

## International Society for Technology in Education (ISTE) Standards for EFL Students as 21st Century Skills

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### Abstract:

This survey research aimed at investigating International Society for Technology in Education (ISTE) Standards of EFL Students in an English Education Department at a university in Pekanbaru, Riau. The method used was descriptive quantitative which involved 121 samples. The samples were selected by using random sampling technique from third, fifth, and seventh semesters. The questionnaire adopted from Hazamayeh (2021) used as the main instrument to collect the data. The data was analyzed by using descriptive statistics (the sum of score, mean and standard deviation) which then interpreted descriptively. The study revealed that the students' mean of ISTE Standards reached 3.92 which was categorized into a *Moderate* level. It was measured by calculating the average score of the ISTE six indicators namely Creativity and Innovation; Communication and Collaboration; Research and Information Fluency; Critical Thinking, Problem Solving and Decision Making; Digital Citizenship; and Technology Operations and Concepts. This "Moderate" level indicates that the EFL students are still in on going process to maximize their ability to use technology as a means of learning. In short, identifying students' ISTE standards can be a primary step in preparing students to adapt and adopt today's globalized and digitalized world. This study implies that English teachers have to facilitate EFL students with ISTE standards by integrating the six ISTE indicators into ELT courses.

**Keywords:** *ISTE Standards, EFL students, English Education Department*

## 1. INTRODUCTION

Globalization is a very broad concept that covers business, technology, information, jobs, and so on. It can be perceived positively or negatively by different people based on the context. All descriptions of globalization state that it has the power to create a borderless world where people communicate, share, and do business (Altan, 2017). To achieve this, two mediums are needed, namely technology and English. Technology plays an important role in helping people do many things easier. The English language is the international language that has been agreed upon for the purpose of making global communication possible. In the 21st century, technology, especially the internet, and the English language work together to set the same standard in international relations, so people from different cultures can interact and understand each other (Hismanoglu, 2012).

The magnitude of the influence of technology and English language in the 21st century affects the way and system of teaching and learning in the majority of schools and universities around the world. Technology, like smart phones, laptops, and the internet, is used to make the teaching and learning process easier. For instance, teachers and students

can access e-books so they do not have to go to the library. Meanwhile, English has become a mandatory subject in majority of schools and universities around the world. It is inseparable from the influence of globalization in maximizing the spread of English for the purpose of international trade (Kachru & Smith, 2009). It seems to indicate that schools or universities cannot avoid including English in the learning curriculum (Hismanoglu, 2012).

For English non-native speakers, they can learn English language deeply through English Department in universities as English as a Foreign Language (EFL) students. It is not surprising that they are encouraged to use technology, especially internet, during their study. Lecturers, in English Department University, are encouraged as well because it is unavoidable. According to Becker (2000), technology, like internet, is regarded as an important instructional instrument in language classes which teachers or lecturers can have convenient access, be sufficiently prepared, and have some freedom in the curriculum. The teaching and learning of English has been going on for many years and its significance continues to grow and is driven in part by the influence of technology (Kalay, 2017). It can be underlined that both lecturers and students at English Department Universities have to master two basic knowledge, technology and English language at the same time.

With the rapid development of science and technology, the emergence of multimedia technology and its application to teaching, the display of audio, visual and animation effects brings its own color to the teaching of English and becomes a favorable basis for reform and exploration of models in teaching and learning English in this new era. It is proven that multimedia technology plays a positive role in encouraging students' activities and initiatives in the process of learning English in the classroom (Hazaymeh, 2021). Dockstader (2008) states that technological innovation has gone well with the growth of English and changed the way students communicate.

The old way of learning is dominated by a teacher-centered approach and many teachers still apply the teaching process by lecturing, including English department universities. The teacher-centered approach can indeed guide the development of students' ability to understand concepts, but does not provide many opportunities for them to develop independence in learning (Trilling & Fadel, 2009). Independent learning can be realized if learning is student-centered learning. Referring to the 2017 International Society for Technology in Education (ISTE) standards, student-centered learning is successful if creativity and effective use of technology are included in supporting their learning process. ISTE seeks to empower students through the use of technology as a learning standard (Smith, 2017). With easy access to information via internet, the ISTE standard should have been implemented in all schools and universities.

