; HST05 and HST06 teach at the high school in Ankara. Before the interview began, their demography information was collected orally and recorded. The teachers who participated in this study had their years of teaching experience range from six to twenty-five years while the experiences they have in the use of ICT tools for teaching online range from two to ten years (*see Table 1*).

Table 1. Participant Demographics

<b>Participants</b>	<b>PST01</b>	<b>PST02</b>	<b>SST03</b>	<b>SST04</b>	<b>HST05</b>	<b>HST06</b>
<b>K-12 Level Taught</b>	Primary	Primary	Secondary	Secondary	High	High
<b>Gender</b>	Male	Male	Female	Female	Male	Female
<b>Teaching Experience (In years)</b>	6	9	20	18	6	25
<b>Use of ICT Tools Experience (In years)</b>	5	3	9	8	2	10

### Focus-group Interview

To conduct the research for this study, the procedure used for data collection process was focus group interviews. This method of data collection is used because it explores the attitudes, perceptions, feelings, and ideas about a particular topic. Martyn Denscombe (2010) argues that focus groups interviews are useful for estimating the degree to which there are shared views among a group of people in relation to a specific topic. Akin to this, the focus group used for this study was an homogenous one and this helped the participants to exchange viewpoints as people tend to feel safer when they are around those they share some similar features with (Nuttavuthisit 2019).

The researcher for this study developed six questions for the interviews, to address the research questions for the study (*see Appendix A*). The questions were designed based on existing research in collaboration with an English expert teacher with more than 10 years of experience teaching different levels of K-12 classes. The reliability of the questions was then ensured by securing the help of another colleague, with more than 15 years of experience teaching EFL at various K-12 levels, to review and validate them. After validation, the interviews were held for about twenty (20) to (35) minutes and began with an introductory talk about the main aim of the study, the duration of the interview, how their data would be used and some demographic questions. Also, their familiarity with the use of ICT tools and ICT-enhanced pedagogy plus the theories of learning was briefly discussed. The focus group interviews were conducted online on Zoom and recorded with the permission of the participants for the purpose of

transcription. The researcher then transcribed and audited the audio file recorded with Google Docs verbatim for accuracy purpose and some unimportant missing words were edited from the last transcription of the focus group interview, and some are depicted with ellipsis to the preceding part of the feedback from the participants to show that something was omitted and instead focused mainly on the part that was readable and presentable (Oluwafemi et al., 2021).

### **Data Analysis**

The data collected via the interview was transcribed (from audio format to text format) verbatim against the audio files and double-checked for accuracy and consistency. A coding table was then formulated; after which themes were created in NVIVO software. It was at this point the responses of the participants were entered into the software for analysis purpose. Nvivo provides an opportunity for researchers to manage and analyse qualitative data without losing touch with the richness of it. Since in focus group interview, emphasis is placed on the interaction going on within the group as a way of gathering and collecting information (Martyn Denscombe, 2010)- Nvivo makes it easier to capture all thoughts and insights according the context in which they have taken place (Woolf & Silver 2017). During the analysis of the data from the focus group interview, using Nvivo coded-reference function helped me to link the references made in the interview text to their corresponding nodes quickly. In hindsight, this would have been an arduous task without a software such as Nvivo because I would have spent countless hours trying to figure things out. Using this function helped me to assess the validity of the coding and the evolving concept reflected by the node (Woolf & Silver 2017). Overall, Nvivo facilitates the performing of both open and axial coding, hence it supports reflexivity and comparing of ideas in the process of research (Clarke et al., 2021).

## **Results**

The aim of this research has been to investigate the ICT- tools that provided the most affordances, the strategies, theories of learning and ICT-enhanced pedagogy that helped facilitate engagement in the online classes during the covid-19 pandemic. Majumdar (2015) has said that the use of ICT for learning fosters collaboration, use of active learning, improving interactions and helps feedback to be provided at the right time. As a result, educators of this age, especially those who teach online, are to be cognizant of the learning strategies and ICT pedagogies that would help them to actualize these goals. The use of ICT nowadays by students is ubiquitous since these tools are being used at homes in the everyday lives for things such as social media, games, entertainment and so on. Accordingly, it is important to reinforce and embellish the way these tools have been used at home and better them in our online classes so as not to bore, disengage, or even teach while learning is not going on.

