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Examination of ELT Lecturers' Digital Technology Integration Levels via SAMR Model during Emergency Remote Education

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Abstract

It is undeniable that humanity depends heavily on the effective application of technology in today's globalised and competitive world, and the field of language education is strongly impacted by the era of digitalisation, which facilitates interactive and transformative teaching environments on various language teaching platforms. Moreover, it is necessary to combat various pandemics and devastating natural disasters through technological advancements without falling behind the 21st century. The current century demands a higher level of awareness and practicality regarding technology facilitation, apart from higher-order skills. Considering this cognitive approach and awareness, the present study investigated the digital technology integration levels of the English Language Teaching lecturers during the COVID-19 pandemic emergency remote education conditions using Substitution, Augmentation, Modification, Redefinition (SAMR) Model. A correlational design was employed through the administration of a Likert-type questionnaire to 243 English Language Teaching lecturers at 20 universities geographically dispersed into the seven districts of Turkey. The universities were selected based on the statistical data of the Nomenclature of Territorial Units for Statistics. The results indicated that synchronous teaching platforms were mainly utilised as overhead projectors, revealing the dominant usage of Substitution level without the lecturers' effective interferences in the activities. Transforming either the frame or content of the original materials was also largely promoted under the Modification level, but it was placed after the Redefinition level, which is time and effort-demanding, and promoted more extensively after the Substitution level. The Augmentation level was the least promoted one, since the participants considered that increasing or decreasing the number of robotic activities is less useful than Modification and Redefinition level-appropriate practices. Furthermore, correlations were found between the participant lecturers' digital technology integration levels and their gender, background education and online teaching experiences, whereas seniority and age were not significant indicators of the participants' digital technology integration levels.

Keywords: SAMR model, digital technology integration, emergency remote education

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İngiliz Dili Eğitimi Öğretim Görevlilerinin Acil Durum Uzaktan Eğitim Sürecinde Dijital Teknoloji Entegrasyon Düzeylerinin SAMR Model Çerçevesinde İncelenmesi

Öz

21. yüzyılda insanoğlu hayatın her alanında baskın şekilde dijitalleşmektedir ve bu süreçte aslan payı eğitim alanına, özellikle de dil eğitimine düşer. Dijitalleşmeyi en yararlı şekilde derslere entegre etmek ve dil eğitimini yüzyılın gerisine düşürmemek için çağın hız kesmeden getirdiği pandemik salgınlar ve doğal afetler ile akılcı ve çözümcü bir tutum ile savaşmak gerekir. Bu bilinçle, mevcut çalışma birincil amaç olarak KOVİD-19 sürecinde uygulanan acil durum uzaktan eğitim sürecinde üniversitelerde İngiliz dili eğitimi akademisyenlerinin dijital teknolojiyi hangi düzeyde çevrimiçi derslerine entegre ettiklerini SAMR Modelini kullanarak açıklamaya çalışmıştır. İkincil amaç olarak da akademisyenlerin yaş, cinsiyet, kıdem, eğitim düzeyleri ve çevrimiçi eğitim tecrübeleri ile dijital teknoloji entegrasyon düzeyleri arasında önemli düzeyde anlamlı ilişki olup olmadığı araştırılmıştır. Çalışmada nicel araştırma desenine bağlı olarak SAMR Modeli anketi kullanılmıştır. Türkiye örnekleminde, gönüllük esas alınarak 243 katılımcı ile KOVİD-19 süreci acil durum uzaktan eğitim çevrimiçi İngilizce derslerindeki dijital teknoloji entegrasyonu incelenmiştir. Sonuçlar göstermektedir ki çevrimiçi dersler büyük oranda yüz yüze ders materyallerinin hiçbir değişiklik yapılmadan çevrimiçi platformlara yansıtıldığı bir ortam olmuştur. Bunun yanında, aynı ders konusunu sayıca yüksek veya az aktiviteler ile güçlendirmek yerine mevcut çevrimiçi aktiviteyi içerik olarak değiştirmek ve adapte etmek daha çok tercih edilmiştir. Bunlarında ötesinde büyük ölçüde birçok materyalin sıfırdan geliştirildiği görülmüştür. Dijital teknoloji entegrasyonunun KOVİD-19 sürecindeki özeti olarak öncelikle akademisyenlerin var olan materyalde seviye, içerik, sayı ve/veya çeşit yönünden hiçbir değişiklik yapmadan olduğu gibi kullanma yolunu seçtiği, ikinci olarak da kullandıkları materyali dersin tabiatına uygun olarak baştan sona kendileri geliştirme yoluna gittikleri tespit edilmiştir. Akademisyenlerin dijital teknoloji entegrasyon düzeyleri ile cinsiyet, eğitim düzeyleri ve çevrimiçi eğitim tecrübeleri ile aralarında ilişki bulunurken; kıdem ve yaş ile aralarında ilişki bulunmamıştır.

Anahtar kelimeler: samr model, dijital teknoloji entegrasyonu, acil durum uzaktan eğitim

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INTRODUCTION

Expeditious revolutions in the field of technology have been accompanied by the obligation of unique reinstatement in every single chapter of life in the 21st century, especially the chapter of education, regarding Information and Communication Technology (ICT). Following the fast-paced evolving technological advancements, the global world is seeking competent alumni from higher education bodies. In that instant, updating education with technology became a crucial teaching strategy (Howard et al., 2000; Mirzajani et al., 2016), and Ertmer (2005) relates the necessity of technology integration into education for effective teaching and learning practices. Along the same line, Prensky (2001) explains that technology integration into education is a stepwise process; it is not a sudden interference. In the same vein as Prensky, Alivi (2019) underlines the importance of technology integration into language education and recommends a hierarchical procedure of augmenting the level-appropriate practices. At this moment, the four-level framework called SAMR Model developed by Puentedura (2006) aids in guiding the hierarchical integration of technology into education: it starts with the Substitution level and evolves into the Redefinition level. The reason for employing the SAMR Model as a framework is that the SAMR Model explains the digital technology integration degree of the ELT lecturers stepwise, and describes the requirements of effective digital technology integration by benefitting from a hierarchical process similar to Bloom's Taxonomy.