ISTE standards for students relate to the skills and knowledge that students need to teach and learn effectively and live productively in an increasingly global and digital world (ISTE, 2014). ISTE has identified several sets of educational technology standards for students, teachers, administrators, trainers, and computer science educators that reflect standards for learning, teaching and leading in the digital age (ISTE, 2014). The importance of setting these standards is the fact that technology has changed not only what needs to be learned, but also how it is learned. The ISTE Standards set standards of excellence and best practice in learning, teaching and leadership with technology in education.

For EFL students, ISTE Standards can be a new method of learning to achieve academic success. Several studies have shown positive results for EFL students as they use technology and ISTE Standards in learning process. A study conducted by Hazaymeh (2021) showed that online learning through ISTE Standards helps EFL students to develop

high creativity and innovation, communication and collaboration, research and information fluency, critical thinking, problem solving, decision making, and digital citizenship. The results also show that most of the respondents (86.66%) managed to acquire English proficiency through online distance learning which indicates a flexible and appropriate learning environment. Al Zumor et al. (2013) also stated that the use of technology tools for learning for EFL students enriches English skills effectively, increases students' confidence and cooperation for language learning. Hos et al. (2016) show that most of the EFL students have a positive attitude towards online learning because it has many advantages for developing their language skills, especially listening, and their vocabulary.

Several studies assured the importance of 21st-century skills in the digital age (Himmelsbach, 2019; Shandu, 2019; Shelly et al., 2013). For instance, Shelly et al. (2013) states that 21st Century Skills Partnership is a national organization that focuses on infusing technology skills in K-12 and higher education to support and improve teaching and learning through integrating skills into different academic subjects. She added that digital students can be hyper communicators who use multiple tools to communicate, multitaskers who do several things at once with ease and goal-oriented as they follow multiple goals at the same time. Besides, Shandu (2019) describes digital education as a “revolutionary method of teaching” to deliver information remote and learning process. ISTE supports all areas of K-12 education, community colleges and universities, and teacher education organizations.

Considering the importance of ISTE standards must be possessed by students; the schools and universities need to measure their students' ISTE levels in order to know and facilitate how to develop and integrate the standards during students' education. In short, identifying students' ISTE standards can be a primary step in preparing students to adapt and adopt today's globalized and digitalized world. Thus, the researchers intended to conduct a research on EFL students using ISTE as standards in learning and teaching process with the title “International Society for Technology in Education (ISTE) Standards for EFL Students as 21<sup>st</sup> Century Skills”. The purpose of this research is to find out EFL students' ISTE Standards in English Language Teaching classrooms.

## **2. METHOD**

This quantitative research was designed as a survey study. Survey research provides a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of that population. The type of survey used was cross-sectional with the intent of generalizing from a sample to a population (Creswell 2014). In this study the researchers used one variable that was EFL students' International Society for Technology in Education (ISTE) standards in English Language Teaching Classroom. The population of this research was the English students consisted of nine classes which were selected from third, fifth, and seventh semesters. The selected EFL students was based on their learning experiences that had been integrated into the ISTE standards/indicators. To select the sample, the researchers chose random sampling technique. In order to minimize sampling error to 10%, the researchers involved 121 students. The questionnaire was used to measure the ISTE Standards of students' in learning English language in 21st century. The questionnaire consisted of 6 standards which relate to 21st century skills. To collect the data, the researchers used questionnaire adopted from Hazamayeh (2021). It consisted of 24 statements that they were included in 6 standards.