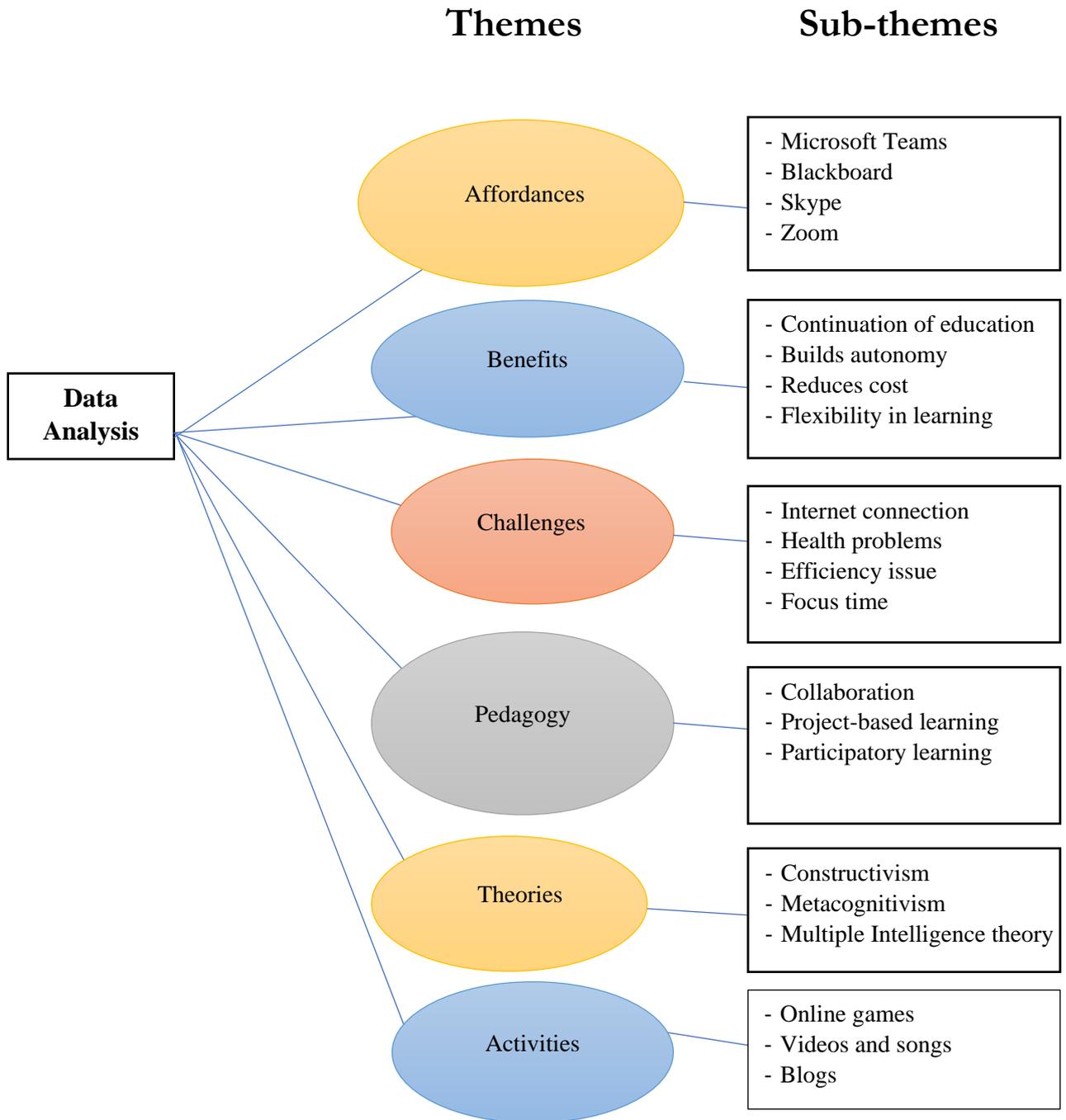
According to Kurt et al. (2022a), the major concern today, bearing in mind the possibility of future pandemics, is how to design k-12 online education which would meet the optimal standard in engaging and helping students in online learning. Thus, this study helps to answer the question inside out. Using a qualitative research method, this study examines the tools that could help teacher engage the students- by looking at the affordances they offer. Also, it investigates the theories of learning and strategies that underpins how the affordances can be exploited optimally for teaching and learning in an online EFL classroom.

It would note-worthy to mention that all the participants in this study taught online right from the beginning of the pandemic and as such they are aware of the positives and negatives of using ICT tools to teach online. Also, it won't be wrong to submit that they have tried out different strategies and pedagogies to motivate and engage their students as the whole thing wore on. Therefore, it can be said that these teachers are familiar with the use of ICT and possess a vast amount of experience when it comes to teaching EFL students online.

## **Themes and Sub-Themes**

Themes for this research were extracted from the focus group interview questions and the research questions, thus priori or predetermined themes were used to code the qualitative data (Carroll et al., 2011; Sclar et al., 2018). All codes were assigned to the five predetermined themes that were drawn up for the purpose of the data analysis.

Subsequently, emerging themes (sub-themes) emanated from the pre-determined ones with the help of the interview data (*see figure 1*).



**Figure 1.** Showing the relationship between Themes and Sub-Themes generated from the interview data.

From *figure 1*, six themes were selected in this study: affordances, benefits, challenges, pedagogy, theories, and activities. The aforesaid themes were highlighted to help address the research questions (*see table 2*). While the interview data was being analysed, there was the emergence of some sub-themes that linked up with already

highlighted ones. These emergent themes are the ones categorised as sub-themes in *figure 1*.