Wilson and Conyers (2021) claim that educators have failed in performing effective actual classroom tasks though they are responsible for digital technology integration into education with its instructional strategies. It is an indisputable fact that arming lecturers with theoretical knowledge, and not examining their actual classroom practices is a pitfall. Lecturers' digital technology integration practices are recommended to be checked in 21st-century education institutions, since it is not a voluntary action but it is an obligation. This obligation has been faced all around the world suddenly with the outbreak of the COVID-19 Pandemic: all fields of education have been transformed into Emergency Remote Education (henceforth ERE) conditions as the natural drawback of the immediate lockdown conditions. While the developed countries have handled the digital technology integrated classes with average success, developing countries have been challenged with various problems caused by insufficient experience and preparedness. Moreover, underdeveloped countries have fallen behind the rest of the world countries due to unequal technical conditions during ERE. Turkey is counted among the developing countries, and inspecting lecturers' digital technology integration practices into their actual classroom practices has become an obligation in order to grasp the immediate picture of education during ERE. Martin (2020) stresses that very little has been explored about ELT teachers' digital technology integration levels, and ERE shall be viewed as an opportunity to explore it via SAMR Model.

The number of studies examining the digital technology integration levels into education from the SAMR Model perspective was very limited in the literature it was so rare in the field of education, and the number of researches is even not available in the field of language education in Turkey setting. The primary aim of the present study was to examine the ELT lecturers' digital technology integration levels via SAMR Model during Emergency Remote Education (ERE) process caused by COVID-19 Pandemic. The secondary aim was to discover whether ELT lecturers' digital technology integration levels during the ERE could be predicted via independent variables or not. To explore the abovementioned purposes, the following research questions guided the present study.

1. What are the levels of digital technology integration of English Language Teaching lecturers in online teaching in terms of the SAMR model (for each level) during the time of emergency remote education in the process of the COVID-19 Pandemic in Turkey?

2) Do English Language Teaching lecturers' levels of digital technology integration change significantly in accordance with their gender, age, seniority, background education, and online teaching experience at the time of emergency remote education in the COVID-19 Pandemic process?

Literature Review

Each century has brought its idiocractic features and paradigm shifts in terms of education in history, and those features and paradigm shifts were ranging from schooling systems to teaching designs, along with educators' beliefs, consciousness, competencies, etc. Today's education system was designed in parallel to the Industrial Age, but tomorrow's education system is going to be designed in accordance with the Digital Technology Age (Arstorp, 2018). The major transformation in the field of education is discernible between before and after the 2000s;

education was in the form of knowledge flow from teacher to students before the 2000s, but the roles have changed in the 2000s. Moreover, today's education has gained a mission of growing up graduates in seek of navigating reliable sources and evolving in the same line with the century (OECD, 2015). Since the 21st century is the age of digital technology, digital technology integration into education has become indispensable. The main attractive feature of integrating digital technology into the education field has been annihilating the problems aroused by geographical, and physical distances. Benefitting from distance education mode gives students the chance to equal education conditions to a certain extent, and helps to trigger higher-order thinking skills (Morris, 2021). Adversely, distance education also creates the digital divide which is known as the gap between those who have access to technology and who do not have access to the technology. Digital divide is the serious washback effect of the distance education on the target audience. Apart from that, distance education contributes to the expansion of all disciplines and grades of education via its cost-efficient and adaptable dimensions for both educators and students of 21st-century natives and immigrants. Its application requires time, passion, and careful design for ELT medium disciplines (Aziz, 2010; Hamilton et al., 2016; Kolb, 2019; Morris, 2021). In line with the increasing level of digital technology integration into education disciplines via distance education modes, a hierarchical technology evaluation model was developed in 2006 by Puentedura. The model centres on four basic tiers: Substitution, Augmentation, Modification, and Redefinition. Martina (2020) states that technology-integrated classes should not be misunderstood with the replacement of manual sources with digital sources, they are redesigning authentic tasks by providing students with the opportunities to extend their ICT competencies and language skills. That is why the SAMR model was considered to be the perfect fit model to evaluate and reflect on ELT lecturers' digital technology integration levels during ERE. Each abbreviation in the model name stands for the different levels of digital technology integration (Substitution, Augmentation, Modification, Redefinition).