**Table 1 The Blueprint of ISTE Questionnaire**

<b>Standards</b>	<b>Total of Statements</b>
Creativity and Innovation	4
Communication and Collaboration	4
Research and Information Fluency	4
Critical Thinking	4
Digital Citizenship	4
Technology Operations and Concepts	4
<b>Total</b>	<b>24</b>

The researchers used the Likert scale in collecting the data. It means, every item in the questionnaire consist of 5 choices with the scores range from 1 until 5, that is “Strongly Agree” (5), “Agree” (4), “Neutral” (3), “Disagree” (2), and “Strongly Disagree” (1). The data collected was analyzed using the SPSS statistical package. A descriptive statistics analysis was carried out in order to analyze the score of students answers. After analyzing data by using Descriptive Statistics, the researchers continued analyzing the data by categorizing them into Katz and Kahn range of Likert scale (1978) as follow:

**Table 2 The Range of Likert Scale**

<b>No.</b>	<b>Range</b>	<b>Category</b>
1	1.0 - 2.49	Low
2	2.50 - 3.99	Moderate
3	4.00 - 5.49	High

**Katz & Kahn (1978)**

This range level is importantly used to identify the category of the scores whether in “Low”, or, “Moderate”, or “High” in order to know the score of EFL students in implementing ISTE Standards.

### **3. FINDINGS AND DISCUSSION**

#### **EFL Students' ISTE Standards in ELT Classroom at English Education Department**

There are six indicators in determining the ISTE standard of students, and each indicator has four statements with a total of twenty-four statements. The researchers distributed questionnaires to students, and processed the data using the SPSS version 20 program. The researchers provided the data in details as follows.

##### **1) EFL Students' ISTE Standard on Creativity and Innovation**

In the first indicator, there are 4 statements distributed to the respondents of this study. To summarize respondents' perceptions, it can be seen clearly in the following tabel:

**Tabel 3 EFL Students's ISTE Standard on Creativity and Innovation**

No.	Statements	N	Mean	SD
1	Technology in generating ideas, processes, and products	121	4.19	0.84
2	Technology in creating works	121	4.05	0.68
3	Technology in practicing and exploring complex issues	121	4.03	0.68
4	Technology in identifying and forecasting trends	121	3.97	0.81
<b>Mean</b>			<b>4.06</b>	<b>0.76</b>

Source: SPSS Version 20

Tabel 3 shows the data that indicates students' ISTE standard on creativity and innovation standards. It presents the statement "Technology in generating ideas, processes, and products" as the highest standard in this indicator (Mean = 4.19), while the statement "Technology in identifying and forecasting trends" as the lowest standard in this category (Mean = 3.97). It can be seen that generally the EFL students' standard on creativity and innovation is categorized as high. The mean of this indicator is 4.06 and according to the range of likert scale, this score indicates "high" level. In addition, the table 3 also shows the standard deviation that is 0.76. The low score of standard deviation means that all of the answers from respondents are appearantly homogenous.

## 2) EFL Students' ISTE Standard on Communication and Collaboration

In the second indicator, there are 4 statements distributed to the respondents of the study. To summarize respondents' perceptions, it can be clearly seen in the following tabel:

**Tabel 4 EFL Students' ISTE Standard on Communication and Collaboration**

No.	Statements	N	Mean	SD
1	Digital Media used to interact and collaborate with others	121	3.96	0.87
2	Digital Media used to communicate and to multiple networkings	121	3.95	0.82
3	Digital Media used to develop understanding in cultures and awareness	121	3.94	0.75
4	Digital Media used to contribute and produce original works or solve problems	121	3.90	0.85
<b>Mean</b>			<b>3.93</b>	<b>0.82</b>

Source: SPSS Version 20

Tabel 4 shows the data that indicates students' ISTE standard on communication and collaboration. It presents the statement "Digital Media used to interact and collaborate with others" as the highest standard in this indicator (Mean = 3.96), while the statement "Digital Media used to contribute and produce original works or solve problems" as the lowest standard in this category (Mean = 3.90). It can be discerned that generally the EFL students' standard on communication and collaboration with mean 3.93 is categorized in "moderate level". In addition, the table also shows that the standard deviation of this indicator is 0.82. The low standard deviation indicates that all of the answers from respondents are homogenous.