**Table 2:** Relationship between research questions and themes.

	<b>Research Questions</b>	<b>Main Themes</b>
1.	Which technological tools offered EFL K-12 teachers the most affordances during their distance education classes during the Covid-19 pandemic?	Affordances Benefits Challenges
2.	Which theory/ theories of learning does the EFL teachers think was dominant in helping them engage and motivate the students?	Theories Pedagogy Activities
3.	Which instructional and teaching strategies supported the EFL teachers in facilitating and mediating students' learning in achieving learning objectives?	Pedagogy Challenges Activities Affordances

### **Affordances of ICT tools and platforms**

This purpose of research questions one and three was to find out about the ICT platforms that provided the most affordances; and, the strategies EFL teachers used in delivering their contents. This theme analyses and sheds more light in helping to unravel “the what and why” of these research questions. The first question of the focus group interview required the participants to express their familiarity with the affordances that exist in ICT tools they used and also provide background knowledge about the theories of learning. They started out by having some moments to reflect and recollect to piece together the way their classes transpired. They were distinct and straight-forward in their answers.

### **Microsoft Teams**

Since EFL teachers played around with different platforms during the pandemic, especially for their private classes, one of the participant provided a mixed response to the question whilst mentioning the affordances for Microsoft Teams, and said:

*From my experience, that would be Blackboard and Microsoft Teams as I used both during the pandemic for online teaching. In addition to what I've already said- the latter ..... supports flipped classroom and classroom management. (HST06)*

Similarly, another participant was able to corroborate what participants HST06 said about the reason why Microsoft Teams offer a lot of affordances for online classes. In his response, he talked about how it helped in moderating the classes, facilitating interactions from all sides- teachers, parents and administrators. His response was:

*For my part, the platform I used the most was Microsoft Teams and I think it was very efficient in moderating the classes to a large extent. Using the Microsoft Teams helped me to for example create the classes before hand and add the students. Also, the management, administrators and parents were also able to see the communication going on within the classes; parents were especially a great beneficiary of this as they could monitor their children participation and involvement in class activities. So, I'd say Microsoft Teams was definitely resourceful in managing the classes. (HST05)*

Comparatively, another teacher used Microsoft Teams and was attracted to its use because it supports flipped classroom. This was what participant SST03 said about the use of Microsoft Teams for online classes:

*So, like we decided to use Microsoft Teams. That was a perfect cause you can open tabs and groups like for different classes and you can send them materials beforehand that they can study and have it after the class. Cause if you like use zoom when you send messages and once you end the session everything is gone. (SST03)*

## **Blackboard**

At this point, participant HST06, who initially provided a mixed response, provided some clarity on the major platform she used. Mentioning the uses of using the Blackboard to include- providing easy access for students to watch and listen to recorded classes, and that it also has user-friendly interface, she struck an investigative tone:

*So, my school had us, teachers, investigate the ones available and recommend a suitable platform that would fit into the profile of our students. In the end, we choose Blackboard as it had some tantalizing technical features. For instance, all recorded classes are automatically available a few minutes after class and students who weren't around could watch them and catch up with things. Also, it was easy to use and has a user-friendly interface which meant students need not spend the entirety of the first week learning the ropes. They could catch the gist of how it worked within the first three classes- at least for my students. (HST06)*

Another participant used Blackboard for her online classes, and she drew some parallel between it and Zoom. Here is her comment:

*Our school used Blackboard and I believe it's like Zoom. With this platform, I could mute students in case they forgot to turn off their microphones; I could also send students into breakout rooms and use the whiteboard to write. (SST04)*

### **Skype**

For this, it was only one participant who mentioned that he used Skype- majorly for administrative purpose. His response to question one in the focus group interview was this:

*.....used skype sometimes. Okay and it really makes you to control the classroom. .... They always try to write comments and try to distract the classroom. You can close the comment section and everything like that and the screen and upload some files and the school administrators are going to look at it and see what you're like speaking about. (PST01)*

### **Zoom**

For Zoom, two of the participants mentioned about their use of this platform for their online classes during the pandemic. The first response relates to the use of Zoom in conjunction with other tools such as online reading platforms. The participant commented in this way:

*..... I used to zoom for the lessons and use digital reading platforms to explain the contents and form of the lessons. (PST02)*

Providing some contrast to the use of Zoom for kids, another participant responded and opined in this way:

*.... but for zoom, zoom is just coming up and made specifically for like meetings, so it's not made for kids. (PTS01)*

### **Google Classroom**

One of the respondents had this to say about the use of Google Classroom and what she uses it for.