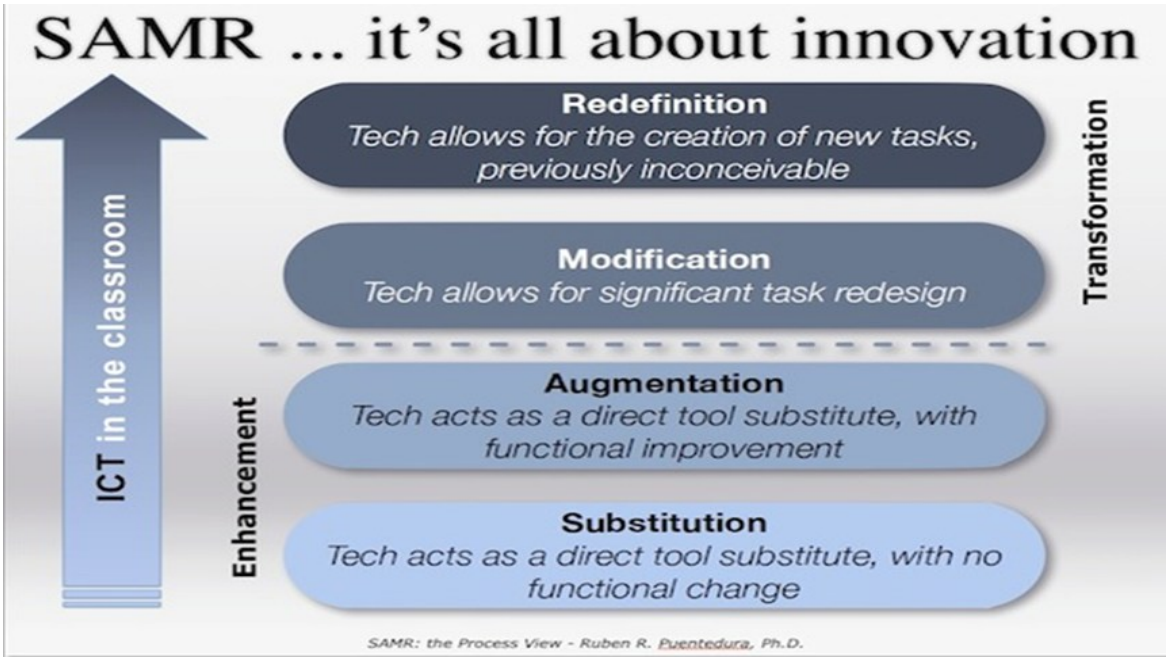

Figure 1. SAMR Model (Puentedura, 2006)

Substitution level: As the name refers, Substitution means that technology is acted as a direct tool to substitute manual sources without change (Puentedura, 2006). In the real-life application, it functions like an overhead projection, without any outer interferences to the ready manual sources, just replacing the paper-pen format with the online teaching platforms (Beisel, 2017).

Augmentation level: Puentedura summarizes this level as technology is acted as a direct tool to substitute the manual sources with average functional improvement. It proceeds similarly to the Substitution level with small changes regarding employing the functional applications of dictionary programs, applications or online dictionaries while studying four main skills. Through employing the Augmentation level, the aim is to enrich the mechanic or productive activities in numbers.

Modification level: While the focal aim is to enrichen the identified classroom tasks in the first two levels, the Modification level aims at enhancing higher-order skills via a variety of changes in the planned tasks.

Modification level pokes the meaning of a significant level of redesigning the existing practices functionally (Puentedura, 2006). Technology integration does not mean presenting various functions of the technology, but it regards guiding students to reach 21st-century century communication and collaboration skills via transformation of the immediate practices.

Redefinition level: Puentedura (2006) defines redefinition as the level of permitting the creation of novel tasks or projects, formerly unthinkable. The focus is on 21st-century critical thinking and creativity skills. In terms of language education, students are given chances to practice their four main language skills in accordance with the academically level-appropriate lesson designs. The predominant purpose here is to make language students feel out of the box in the learning process via authentic practices.

The SAMR Model and technology are interrelated. Technology is perceived as a source which has the power to change teaching practices, and the content of the SAMR Model focuses on the levels of integrating digital technology into actual classroom practices with the purpose of duplicating the functional application of the digital technology. Therefore, each level of the SAMR Model describes a different dimension of employing digital technology for teaching practices.

METHOD

Research Design

For the present research study, a correlational research design was adapted in order to clarify the relationship between the dependent and the independent variables via a quantitative research tool. The correlational research design enables researchers to examine and reflect on the level of the relationship among variables, which are sometimes more than two, and it permits researchers to evaluate whether one variable controls the other variable regarding statistical values (Creswell, 2003). With the purpose of responding to the immediate research questions, correlation analysis was employed for the relationship examination between the two constructs. Dörnyei (2007) cites that correlation analysis shows to what extent the two implicated constructs are interrelated.

In addition, the correlational research design was selected in order to ensure credible, objective, transferrable, and cost-effective data (Creswell, 2003). Furthermore, quantitative data collection tools enabled reaching a high number of participants via online questionnaires under the COVID-19 lockdown conditions.

Data Collection Tools

Suggested by Dörnyei (2007), the wording of the items in the questionnaire was examined in terms of clarity and simplicity in order to abstain from the negative formation (i.e., using no or not) and ambiguous language structures. In the seeking process of the appropriate questionnaire, the research questions, the purpose of the study, and the related literature were the main frame, and SAMR Model Perception Questionnaire developed by Thomas Martin in 2020 was employed in the present study with the permission of the owner of the questionnaire. The questionnaire was selected, since it was appropriate for the context and the participants of the research study. The questionnaire is a forty-one-item Likert-type with a three-factor model ranging from “never” to “always”, and was developed with the aim of evaluating lecturers’ digital technology integration regarding four levels: Substitution, Augmentation, Modification, and Redefinition. In order to check the reliability of the questionnaire, a piloting study with 173 participants in the form of an online questionnaire via Google Forms was conducted, and it was found reliable with the Cronbach's Alpha value at the cut-off point .905 ($\alpha > 0.7$). In the actual questionnaire, an extra session was added to the questionnaire for collecting demographic information of the participants for the second research question.