### 3) EFL Students' ISTE Standard on Research and Information Fluency

In the third indicator, there are 4 statements distributed to the respondents. To summarize respondents' perceptions, it can be seen obviously in the following tabel:

**Tabel 5 EFL Students' ISTE Standard on Research and Information Fluency**

No.	Statements	N	Mean	SD
1	Digital tools to create plans, strategies, and to seek inquiry	121	3.86	0.77
2	Digital tools to locate, organize, analyze, evaluate, and synthesize, information	121	3.85	0.80
3	Digital tools to evaluate and select information based on the required tasks	121	3.90	0.70
4	Digital tools to process data, to complete and present results	121	3.91	0.78
<b>Mean</b>			<b>3.88</b>	<b>0.76</b>

Source: SPSS Version 20

Tabel 5 shows the data that indicates students' ISTE standard on research and information fluency. It presents the statement "Digital tools to process data, to complete and present results" as the highest standard in this indicator (Mean = 3.91), while the statement "Digital tools to locate, organize, analyze, evaluate, and synthesize, information Applying digital tools to locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media" as the lowest standard in this category (Mean = 3.85). It can be summed up that generally the EFL students' standard on research and information fluency is categorized as moderate. The mean of this indicator is 3.88, and according to the range of likert scale this score means in a "moderate level". In addition, the table also shows that the standard deviation of the indicator is 0.764. The score of standard deviation shows that all of the answers from respondents are in homogenous distribution.

### 4) EFL Students' ISTE Standard on Critical Thinking, Problem Solving, and Decision Making

In the fourth indicator, there are 4 statements distributed to the respondents. To summarize respondents' perceptions, it can be seen clearly in the following tabel:

**Tabel 6 EFL Students' ISTE Standard on Critical Thinking, Problem Solving, and Decision Making**

No.	Statements	N	Mean	SD
1	DT and resources as to identify, define, and to investigate problems and questions	121	3.84	0.81
2	DT and resources as to plan, manage, develop, and to complete a task/project	121	3.82	0.77
3	DT and resources as to collect, analyze, identify data and solutions	121	3.90	0.72
4	DT and resources as to practice many processes and perspectives and to seek solutions	121	3.77	0.76
<b>Mean</b>			<b>3.83</b>	<b>0.76</b>

Source: SPSS Version 20

Tabel 6 shows the data that indicates students' ISTE standard on critical thinking, problem solving, and decision making. It presents the statement "DT and resources as to collect, analyze, identify data and solutions" as the highest standard in this indicator (Mean = 3,90), while the statement "DT and resources as to plan, manage, develop, and to complete a task/project" as the lowest standard in this category (Mean = 3.77). Based on the result above, it can be seen that generally the EFL students' standard on critical thinking, problem solving, and decision making is categorized as moderate. The mean of this indicator is 3.83, and according to the range of likert scale this score means moderate. In addition, the table also shows that standard deviation is 0.76. The score of standard deviation means that all of the answers from respondents are homogenous.

### 5) EFL Students' ISTE Standard on Digital Citizenship

In the fifth indicator, there are 4 statements distributed to the respondents. To summarize respondents' perceptions, it can be clearly seen in the following tabel:

**Tabel 7 EFL Students' ISTE Standard on Digital Citizenship**

No.	Statements	N	Mean	SD
1	ICT is to practice legal, safe and responsibility of information use	121	4.11	0.75
2	ICT is to show a right attitude in collaboration, productivity and learning	121	3.91	0.81
3	ICT is to exhibit individual responsibility in learning	121	3.73	0.81
4	ICT is to facilitate and exhibit leadership for citizenship in digital era	121	3.68	0.81
<b>Mean</b>			<b>3.85</b>	<b>0.79</b>

Source: SPSS Version 20

Tabel 7 shows the data that indicates students' ISTE standard on digital citizenship. It presents the statement "ICT is to practice legal, safe and responsibility of information use" as the highest standard in this indicator (Mean = 4.11), while the statement "ICT is to facilitate and exhibit leadership for citizenship in digital era" as the lowest standard in this category (Mean = 3.68). In addition, mean of this indicator is 3.85, and according to the range of likert scale this score means moderate. In addition, the table also shows that standard deviation is 0.79. The low score of standard deviation means that all of the answers from respondents are homogenous.