*That said, I was also able to use Google Classroom for some impromptu private classes and I would say- it's also an efficient platform. SST04*

### **Benefits**

Another important theme that helps to answer the first research question about the tools that provide the most affordances is “benefits”. Since these tools need internet connection to function and serve as a go-between between the teachers and the learners during the distance education classes, hence it means one cannot function without another as they are intertwined. Recall that ICT tools as used in this thesis research includes both software and hardware (an ecology of tools). Therefore, the benefits of using internet for distance learning classes is hinged upon those tools which are internet-powered for delivering them online. The internet (enabler) would be useless without the tools serving as its host.

Responding to question 5 of the focus group interview question, a participant commented that the ICT tools helped to ensure that learning continued during the pandemic. His comment was:

*The advantage of it is that this continuation of learning, even if they anything which is abstract, obstructing physical, conducting physical lessons. And I would also say- it builds independence in young earners at an early stage where they learn how to take tasks and do them without a continuous supervision.*  
(PST02)

Correspondingly, another participant held a similar view and was thankful for the distance education classes as he was able to read more books. His comment was:

*And for the benefits I would say distance education during the pandemic ensured that education was brought to the doorstep of every student in their homes and dwellings. Since transportation was not needed as you know, one could just wake up, turn on our computers and we are online. So, the school starts, ..... This afforded both the teachers and the students to have spare time for their hobbies and I, for instance, was able to read more books during the Covid-19 pandemic.* (HST05)

As the participant continued bearing their minds, a participant remarked and saw things from a broader perspective when she spoke about the mental health of the students. This was her comment:

*One obvious benefit of the online classes was that it helped to keep the students sane mentally during a time when they could not see their friends and loved one's face-2-face as we were on lockdowns .....* (HST06)

She also continued by saying this:

*Also, the fact that they could continue their education despite the impediment of the pandemic is relevant. The sheer scale of the global lockdowns impacted the perspectives of the students, especially since mine were teenagers, and they were eager to know and get up to date with what their friends in oversea countries were up to. (HST06)*

Responding on his own part, a participant struck a similar tone to that of participant HST05 and commented:

*Yeah, the benefit of the online lessons is that I mean you can conduct classes from your comfort zone, I mean you just need Internet and, ..... Well, you don't have to, you know, enter transport, and go to your place of work. So, for both teachers and students are very good. (PST01)*

For another participant, online classes helped to build student autonomy in his classes, and he had this to say:

*The advantage of it is that this continuation of learning, ..... And I would also say- it builds independence in young earners at an early stage where they learn how to take on tasks and do them without a continuous supervision. (PST02)*

### **Challenges**

The theme challenges cuts across most of the research questions in this study- research questions one and three (*see table 2*). As a result, it is integral to understanding why, for example, EFL teachers in K-12 schools in Turkey couldn't achieve the aim of their lessons during their online classes. Also, the theme here provides a lens through which we could understand the areas that needs improvement when it comes to organising distance education classes.

The participants were eager to bear their minds on what hindered their performances and results. The first participant who responded spoke about the biggest challenge he faced. He had this to say:

*I can say that the biggest obstacle for students learning is the availability of Internet. So not every student can get proper connection all the time. That's one of the biggest issues I had during my online classes. The families of students in my school could afford good internet connection for their kids for example but I think this is not the case with poorer families living in the rural areas. (HST05)*

Identically, both participant PST02 and SST03 shared the same view on the challenges they faced as they had classroom management issues.

*And as for the limitations- classroom management is quite an issue where the students would react to the classroom management strategies, and they would feel like they are being left out. (PST02)*

*And, for limitation classroom management as ..... said, sometimes you don't know who is really doing the work. I mean, students can easily pretend to be doing the work. Just sit in front of your camera and act like you're writing something but doing nothing. And you can really single out like sometimes you know you have like shy students, like they wouldn't really tell you like they don't understand. But then when you're in an actual classroom, you can kind of pick out those that are struggling and help. But in an online environment, it's kind of difficult to notice. (SST03)*

As a follow-up to the feedback for the question, another participant cited efficiency concerns and provided this as his own view:

*..... the upcoming family might get used to it but as for the older generations- I don't think they really, you know, like the online lessons because they don't see it to be effective enough. (PST01)*

Again, a participant was more concerned about the side-effect of online classes for the mental health of both students and teachers. She commented on it this way:

*..... the long hours spent before the screen might affect some students because we are always online and because of the screen there was an exposure to radiation because of the computers. This causes eye fatigue, and the students experienced it mostly in the afternoon. (SST04)*

In addition, an issue that got most of the participants debating and interacting was the maximum length students of different age groups could focus and concentrate during online classes. Participant PST01 was the first to jump in when he said:

*You know the maximum the students can focus online is not more than 30 minutes.....because most of them are very productive during the first 30 minutes of the lesson. (PST01)*

Two other participants then shared the concern of participant PST01 about the duration of online classes. They had these to say:

*but I think like cutting down on the duration of the actual classes, but it's kind of hard to sit down facing your computer screen for long division, especially for kids. (SST03)*

*I would recommend a maximum of 45 minutes per online class as the students tend to switch off and not participate actively in the lessons after 40 minutes.*

**(SST04)**

These varying views indicates that the maximum focus time in which k-12 students in Turkey can stay productive and be motivated, while in online classes, is still up for debate and needs further investigation.