Table 1. Breakdown of the items

Levels	Number of the items
Substitution	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Augmentation	14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29
Modification	30, 31, 32, 33, 34, 35, 36,
Redefinition	37, 38, 39, 40, 41

Participants

243 ELT lecturers took part in the study voluntarily under the COVID-19 lockdown conditions. There were not any specific participant selection criteria, and convenience sampling was applied (Creswell, 2003). Participants were reached via institutional e-mails after getting the permission from the legal authorities. By bounding on the NUTS (Nomenclature of Territorial Units for Statistics) data, 20 different public and foundation universities dispersed geographically into the seven districts of Turkey were selected for the study by caring the density of ELT lecturers in each district. Out of 1077 ELT lecturers' contact, 243 of them agreed to take part in the online questionnaires: 162 (66.7%) of them were female lecturers and 81 (33.3%) of them were male lecturers.

Data Collection Process

The data collection process was conducted via online questionnaires through institutional e-mail servers by relying on an Ethics Committees Approval Letter. Candidate participants were sent e-mails including information about the purpose of the study, short PowerPoint slides on the SAMR Model prepared by the researcher, a YouTube video link prepared by Puentedura, and Ethics Committee Approval Letter apart from the questionnaire link. The data collection process took five months, and participants were sent reminder e-mails one month after the first mail.

Data Analysis

The total number of participants determined the data analysis test method. Since the total participant number was 243, parametric tests were decided to run after checking the distribution of normality of the data.

Table 2. Data Analysis Methods

Research Questions	Data Analysis Method
1	= >Descriptive analysis
2	= > Hierarchical multiple regression

Preliminary tests (the distribution of normality, linearity, multicollinearity, and homoscedasticity) were run in order to employ the multiple hierarchical regression tests (Pallant, 2011).

Research Ethics

In the first step, the approval of the owner of the questionnaire was consulted for employing the questionnaire in the present study. Secondly, an Ethical Committee approval letter was collected and sent to the legal authorities in terms of employing the questionnaire. Thirdly, participants were informed about the purpose of the study and all related ethics. Their consent was consulted via a consent form, and participants were ensured that their names would be kept anonymous.

FINDINGS

This study was conducted with 243 ELT lecturers working at 20 various universities in Turkey via online questionnaires in the ERE process caused by the COVID-19 pandemic in 2020-2021. The data were analysed through SPSS program (22.00), and the findings were presented in accordance with the research questions.

Findings 1: What are the levels of digital technology integration of English language teaching lecturers in online teaching in terms of the SAMR model (for each level) during the time of emergency remote education in the process of the COVID-19 pandemic in Turkey?

The purpose of the first research question was to investigate ELT lecturers' digital technology integration levels' breakdown into the SAMR Model levels (Substitution, Augmentation, Modification and Redefinition). The SAMR Model Perception Questionnaire had 41 items with three Likert-type items: 1) Never; (2) Sometimes; (3) Always. As recommended by Martin (2020), a mean value of 3 (mean value = 3) was enrolled as the positive signal, a mean value of 2 and higher (mean value ≥ 2) was enrolled as a lukewarm-to-positive signal, a mean

value of 2 (mean value = 2) was enrolled as the neutral signal, and mean value lower than 2 (mean value < 2) was enrolled as a negative signal of the relevant items regarding the SAMR Model.

Since the total number of participants exceeded 200 (N = 248), parametric analysis was employed as the first step in pursuit of testing the distribution of normality. In order to be ensured about the distribution of normality, outliers analysis was conducted and Residual statistics were presented in Table 1.

Table 3. Residual Statistics for Outliers Analysis

	Min.	Max.	Mean	SD.	N
Predicted Value	34.35	46.30	40.88	2.27	248
Std. Predicted Value	-2.87	2.38	.00	1.00	248
Std. The Error of Predicted Value	.97	.281	1.66	.35	248
Adjusted Predicted Value	34.60	46.62	40.89	2.28	248
Residual	-38.37	32.62	.00	10.68	248
Std. Residual	-3.55	3.02	.00	.99	248
Stud. Residual	-3.59	3.05	.00	1.00	248
Deleted Residual	-39.22	33.33	-.00	10.94	248
Stud. Deleted Residual	-3.68	3.10	.00	1.00	248
Mahal. Distance	.96	15.43	4.97	2.51	248
Cook's Distance	.00	.04	.00	.00	248
Centred Leverage Value	.00	.06	.02	.01	248

Two main lines were examined in this table: Residual line and Cook's Distance. According to the literature, Std. Residual referenced interval value should be between - 3.29 and + 3.29, (Frost, 2019). Table 1 showed that there was an outlier value in the data set. Cook's Distance line supported the Residual line, since it was higher than + 1 (Cook's Distance Max. > + 1). To identify outliers lines in the data, the Casewise Diagnostics were examined in Table 2.

Table 4. Casewise Diagnostics for Outlier Examination

		Std. Residual	SAMR Model	Predicted Value	Residual
Case Number	64	-3.36	2.00	38.37	36.37
	66	-3.55	.00	38.37	-38.37
	70	-3.02	71.00	38.37	32.62
	74	3.01	71.00	40.01	30.98
	160	3.05	72.00	40.59	31.40

Table 2 showed which lines were the outliers, and were required to be omitted from the data set in order to guarantee the distribution of normality. The outliers were; 64, 66, 70, 74, 160, and they were omitted, and the rest of the responses (N = 243) were analysed via SPSS. Following this, the Kolmogorov-Smirnov test was applied (see Table 3). When the distribution of normality was ensured (D (243) = 0. 045, p > 0.001), parametric tests were run.