### 6) EFL Students' ISTE Standard on Technology Operations and Concepts

In the sixth indicator, there are 4 statements distributed to the respondents. To summarize respondents' perceptions, it can be clearly seen in the following tabel:

**Tabel 8 EFL Students' ISTE Standard on Technology Operations and Concepts**

No.	Statements	N	Mean	SD
1	Technology facilitates users' understanding of technology systems	121	4.04	0.75
2	Technology helps to choose and use various applications	121	3.96	0.85
3	Technology provides troubleshoot systems and applications	121	3.90	0.85
4	Technology facilitates users to transfer various knowledge	121	3.98	0.89
			3.97	0.83

Source: SPSS Version 20

Tabel 8 shows the data that indicates students' ISTE standard on technology operations and concepts. It presents the statement "Technology facilitates users' understanding of technology systems" as the highest standard in this indicator (Mean = 4.04), while the statement "Technology provides troubleshoot systems and applications" as the lowest standard in this category (Mean = 3.90). In addition, mean of this indicator is 3.97, and according to the range of likert scale this score means moderate. In short, the ISTE standard of EFL students is categorized into a "moderate" level. In addition, the table also shows that the standard deviation calculated is 0.83. The low score of standard deviation means that all of the answers from respondents are homogenous.

In sum, the six ISTE standards of EFL students of English Education Department in this study can be seen in the following table:

**Table 9. Descriptive Statistics of ISTE Standards of EFL Students**

Sum	: 10736
Mode	: 4.00
Median	: 4.00
Mean	: 3.92
Standard Deviation	: 0.794

The result shows that ISTE standards of EFL students in English Education Department is moderate. This result is confirmed by Mean score, which is 3.92. In addition, the table also shows that the total of students' score from all indicators is 10736, mode of students' score is 4.00, median of students' score is 4.00, and for standard deviation is 0.79. The score of standard deviation means that all of the answers from respondents are homogenous.

## DISCUSSION

This research findings reveal that the ISTE standard for EFL students is in a "moderate" level. The finding shows that the average score of ISTE standards for the EFL students at English Education Department in a University in Pekanbaru, Riau reached a mean = 3.92. Most participants' responses of the given questionnaire are "Agree" and "Neutral". Based on the six indicators of ISTE standards, "Creativity and Innovation" standards acquires "high level", while the other 5 indicators are in "moderate level". The result of this study is in line with Hazaymeh (2021) and Aldosari, et al. (2020) whereby the high score on "Creativity and Innovation standard" can be interpreted as the maximum efforts of the students to use technology to help them to find original idea for any tasks that are given to them in the class or even for any issues they find outside the class. Students strongly demonstrate creative thinking, build knowledge, and develop innovative products and processes using technology. Technology has helped the students to generate new idea, create original works, practice models and simulations for exploring complex systems and issues, and identify trends and forecast possibilities.

The moderate score on "Communication and Collaboration" in this study can be interpreted as an ongoing process towards the formation of productive cooperation through technology between fellow students or fellow social beings. The result is agreed by Al-saif (2009) and Ayad & Ajrami (2017) that students moderately use digital media and environments to communicate and work collaboratively, including remotely, to support individual learning and contribute to the learning of others. Students are trying to use



technology as a medium to discuss a problem, develop cultural understanding and global awareness, and contribute to project teams to produce original works or solve problems.

The moderate score on “Research and Information Fluency” signifies an ongoing process of maximizing technology as a means of expanding literacy on any issue. This result is in parallel with Al-saif (2009) and Ayad & Ajrami (2017) that the students are in the process of utilizing the diversity and breadth of information available over the internet to create strategic plans to guide the investigation of a problem, analyze and evaluate a problem, learn to fit a problem into a specific theory, and learn to process data. Students adequately apply digital tools to collect, evaluate, and use information.

The moderate score on “Critical Thinking, Problem Solving, and Decision Making” means an ongoing process to maximize technology as media for thinking academically. The result is similar to Hazaymeh’s (2021) study, Al-saif (2009) and Ayad & Ajrami (2017) as they claim that students moderately use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. This is clearly an effort from students to become individuals who think critically on various issues that arise. Through technology, they are trying to learn to get all the possibilities for a problem and develop various perspectives that will later be useful for developing problem solving.