### **Pedagogy**

Pedagogy as a theme here resonate mostly with research questions two and three. Understanding the pedagogy that fosters students' motivation and engagement is key to effective online education. As such, this theme is central and of paramount importance as it plays an integral role in the overall understanding of ICT-enabled pedagogical practices. The participants had tried out different kinds of pedagogy for a good couple of months during the lockdowns in Turkey, so they had a lot to contribute.

At the outset of the responses for question one of the interview question, participants PST01, PST02, SST03 and HST05 all spoke about how collaboration was dominant in their classes. Collaboration was at the front burner right from the beginning and it lasted for a while. They had these to say:

*I think I have been using ICT-enabled learning, story-based learning, and collaboration for online classes.... (PST01)*

*.....I believe this I can categorise reading platforms, digital reading platforms under Collaborative learning. Using for instance the Zoom app to create breakout rooms. (PST02)*

*The classes like work together to solve problems, making so from the handout I think that would be under collaborative learning. (SST03)*

*.....collaborative learning and project-based learning were some of the ICT-enabled pedagogies that I used during my online classes. (HST05)*

The conversations then shifted to another kind of pedagogy for ICT when a participant gave this as his response:

*I also used Project-based learning where I would assign projects based on the topic. Students would prepare presentations and make them online and I think that also doubles as self-directed learning. (PST02)*

Another pedagogy which sprang up towards the tail end of the conversation was participatory learning when participant SST03 added to what she had already said:

*And then I tried to like do like with the Teams you like. You can share your screen, and everyone can participate in right at the same time. And you could do lots of group activities like exercises where you just call out students and they just type on their keyboard and typing the answers or click the answers like trying to get everyone to work together. (SST03)*

### **Theories**

The theories, which in this case refers to the theories of learning, is another important theme that can be associated with research question two and three. The focus group interview question that dealt with this was also question one and although the participants had some few challenges in grasping the full gist of the question at first, naivety gave way to boldness as the interaction progressed.

It was a mixed bag at first when a participant couldn't pin-point to an exact theory, and this later reflected in the views of the other participants who followed suits as well. The responses for these participants were associated mostly with constructivism. They said:

*Maybe I can say that I'm both constructivist and metacognitive because need to take care of students' multiple intelligence style. (SST04)*

*From my standpoint, I'd say it's more of constructive for me as I most times had to activate the schemata of the students at the beginning of classes to see what they know at first. (HST05)*

*...social constructivism, I think, would best describe the classes I had over the course of the pandemic- which is still ongoing as we speak. Looking at things retrospectively, this was a period of uncertainty and stress which led to a lot of anxiety on the part of teachers and most especially students. (HST06)*

Aside from constructivism, another theory which stood out among the interactions we had was metacognivitsm and sort of extended the answer of participant SST04. The next comments that came from the participants were:

*Aside from this, cognitivism and meta cognitivism can come into play depending on the kind of skills I'm teaching and the profile of the students as well. (HST05)*

*.....a teacher could not really gauge or predict the mood and responsiveness of the students in his/her next class, so there was need to consider the*

*metacognitive ability and multiple intelligence of the students. So yeah! Participatory learning, collaborative learning and project-based learning were some of the ICT-enabled pedagogies that I used during my online classes. (HST06)*

### **Activities**

Furthermore, a theme which links up with research questions two and three is activities. Since online classes are supposed to be interactive and where models are employed, working on class activities would help the teacher to correctly model knowledge accordingly. Several of the participants mentioned about using videos, games, and online digital platforms in their classes to promote student engagement and optimally maximise the affordances of the ICT tools in their classrooms.

Their comments on this were:

*I used to turn the class into active participation through singing of songs and making movements. This engagement also helps in the breakout rooms a lot, The kids loved it and they would learn and would produce the language, the target language that we call it. (PST02)*

*.....like Kahoot absolutely there is also quizzes. If they are like kids, there's some websites like games to learn English. And you can also assign them games to play and things like that. (SST03)*

*.....I used online digital platforms such as tricider for collaborative learning and gamified learning platforms such as quizlet and kahoot. (SST04)*

*Getting the students to work in groups by sending them to the breakout rooms, giving them challenging tasks and using a variety of teaching resources such as videos, games, interesting fun activities and asking them to bring their own materials to the classes were some of the major strategies that I used. (HST06)*

## **Discussion**

### **Interpretation and Findings**

The present study aimed to explore teaching and learning of English as a second language using ICT tools in Turkish K-12 schools. Findings from this study are interpreted based on the themes generated and extracted during the data analysis and focus interview data. The findings fall into unique categories as I would be interpreting the result based on the three research questions earlier mentioned.