Table 5. Kolmogorov-Smirnov Test for Distribution Of Normality

	Statistic	df	Sig.
SAMR Model	.050	243	.045

After ensuring the distribution of normality, descriptive statistics were conducted. In the first stage, ELT lecturers' general technology integration levels via SAMR Model were checked before the level-specific analysis.

Table 6. General Overview of the SAMR Model Descriptives in Descending Way

Item numbers	*n*	*M*	*SD*
3	243	2.76	.50
9	243	2.65	.57
14	243	2.61	.56
5	243	2.58	.55
6	243	2.56	.62
1	243	2.54	.63
39	243	2.46	.63
8	243	2.45	.69
12	243	2.38	.82
25	243	2.37	.71
18	243	2.33	.68
36	243	2.31	.72
31	243	2.30	.60
32	243	2.27	.68
34	243	2.25	.70
11	243	2.24	.73
2	243	2.22	.73
27	243	2.22	.74
4	243	2.21	.75
40	243	2.20	.75
7	243	2.18	.82
38	243	2.17	.72
23	243	2.16	.77
20	243	2.12	.78
33	243	2.07	.71
35	243	2.07	.74
17	243	2.05	.73
41	243	2.04	.76
10	243	2.04	.78
15	243	2.02	.76
24	243	1.99	.82
37	243	1.96	.76
22	243	1.95	.80
26	243	1.94	.80
16	243	1.90	.72
13	243	1.83	.85
19	243	1.82	.73
21	243	1.56	.72
30	243	1.34	.63
28	243	1.31	.59
29	243	1.29	.61

In an explanatory manner, the highest mean values intensified around the Substitution and Redefinition levels, and the lowest mean values intensified around the Modification level. The majority of the mean values fluctuated around the mean values between 2 and 3, which referred lukewarm to the confident approach. This data pointed out that a dominant number of the participants nearly "Always" dealt with technology in classes

theoretically at the basic level during ERE. Undoubtedly, a detailed examination was necessary for each of the SAMR Model levels in order to reflect on the participants' digital technology integration practices.

Table 7. Descriptive Statistics of The SAMR Model Levels

	n	*M*	*SD*
Substitution	243	2.36	4.06
Augmentation	243	1.98	5.72
Modification	243	2.09	2.79
Redefinition	243	2.17	4.52

Table 5 showed that except for the Augmentation level (M = 1.98), the rest of the three levels' cumulative mean values were close to each other.

1.1. Substitution level:

This level inspected to what extent ELT lecturers substituted manual sources with digital ones without any personal interference via 13 items.

Table 8. Substitution level Descriptives

Items	Mean	SD
Item 1	2.54	.63
Item 2	2.22	.73
Item 3	2.76	.50
Item 4	2.21	.75
Item 5	2.58	.55
Item 6	2.56	.62
Item 7	2.18	.82
Item 8	2.45	.69
Item 9	2.65	.57
Item 10	2.04	.78
Item 11	2.24	.73
Item 12	2.38	.82
Item 13	1.83	.85
Cumulative mean value	2.36	

It was clear with the high mean values that Substitution level got a certain and undeniable place in the online classes within 12 items except Item 13 (M = 1.83), which did not change the main result.

1.2. Augmentation level

The Augmentation level is the second level in the hierarchical evolution of the SAMR Model and inquiries about enriching the digital classes via augmented practices.

Table 9. Augmentation Level Descriptives

Items	*M*	SD
Item 14	2.61	.56
Item 15	2.02	.72
Item 16	1.90	.72
Item 17	2.05	.73
Item 18	2.32	.68
Item 19	1.81	.73
Item 20	2.12	.78
Item 21	1.56	.72
Item 22	1.95	.80
Item 23	2.16	.77
Item 24	1.99	.82
Item 25	2.37	.71
Item 26	1.94	.80
Item 27	2.22	.74
Item 38	1.31	.59
Item 29	1.29	.61
Cumulative mean value	1.98	

According to Table 7, participants' reinforcement of the online classes fell behind the positive indicator (M = 3) and items mainly yielded either neutral or negative mean values, which generated negative cumulative mean value (M = 1.98). The Augmentation level was performed poorly.

1.3. Modification level

This third level examined the alterations made by ELT lecturers via various reasons on the practices in the online classes during ERE.

Table 10. Modification Level Descriptives

items	*M*	*SD*
Item 30	1.34	.65
Item 31	2.30	.60
Item 32	2.27	.68
Item 33	2.07	.71
Item 34	2.25	.70
Item 35	2.07	.74
Item 36	2.31	.72
Cumulative mean value	2.09	

Modification level descriptives did not fluctuate around extreme ends, and they densified around the mean value of 2 and 2.50. The concerned values refer that online practices expose to various alterations in different ways.

1.4. Redefinition level:

The fourth level inquired about 243 participant ELT lecturers' redesigning practices in the online classes by benefitting from the technology.

Table 11. Redefinition Level Descriptives

items	*M*	*SD*
Item 37	1.96	.76
Item 38	2.17	.72
Item 39	2.46	.63
Item 40	2.20	.75
Item 41	2.04	.76
Cumulative mean value	2.17	

Excluding item 37, the rest of the items generated mean values higher than 2, which implied favourably supported redesigned ELT practices.

1.5. The Summary of the first research question findings:

Figure 2 was prepared by relying on the descriptive statistics reached via SPSS analysis in order to summarize the responses to research question one.