The moderate score in “Digital Citizenship” in this research be understood as an ongoing process of maximizing technology to learn to behave ethically. The result is agreed by Al-saif (2009) and Ayad & Ajrami (2017) since students sufficiently understand humanity, cultural and social issues related to technology and practice legal and ethical behavior. Students are learning to achieve responsible and professional standards of behavior such as learning to obtain legal sources of knowledge, learning to cooperate with colleagues, and learning to become potential leaders.

The moderate score in “Technology Operations and Concepts” is evidence of students’ desire to know optimally about the function of technology. The result is in line with Al-saif (2009) and Ayad & Ajrami (2017). Students demonstrate an adequate understanding of technology concepts, systems and operations. It is an ongoing process of understanding systems from technology, making effective use of applications, providing system and application troubleshooting, and transferring current knowledge to learn new technologies.

Overall, EFL students at English Education Department in a University in Pekanbaru are in the process of meeting ISTE standards, which they acquire a moderate level in the 6 standards. The result is in parallel with Al-saif (2009) and Ayad & Ajrami (2017). As a matter of fact, EFL students at English Education Department have shown signs of being quite technologically literate because at this present time the global world has demanded the use of technology as part of lifestyle. However, the maximization of using technology as a medium for learning still needs to be improved and upgraded.

#### **4. CONCLUSION**

From the results of the research, ISTE standards of EFL Students in a university in Pekanbaru is in a moderate level. It can be concluded that students are still in the process of maximizing technology use as a means of learning. From a social perspective, students, who are not yet familiar with the use of technology in education, have not fully understood technology as a learning tool, because most of them assume that technology is as a tool to seek entertainment either via social media or online games. However, with the current technology developments, students have gradually understood that technology has important roles in education. In many campuses and workplaces, fluent technology skills

are needed to meet the challenges of an ever-increasing era. The results of this study indirectly suggest students to maximize their understanding of technology as a learning medium. With the various facilities and applications provided by technology, students should be able to use them for the sake of their learning and solving many problems in their academic terms. As a matter of fact, this study has limited the study in terms of identifying EFL students' ISTE standards that slightly informs the students' ISTE levels. Meanwhile, the English teachers actually need such concise teaching and learning activities that can develop EFL students' ISTE standards. This study implies that English teachers could help EFL students meet ISTE criteria by including the six ISTE indicators into ELT courses. Furthermore, the suggestion for future researchers is that they can conduct an in-depth study related to technology use in the EFL classrooms that can give rise to new ideas about the cultures and benefits of learning through technology.

## REFERENCES

- Aldosari, M.A.S. (2020). The Future of Higher Education in the Light of Artificial Intelligence Transformations. *International Journal of Higher Education*, Vol. 9, No. 3:145-151.
- Al Saif, A. A. 2009. Risks Associated With The Use of The Internet and Its Impact Upon Students' Awareness of Perverse Issues: Literature Review. *Acta Didactica Napocensia*, Vol.2, no.4, pp.34-37.
- Altan, M. Z. (2017). Globalization, English Language Teaching and Turkey. *International Journal of Languages' Education and Teaching*, 5(4), 764-776.
- Al Zumor, A.W.Q.A, et al. (2013). EFL Students' Perceptions of a Blended Learning Environment: Advantages, Limitations and Suggestions for Improvement. *English Language Teaching*, 6(10), 95-110.
- Ayad, F. I., & Ajrami, S. J. (2017). The degree of implementing ISTE standards in technical education colleges of Palestine. *TOJET: The Turkish Online Journal of Educational Technology*, 16(2), 107-118.
- Becker, H. J. (2000). Who's Wired and Who's Not: Children's Access to and Use of Computer Technology. *The Future of Children*, 10(2), 44-75.
- Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Method Approaches*. California: SAGE Publications.
- Dockstader, J. (2008). Teachers of the 21st Century Know the What, Why, and How of Technology Integration. *T.H.E. Journal*, 26(6), 73-74.
- Dondlinger, M. J., McLeod, J., Vasinda, S. (2016). Essential Conditions for Technology-Supported, Student-Centered Learning: An Analysis of Student Experiences With Math Out Loud Using the ISTE Standards for Students. *Journal of Research on Technology in Education*, 1-16.
- Hazaymeh, W.A. (2021). EFL Students' Perceptions of Online Distance Learning for Enhancing English Language Learning During the Covid-19 Pandemic. *International Journal of Instructions*, 14(3), 501-518.