### **Research Question 1**

The first research question in this study sought to investigate the technological tools that offered K-12 EFL teachers the most affordances for distance education classes during the Covid-19 pandemic in Turkey. The overall outlook of data from the interview conducted shows that Microsoft Teams and Blackboard offered the K-12 teacher the most affordances.

According to one of the participants, the use of Microsoft Teams in his classes meant that the students could easily interact with him within the environment and parents could also see things as they unfold in their children's classes. Although Rojabi (2020) found that the use of Microsoft Teams in distance education, during the Covid-19 pandemic, optimally supports interaction for both student-teacher and student-student, AlAdwani & AlFadley (2022) found these interactions to be moderate for the study they conducted in the more recent time. In view of this, it can be said that using Microsoft Teams for online classes promotes interaction and fosters communication amongst all the players in the online space; and also the management of the classroom- albeit moderately. As mentioned in the literature review, one of the barriers to online lectures is the engagement of students (Şenol et al., 2021). However, since "...through online collaboration tools, ESL teachers can promote student engagement, 21st-century skills, and second language learning"(Yildiz, 2020a, p. 6); and Microsoft Teams in this case helps to foster this engagement via collaboration, it is evident then that using Teams would help to mitigate against the aforesaid barrier. In an EFL classroom, the interaction patterns are of paramount importance as it helps create a community and increase collaboration. Likewise, another respondent highlighted the benefits of Teams as supporting flipped classroom. This advantage was, in fact, mentioned by many participants as the main benefits of using Teams as three respondents explicitly stated this. This finding is consistent with that of Poston et al. (2019) who found Teams to have a meaningful

impact on both the classes delivered face-2-face and in the hybrid mode. In their study, Poston et al. (2019), also found that Teams supports a variety of class sizes including small ones, group work and students who are working; and this corroborates the result in this study as two respondents said they used Microsoft Teams for creating different group, channels and classes.

Another ICT tool that offered EFL teachers, according to the findings in this study, the most affordances is the Blackboard. Some of the uses of Blackboard that were revealed, during interaction with the participants, are that it has a user-friendly interface, students can learn how to use it easily, the recorded classes are available after some minutes, the use of the white board during classes and the teacher having the opportunity to send the students to the breakout rooms and mute their microphones. A key feature amongst these uses is the user-friendly interface of the Blackboard. During the early days of the pandemic, students and teachers alike were left with no choice but to switch to the online mode of teaching as there were lockdowns. This emergency situation led to them using technological platforms and tools to facilitate their online learning classrooms and teachings. Amidst this situation, it was important they find a tool they could grasp its functioning within few days. To put things into perspective, one of the participant of this study said this: “.....*In the end, we choose Blackboard as it had some tantalizing technical features. For instance, all recorded classes are automatically available a few minutes after class and students who weren't around could watch them and catch up with things. Also, it was easy to use and has a user-friendly interface which meant students need not spend the entirety of the first week learning the ropes. They could catch the gist of how it worked within the first three classes- at least for my students*” **HST06**. In this sense, the Blackboard helped mitigate against the challenge, mentioned in the literature review, that teachers faced when Mary C. et al. (2014) mentioned that teachers who are not able to engage and effectively use technologies in their classrooms can't maximise its usage. Hence, the Blackboard as a platform for online classes in this case was used efficiently by K-12 teachers for their classes in Turkey. Prior studies that have noted the user-friendly nature of the Blackboard is that of Altohami et al. (2022) who found it to offer user-friendly tools for assessment even though it would need to be customized. Apart from this, Al-Khresheh (2022) also found the backboard to be user-friendly, possessing high level of technology integration and flexible applications. For these reasons, using Blackboard offered many affordances that other platforms did not have for K-12 teachers in Turkey. What's more! Blackboard emboldens and supports the Zone of

proximal development and Social Thoery of Vygotsky (1978)- the theoretical framework which this research thesis is hinged upon. Vygotsky's work (1978), as earlier mentioned, centres on collaboration and the Blackboard is rich in that as it “.....offers various presentation modes through the tools of Share Blank Whiteboard, Share Application/Screen, Share Files, Blogs, Discussion Board, and Breakout Groups” (Altohami et al., 2022).

Furthermore, Skype, Zoom and Google Classroom were the other platforms the respondents mentioned during the interview to have affordances. A respondent from the Primary School said he used Skype for his classes and doesn't think using Zoom is suitable for kids; and of the opinion that the latter is specifically made for meetings. Also, another respondent, mentioned the use of Zoom for creating breakout rooms; and a respondent mention that she only used Google Classroom for private online classes. With respect to the use of both Skype, Zoom, and Google Classroom, the result of this finding shows that they were not used frequently by most of the EFL teachers in K-12 schools in Turkey. Going through the annals of academic literature, Google Classrooms and Microsoft Teams were found to be the leading platforms used in the study conducted by Callaghan (2021) in her study of 115 Public schools in New South Wales, Australia, which comprises mostly of primary and secondary school. In spite of this, the result was slightly different for this study because the respondents interviewed were all from private schools and as such- their schools mostly used paid platforms. Consequently, it can be said that Microsoft Teams and Blackboard offered K-12 the most affordances for their online classes since they foster collaboration, classroom management and interaction.