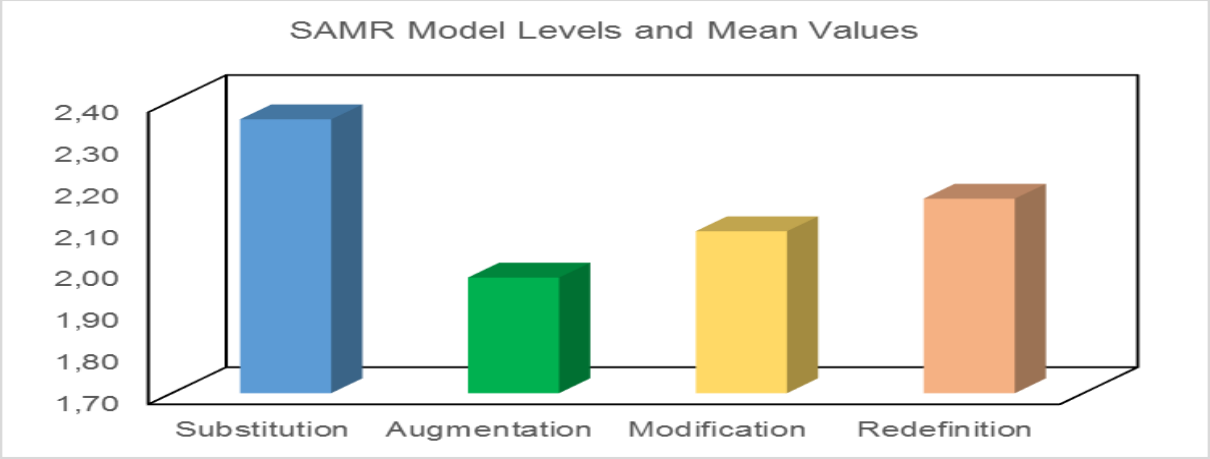

Figure 1. Findings of SAMR Model Levels

As seen in Figure 1, although some gaps were discerned among the items, in the whole picture, cumulative mean values of the levels were adjacent to each other excluding the Augmentation level. The findings signified that participants' practices of SAMR Model levels were not so far from each other, and their digital technology integration levels did not evolve hierarchically.

Findings 2. Do ELT lecturers' levels of digital technology integration change significantly in accordance with their gender, age, seniority, online teaching experience and background education level at the time of experiencing emergency remote education in the Covid-19 Pandemic process?

Hierarchical multiple regression analysis was run to respond to the second research question. Pallant (2011) suggests that four pre-conditions (distribution of normality, linearity, multicollinearity, and homoscedasticity) should be examined before employing the hierarchical multiple regression analysis.

The distribution of normality was already checked for the first research question and proved in Figure 2 that it was guaranteed. As all columns were mainly under the u-shaped curve in the histogram, the Distribution of normality was ensured.

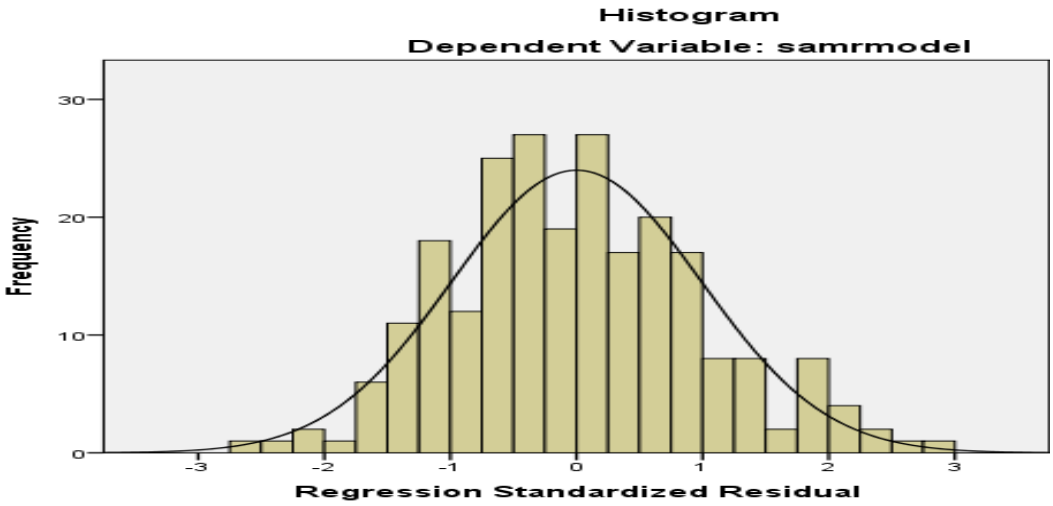

Figure 2. Histogram For SAMR Model

A multicollinearity check was conducted firstly via Pearson Correlation analysis with the cut-off point r < .80, and the VIF value was controlled. In the related literature, if the VIF is < 4, there is no multicollinearity problem (Hair et al., 2010).

Table 12. Multicollinearity Check of the Independents

	Condition Index	VIF
(Constant)	1.00	
Gender	6.40	1.02
Age	6.75	2.98
Seniority	7.62	3.06
Background education	12.21	1.16
Online education experience	15.81	1.13

The second way of checking multicollinearity was to control the Condition Index value of the Independent Variables. Condition Index value should be (CI < 30) lower than 30 to ensure multicollinearity (Büyüköztürk, 2011). As seen in Table 10, The Condition Index (CI) values were: CI < 30, so multicollinearity was ensured.

Homoscedasticity was tested via the Durbin-Watson value as stated in the Model Summary of the Regression in Table 13.