- Himmelsbach, V. (2019). Pros and Cons of Technology in the Classroom in 2019. Retrieved from <https://tophat.com/blog/6-pros-cons-technologyclassroom>
- Hismanoglu, M. (2012). The Impact of Globalization and Information Technology on Language Education Policy in Turkey. *Procedia – Social and Behavioral Sciences*, 31, 629 – 633.
- Hos, R., et al. (2016). Turkish EFL Students' Perceptions of Blended English Courses in a Teacher Education Program. *International Journal of Social Sciences and Education Research*, 2(3), 774-784.
- ISTE. (2014). *ISTE Standards*. Retrieved from <http://www.iste.org/standards>
- Kachru, Y. & Smith, L. E. (2009). The Karmic Cycle of World Englishes: Some Futuristic Constructs. *World Englishes*, 28(1), 1–14.
- Kalay, D. (2017). What Makes an Effective EFL Teacher? Investigations on Student and Teacher Perspectives. *International Periodical for the Languages, Literature and History of Turkish or Turkic*, 12(25), 421-444.
- Katz, D., & Kahn, R. L. (1978). *The Social Psychology of Organizations*. New York: Wiley.
- Kovalik, C., Kuo, C.-L., & Karpinski, A. (2013). Assessing Preservice Teachers' Information and Communication Technologies Knowledge. *Journal of Technology and Teacher Education*, 21(2), 179–202.
- Larsen-Freeman, D., & Anderson, M. (2011). *Techniques & Principles in Language Teaching*, 3rd ed. New York: Oxford University Press.
- Marwa, M., & Herdi, H. (2023). 4C Skills' Integration in English Teaching Documents Used in EFL Classroom. *ELT-Lectura: Studies and Perspectives in English Language Teaching*, 10(1), 1-10.
- Merç, A. (2015). Using Technology in the Classroom: A Study with Turkish Pre-Service EFL Teachers. *The Turkish Online Journal of Educational Technology*, 14(2), 229-240.
- Overbaugh, R. C., Lu, R., & Diacopoulos, M. (2015). Changes in Teachers' Attitudes Toward Instructional Technology Attributed to Completing the ISTE NETS\*T Certificate of Proficiency Capstone Program. *Computers in the Schools*, 32(3–4), 240–259.
- Sandhu, G. K. (2019). Impact of digitization on higher education. *International Journal of Applied Research*, 5(4s), 300-302.
- Sharma, S. (2019). *Descriptive Statistics*. Horizons University.
- Shelly, G. B., Gunter, G. A., & Gunter, R. E. (2011). *Teachers Discovering Computers: Integrating Technology in a Connected World*, 7th ed. Boston: Course Technology.

- Smith, R. (2017). ISTE Releases New Standards for Educators to Maximize Learning for All Students Using Technology. Retrieved from <https://www.iste.org/explore/Press-Releases/ISTE-Releases-New-Standards-for-Educators-to-Maximize-Learning-for-All-Students-Using-Technology>
- Stepanovienė, A. (2013). Cooperative Learning in The Context of Foreign Language Teaching and Learning. *Public Security and Public Order*, 9(9), 246-254.
- Trilling, B., & Fadel, C. (2009). *21st Century Skills: Learning for Life in Our Times*. San Fransisco: Jossey-Bass.
- Vucaj, I. (2020). Development and Initial Validation of Digital Age Teaching Scale (DATS) To Assess Application of ISTE Standards for Educators in K–12 Education Classrooms. *Journal of Research on Technology in Education*, 1-23.