### **Research Questions 2 and 3**

The second and third research questions are interwoven and were to determine the theories of learning and strategies that supported teachers in engaging and motivating the students for acheiving the learning objectives during distance learning classes. Responding to the interview questions, a couple of the participants seem to be concerned about the multiple intelligence style of learners of the 21st century and in their views- this makes the organisation of classes and setting of strategies challenging for online classes. Since intelligence such as verbal, logical, visual, kineasthetic, musical, interpersonal, and existential were some of the leading ones the students used in some capacity and at some point during classes, it was crucial for teachers to be present and ready to meet the needs

of the learners within the e-learning environment- for it is only when this has been done that the learners would feel motivated and engaged. For example, a respondent opined that she used more of constructivist and metacognitive theories as she needed to account for the multiple intelligence style of the students in her classes. From the result of the findings in this study, the constructivist and metacognitive theories resonated more with the respondents in engaging and motivating students in their classes. Another respondent, for instance, activated the schemata of her student first at the beginning of classes to see what they know and looking closely at the interview responses, a lot of the respondents used collaboration as an ICT-enhanced pedagogy by getting the students to the breakout rooms to discuss, playing games within an online space, and getting students to work on task based on prepared instructions in handouts. The other ICT-enhanced pedagogy that were used in the respondents' classes according to their feedbacks includes story-based learning, project-based learning, self-directed learning, problem solving, participatory learning and digital reading platforms. Without mincing words, collaboration, project based learning and participatory learning stood out as the major pedagogy used by the teachers in engaging and motivating the students.

It is encouraging to compare this finding with that of Kurt et al. (2022a), who recently investigated the factors that were responsible for engaging the students in K-12 online education and the strategies the teachers used in engaging them during the Covid-19 pandemic in Turkey. In their findings, they discovered that instructional and student factors, learning environment and policies were the leading ones. The result of this research corroborates this as online teaching practice partly constitutes instructional strategy. In this case, the ICT pedagogies used by the respondents in this study engaged the students. Meanwhile, the student factors can be interpreted to mean participatory learning and one of the respondents had this to say; *".... and then I tried to like do like with the Teams ..... You can share your screen, and everyone can participate in right at the same time. And you could do lots of group activities like exercises where you just call out students and they just type on their keyboard and typing the answers or click the answers like trying to get everyone to work together"* SST03. According to the literature review of this research, the use of ICT pedagogy should promote collaboration, motivate, foster enquiry and exploration, and help to create a new learner-centred learning culture (Dhawan, 2020) and findings here for question three (3) is consistent with this.

Additionally, the major strategies used by the respondents, according to their feedback in the interview, includes giving students the opportunities to share their screen during

project presentations, creating avenue for students to send message to them directly on the ICT platforms (like on Microsoft Teams), calling out the students by names, integrating videos and games into classes and asking the students to bring the materials they would like to work with to the class. Since activities used in the online environment can either motivate or demotivate the students (Kurt et al., 2022a) and personal relationship between student and teachers helps to boost their motivation in the online environment (Hewitt, 2005), the findings of this study are in accord with that of Kurt et al. (2022a).

Criss-crossing back to the theories of learning, Thulasidharan, (2020, p. 2) mentions that “...students with a high interpersonal intelligence enjoy working in groups and gain energy from the interaction with others and they make use of the possibilities of using live chat rooms, sharing experiences and group interactions more”; and while constructivism promotes interaction through scaffolding, collaborative learning and problem-solving. It therefore implies that constructivism supports multiple intelligent students. Also, since the EFL classrooms are hinged upon the practice of metacognitive skills such as comprehending, interpreting, critiquing, evaluating, creating, adapting, assimilating; and constructivism is an active process of constructing knowledge. It is evident that constructivism can also be used to build metacognitive skills as it helps to link content to context and bridge bridges in students’ mind. Given these points, constructivism and multiple intelligence theory stood out amongst the theories of learning that was used in promoting engagement and motivation of students during the distance learning classes for K-12 schools in Turkey. All things considered, constructivism, in this sense, is the major theory underpinning the engagement and serving as a driver in achieving the lessons’ objectives in an online classroom.

### **Directions for Further Research**

This study was conducted with six (6) participants who taught across three cities in Turkey. Although the respondents were three (3) males and three (3) females, having a larger sample number would have been great. The reason why the researcher couldn’t get more participants was because most of the teachers contacted were more used to filling out questionnaires than giving online interviews due to their busy schedules. To extend the participants’ size, future research should consider using a mixed-method approach in collecting data to encourage participation from a wide range of audience.