Table 13. Model Summary of the Hierarchical Multiple Regression

Model	Enter
R	.214
R Square	.04
Adjusted R Square	.02
Std. Error of the Estimate	8.89
Durbin-Watson	1.84

Table 11 showed that homoscedasticity was ensured, since the Durbin-Watson value was 1.84, which was in the referenced interval (1 < DW <3). According to Table 11, the variations in the SAMR Model levels were defined with a ratio of .02 % by Gender, Age, Seniority, Background education, and Online Teaching Experience.

Table 14. The Relationship between the SAMR Model and Independent Variables

		SAMR MODEL	Gender	Age	Seniority	Background Edu.	Online teaching exp.
Pearson Correlation	SAMR Model	1.00	-.12	.013	.00	.12	.12
	Gender	-.12	1.00	.155	.09	.00	02
	Age	.01	.15	1.00	.81	.29	23
	Seniority	.00	,097	.81	1.00	.32	.29
	Background education	.12	,00	.29	.32	1.00	.26
	Online teaching experience	.12	,02	.23	.29	.26	1.00
Sig.(1-tailed)	SAMR Model	.	,.02	.42	.49	.02	.02
	Gender	.026	.	.00	.067	,.49	.36
	Age	.42	.00	.	.000	.00	.00
	Seniority	.49	.06	.00	.	.00	.00
	Background education	.02	.49	.00	.00	.	.00
	Online teaching experience	.02	.36	.00	.00	.00	.

According to Table 14, a significant relationship was noticed between:
SAMR Model and Background education (r (241) = .12, p < .05),

SAMR Model and Gender (r (241) = -.12, p < .05),
SAMR Model and Online teaching experience (r (241) = .12, p < .05).
No significant relationship was noticed between:
SAMR Model and Seniority (r (241) = .00, p > .05),
SAMR Model and Age (r (241) = .01, p > .05).

Table 15. Anova Table of the Hierarchical Multiple Regression

Model		Sum of Squares	df	Mean Square	F	Sig.
Enter	Regression	1088.59	5	217.71	2.22	.05
	Residual	22730.98	232	97.97		
	Total	23819.58	237			

Table 14 pointed out there were no purposeful effects of any of the independent variables (Age, Gender, Online Teaching Experience, Seniority, Background education) alone when the rest of the independent variables were controlled over the dependent variable (SAMR Model).

Table 16. Hierarchical Multiple Regression

Variable	Unstandardized		Bootstrapping BC'a %95 CI		Standardized			Correlations		Collinearity Statistics	
	B	Std.Error	Lower limit	Upper limit	ß	*t*	Sig.	Part	Partial	Tolerance	VIF
(Constant)	39.81	2.94	34.01	45.61		13.51	.00				
Gender	-2.69	1.37	-5.41	.01	-.12	-1.95	.05	-.12	-.12	.97	1.02
Age	.61	1.20	-1.76	2.98	.05	.50	.61	-.03	.03	.33	2.98
Seniority	.96	1.04	-3.01	1.09	-.10	-.92	.35	.05	.06	.32	3.06
Background education	1.41	.88	-.33	3.15	.11	1.59	.11	.10	.10	.85	1.16
Online teaching experience	1.39	.80	-.18	2.98	.11	1.73	.08	.11	.11	.88	1.13

By defining background education, age, seniority, online teaching experience, and gender as independent variables, ELT lecturers' digital technology integration levels via SAMR Model were attempted to be foreseen via Hierarchical Multiple Regression analysis. According to the analysis, an inconsequential regression model, F (5, 232) = 2.22, p>.001) was revealed. Moreover, the variance of the dependent variable was defined only at the proportion of .02 % (R2 adjusted = .03) by the independent variables (background education, age, seniority, online teaching experience, and gender).

According to the Multiple Hierarchical Regression Model of the present study:
Independent variable Background education does not predict the SAMR Model dependent variable positive and meaningful, ß = .11, t (232) = 1.59, p >.05, pr2= .0108.
Independent variable Age does not predict the SAMR Model dependent variable positive and meaningful,
ß =.05, t (232) = .50, p >.05, pr2= .09.
Independent variable Seniority does not predict the SAMR Model dependent variable positive and meaningful, ß = -.10, t (232) = -.92, p >.05, pr2= -.0036.
Independent variable Online teaching experience does not predict the SAMR Model dependent variable positive and meaningful, ß = .11, t (232)= 1.73, p >.05, pr2= .0121.
Independent variable Gender does not predict the SAMR Model dependent variable positive and meaningful, ß = -.12, t (232) = -1.95, p >.052, pr2 = .0144.
The Regression Formula of the present study is (for each new participant to the present study)
SAMR Model = 39.81 + -2.69 * Gender + .61 * Age + -.96 * Seniority + 1.41 * Background Education + 1.39 * Online Teaching Experience.

DISCUSSION & CONCLUSION

The present study set out to discover ELT lecturers' levels of digital technology integration into their online classes during the ERE process via the SAMR Model developed by Puentedura (2006). Since the SAMR Model can be accepted as an average novel model in the field when compared to common topics in the field, the number of studies on its implication is not high. However, there are still limited studies in the world context that employed the SAMR Model for evaluating the digital technology integration into the online classes of various modes of distance education in divergent disciplines in the field of education (Hockly, 2012; Jude et al., 2014; Romrell, Kidder & Wood, 2014). Nonetheless, very scarce of them were conducted in the field of language education (Kukulska et al., 2017), and the present study tried to contribute fill the gap in the field to a certain degree in the early years of the SAMR Model development.