Furthermore, examining the students' and stakeholder's perspectives- such as the parents and administrators- about the technological platforms that best support the learning of their children and provides the most affordances should be considered as well. Coupled with this, it is important to extend the study to public schools as well to have a broader perspective about the use of ICT tools for K-12 education in Turkey. Broadening the scope of the study in this case would help solidify and reinforce the findings of previous studies in this regard.

### **Limitations of the Study**

The participants of the study were all from private schools with no public-school experience. As such, the feedback of the respondents during the interview might have been limited only to their experiences and prognosis of the private sector.

Also, the answers the respondents gave were subject to their experiences and belief system, so the researcher could not verify the results fully against the stated situations and contexts cited. All these being some limitations of qualitative research.

### **Conclusions and Recommendations**

The aim of this study is to investigate the technological platforms that provided the most affordances, theories of learnings that underpins the delivering of the content of the teachers on these platforms and strategies that were used to meaningfully engage and motivate the students on distance education classes during the Covid-19 pandemic in Turkey. Even though the use of ICT tools for learning is ubiquitous nowadays, utilizing it to optimally enhance learning for the students is still generating a lot of literature.

Using Microsoft Teams and Blackboard were found to possess the most affordances for the K-12 teachers considered for this study. In a way, using these tools and platforms fostered engagement of student, supported ICT-enhanced pedagogical practices, and helped the interactions within the online and out-of-classroom environment. This would have been unthinkable some decades ago but thanks to the advancement of science and technology, we now have at our fingertips educational technology that have and continues to revolutionize the world. To say that the Covid-19 pandemic has revolutionized the set-up of education around the globe would be an understatement! As such, teachers need to be conversant with the changing landscape of technological practices in the classrooms so as not to be left out and become irrelevant- as we are in the throes of rare opportunity. Many teachers who turned a blind eye to the use of technology

in the classroom pre-pandemic would have had a hard time adjusting and adapting to the new way of delivering lessons as it is no longer the repeat-after-me approach. Again, the affordances and limitations mentioned by Kurt et al. (2022a) in the new learning set-up required the K-12 teachers in this study to adapt to a new role to create effective and meaningful experiences for their students (Martin et al., 2019; Rapanta et al., 2020). Other teachers are thus encouraged to do likewise, when opportunity provides, for them to make learning both educative and challenging for their students.

Equally important is the need to promote collaboration, problem-solving and project based learning in K-12 EFL classes- both for face-2-face and online learning. Collaboration, as one of the 21st century skills, can help immensely by varying the interaction patterns in our EFL classrooms and encouraging students to actively participate in class activities. Teachers should also organize their teaching and materials in such a way that it would cater for the different kinds of learners found in most of our classrooms as teachers' teaching style and practice can have impact on students' engagement level. Multiple intelligence theory and constructivism especially should be considered when coming up with strategies to engage and motivate students. Despite that fact that the teaching styles of teachers may differ from one to another, modelling knowledge, promoting interactions, and helping the students to fulfil Maslow's hierarchy of needs (basic needs, psychological needs and self-fulfillment needs) within the classroom would transform our classes into a social community for both learners, parents, teachers and stakeholders. Moreover, the use of ICT tools in learning and by extension for teaching of K-12 EFL classes in Turkey during the pandemic was a huge paradigm shift from the common knowledge of having online classes once in a blue moon. The lockdowns meant teacher had to work from home behind their screens daily. The dawn of a new area is surely upon us, and we all need to embrace it in full swing because it is only with the growth mindset that we can all succeed.

In conclusion, this study set out to critically examine the affordances in educational technologies and explore the possible ways of maximizing the meaningful use and pedagogical underpinnings that would help the educators and stakeholders alike better their skills in the use of educational technologies. It is no gainsaying then that ICT tools in education has come to stay and going forward, it would shape and model the new leaders of tomorrow.

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**Author's declaration**

*I hereby declare that I have written this thesis independently and that all contributions of other authors and supporters have been referenced. The thesis has been written in accordance with the requirements for graduation theses of the Institute of Education of the University of Tartu and is following good academic practices.*

Signature

Date

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## **Appendix A**

### **Interview Questions**

Before the interview began, the general concept of ICT-enhanced pedagogy/ approaches and theories of learning will be discussed.

- 1.** Are you familiar with any ICT-enhanced pedagogy/ theories of learning, which you have used in your online classes during the Covid-19 pandemic for teaching and learning purposes?
- 2.** Which technological tools and platforms supported you the most in implementing your lesson plans content and ICT-enhanced pedagogy?
- 3.** Which affordances, in your opinion, do these tools and platforms provide?
- 4.** What strategies did you use to promote online student engagement and how do you perceive the effectiveness of these strategies?
- 5.** What would you say are the benefits and limitations of using ICT tools to teach online during the period of Covid-19?
- 6.** Did anyone experience the “Are you there?” syndrome during your online classes?

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