Although Puentedura (2006) mentions a hierarchical evolvement among the levels in the SAMR Model similar to Bloom's Taxonomy developed in 1956, in the immediate study the situation was different. In contrast to related studies' hierarchical evolution model (Hamilton et al., 2016; Jude et al., 2014; Martina, 2020; Romrell et al., 2014), the findings in the present study showed that ELT lecturers' digital technology integration levels did not evolve increasingly in one certain way. The results are in contradiction with that of Norris and her friends (2017) in terms of not reaching the higher-order skills stepwise. While ELT lecturers' digital technology integration practices centred around the Substitution level at the beginning of the COVID-19 ERE process, the volume of the practices did not pursue the Augmentation level with a higher promotion as expected. While the Augmentation level was not promoted decently, ELT lecturers signalled via their self-reports that they mainly interfered with either content or general frame of the tasks by transforming them for various reasons ranging from academic level equilibration to students' interest areas. In contrast to enriching activities, modification activities were dominantly performed at the degree of research assignments on the internet. At the Redefinition level, the target is to enrich transformative and higher-order skills (Martin, 2020). However, in the present study, it was not preferred and performed deservedly as much as the Substitution level practices, since the Redefinition level practices demand time and effort of the lecturers via redesigning each online task from tap-to-toe by caring for students' academic levels, and interests, in addition to the syllabus and methodological approaches. Although descriptive statistics of the Redefinition level and the Substitution level were not at extreme edges, the Redefinition level could not meet the intended target. Similar to two studies in the field of distance education (Gürer et al., 2016; Yaman, 2015), online classes and teaching platforms substituted only face-to-face classes and manual sources like an overhead projector in the ERE process. According to the results, the reason can be explained by the last-minute transition from face-to-face classes to synchronous classes without caring about the preparedness level. There was not an opportunity to conduct a need analysis on productive ELT syllabus, content, materials, infrastructure, and training appropriate for synchronous language education (Akkaş, 2023). Unavoidably, it became a tough process to benefit from the advantages of synchronous teaching and meet the goals of synchronous language education. Naturally synchronous education mode in ERE presented lecturers with a large number of materials, but it could not be grasped for the sake of productive ELT education, since synchronous language classes were not interactive enough regarding quality, class hours, and lecturers' preparedness level apart from expectancies of the students. That was why synchronous classes were stuck at the Substitution level (Pepeler et al., 2018). One another indispensable drawback of the ERE process was that productive skills could not be polished as much as receptive skills in the ELT (Doğan, 2020).

The secondary aim was to examine whether ELT lecturers' digital technology integration levels vary in terms of the independent variables: age, gender, background education level (Bachelor, Master, and Ph.D.), online teaching experience, and seniority via a hierarchical multiple regression model. In the same vein as the studies on distance education; gender and online teaching experience independent variables were found to be related to the ELT lecturers' digital technology integration levels regarding the SAMR Model evaluation (Akkaş, 2023; Işıklı, 2017; Pepeler et al., 2018; Seven, 2012; Şirin & Tekdal, 2015). The participants' background education levels were noticed closely related to the SAMR Model, despite seniority and age. ELT lecturers did not perform digital technology integration practices in accordance with their age or seniority in their profession.

In an explanatory manner, participant ELT lecturers were quite content with the utilisation of the Substitution level, which implied that most of the participants were short of updated professional training, and conscious of 21st-century education initiations. It is a pity to reveal that English language education during ERE fell behind the needs of the competitive global world, and it stepped backward by reasoning purely on manual sources, passive students, dull content, and low-level technical preparedness. In a nutshell, on the same side with

Howlett et al. (2019), higher-order skills could not be promoted in synchronous education during ERE in Turkey as targeted in face-to-face education in contrast to most of the world countries regarding language education.

Eventually, some recommendations are summed in parallel to the discussions and conclusions. It is vital to benefit from the advantages of employing budget-friendly synchronous language classes by investing in educators' preparedness level, since educators are the first chain in the language education circle. They should be qualified with both technical and methodological background education via professional training sessions organized regularly by the institutions either on a small scale or on a national scale. Apart from that, they are required to be provided with digitally authentic materials in order to make students feel out of the box. Need analysis is suggested to be made at regular intervals via short and user-friendly self-reports or 15-minute meetings in organizations for both motivating them and filling up the gaps. In this way, institutions message lecturers that they are safe and ready for all modes of education with supportive administrators. Fulfilment of those suggestions enables making sudden transmissions from face-to-face education to synchronous education smoothly and speedy to a great extent. We should not fall behind the century, as every minute technology is advancing along with education, and pandemics such as COVID-19, catastrophes, and natural disasters (such as earthquakes, tornados, and floods) are hitting the world within the century one after another, and all of a sudden. The only dependable weapon to battle against them is technology, which enables continuity and sustainability via its effective integration into daily life. Depending on that, it is wise to keep in mind that fixing a broken chair is more difficult than creating it from zero point. We should always be alert for all kinds of unusual circumstances beforehand, instead of trying to fix the problems while experiencing them.

As exists in all kinds of research studies, the present study has limitations as well. This study was conducted quantitatively to reach a higher number of participants in order to ensure generalisability and to represent the whole context under COVID-19 lockdown conditions. Moreover, the numerical data is short of adequate explanation from the participants' voices. That is why it is advisable to employ a qualitative study in order to back up the numerical data and to reveal the underneath reasons of the iceberg by examining all the blind points of the self-report research tool.

Conflict of Interest

The researchers have no conflict of interest in this study state.

Statements of Publication Ethics

Both of the researchers hereby declare that they obeyed, and pursued all of the ethical conditions via the Ethical Committee Approval Letter issued with E-358553172-300-00001845121 on the date of 02.11.2021.

Researchers' Contribution Rate

Both of the researchers' contribution rates are equal to the present manuscript.

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