

ENGLISH TEACHERS' READINESS IN ICT APPLICATIONS FOR 21st CENTURY LEARNING

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Abstrak

Penelitian ini dilakukan karena fenomena beberapa orang guru Bahasa Inggris di Rayon 3 Kabupaten Siak jarang menggunakan media teknologi informasi dan komunikasi (TIK) untuk kebutuhan mengajar di kelas. Guru-guru tersebut lebih fokus pada penggunaan buku pegangan/ referensi dan jarang memanfaatkan internet untuk mendapatkan materi ajar pendukung. Oleh karena itu, penelitian ini bertujuan untuk memperoleh gambaran kesiapan guru dalam penggunaan aplikasi dasar TIK untuk proses pembelajaran. Subjek penelitian ini adalah 49 guru Bahasa Inggris dari berbagai jenjang, mulai dari Sekolah Dasar hingga Sekolah Menengah Atas, yang tergabung dalam kelompok guru Bahasa Inggris Rayon 3, dari tiga kecamatan yakni, Minas, Tualang dan Kandis, di Kabupaten Siak, Propinsi Riau. Metode penelitian ini adalah survei dan menggunakan desain cross-sectional, Instrumen penelitian menggunakan angket berisi 12 pertanyaan, yang tujuh diantaranya adalah pertanyaan inti tentang persepsi penguasaan aplikasi Office (word, excel, dan powerpoint) dan persepsi kemampuan penggunaan internet untuk browsing, email, social media, blog. Hasil penelitian menunjukkan bahwa nilai mean berada pada angka 2.57. Untuk nilai modus dan nilai tengah (median) berada pada angka yang sama yakni 3.0. Untuk komponen nilai variabilitas, ditemukan bahwa standar deviasi relatif tinggi yakni 0.707, nilai varian 5, dan rentang nilai minimum dan maksimum berada pada angka 1-4. Kesimpulan penelitian ini menunjukkan kesiapan guru didalam penggunaan TIK berada pada level "cukup" dan "baik." Mengacu pada hasil temuan, guru-guru senior perlu memperoleh pendampingan didalam penggunaan TIK agar mereka mampu dan siap didalam penggunaan berbagai media TIK untuk menghadapi tantangan pembelajaran pada abad 21.

Kata kunci: Pembelajaran Abad 21, Kesiapan Guru, Penggunaan TIK, Kemampuan Dasar TIK

INTRODUCTION

The development of digital technologies has significantly changed the way students learn in the 21st century¹. Media-based Information and Communication Technology (ICT) plays an important role in facilitating and accelerating the development of science, technology, and communication systems². Therefore, students need to be adept in information, media and technology skills to advance in life, jobs, as well as citizenship³.

¹ OECD, *Are There Differences in How Advantaged and Disadvantaged Students Use the Internet, PISA in Focus* (Paris, 2016) <<https://doi.org/http://dx.doi.org/10.1787/888933253149>>.

² ITU, 'How ICTs Are Accelerating the SDGs', *ITU News Magazine*, 2017 <https://www.itu.int/en/itunews/Documents/2017/2017-03/2017_ITUNews03-en.pdf>.

³ P21, 'Framework for 21st Century Learning', *Partnership for 21st Century Learning*, 2019 <http://static.battelleforkids.org/documents/p21/P21_Framework_Brief.pdf>.

The integration of ICT in the learning process has proven to be effective in facilitating students' learning activities⁴. Supporting this, Sabti & Chaichan⁵ found that students highly consider and have positive perception on the usefulness of computer applications in subject learning, especially English. Henceforth, teachers should accentuate the use of 21st century skills to students' learning activities and resources⁶. In the implementation, teachers should cogitate facets, like providing book contents representing the 21st century skills⁷ and supplying literacies and media based ICT⁸.

Cited in JPNN⁹, Muhadjir Effendy, former Minister of Education and Culture, stated that teachers must be proficient in the use of ICT, as learning resources are available in online platform. Considering this, teachers' awareness in the ICT use becomes crucial and incontestable. They ideally must be ready to use resources, including applications, to deal with the 21st century teaching strategy. Further, to accommodate the techno-savvy generation, teachers need to facilitate students in the use of technology on instructional process¹⁰.

A question of standardizing teachers' readiness that might be come up is, "what competency frameworks should teachers have?" To respond this, UNESCO set up six competency frameworks as the guideline for teachers in the 21st century learning, namely ICT literacy for education, curriculum design and assessment, pedagogical competence, practice of

⁴ P.A Ertmer and A.T. Ottenbreit-Leftwich, 'Teacher Technology Change: How Knowledge, Confidence, Beliefs, and Culture Intersect', *International Society for Technology in Education*, 42.3 (2010), 255–84 <<https://files.eric.ed.gov/fulltext/EJ882506.pdf>>.

⁵ A.A. Sabti and R.S. Chaichan, 'Saudi High School Students' Attitudes and Barriers toward the Use of Computer Technologies in Learning English', *SpringerPlus*, 3 (2021) <<https://doi.org/https://doi.org/10.1186/2193-1801-3-460>>.

⁶ BfK, 'EdLeader21 Network: Leading Together to Advance 21st Century Learning for Every Student', *Battelle for Kids*, 2019 <<http://www.battelleforkids.org/networks/edleader21-network>> [accessed 27 December 2021].

⁷ A.B. Rinekso, 'The Representation of 21st Century Skills in an Indonesian EFL Textbook', *LLT Journal*, 24.1 (2021), 191–211 <<http://e-journal.usd.ac.id/index.php/LLT>>.

⁸ V. Sukmayadi and A.H. Yahya, 'Indonesian Education Landscape and the 21st Century Challenges', *Journal of Social Studies Education Research*, 11.4 (2020), 219–34 <<https://jsr.org/index.php/jsr/article/view/901/481>>.

⁹ JPNN, 'Mendikbud Minta Guru Terampil Gunakan Teknologi Informasi Sebagai Wahana Pembelajaran', *JPNN*, 2019 <<https://www.jpnn.com/news/mendikbud-di-era-digital-ini-guru-harus-terampil-gunakan-teknologi-informasi-sebagai-wahana-pembelajaran?page=2>>.

¹⁰ Carmen C. Lewis and others, 'Faculty Use of Established and Emerging Technologies in Higher Education: A Unified Theory of Acceptance and Use of Technology Perspective', *International Journal of Higher Education*, 2.2 (2013) <<https://doi.org/http://dx.doi.org/10.5430/ijhe.v2n2p22>>.

digital skills, practice of organizational and management concepts, and professional development in learning¹¹.

Yet, applying technology for learning is facing challenges, especially for internet connectivity. Poor network in rural areas obstructs teachers to access current resources for their professional development in learning. Ramani¹² asserted that it is an absurdity to expect a better teaching quality, with technology approach, from teachers living in rural areas. In other words, teachers' readiness in basic ICT applications in learning process should be supported by adequate network devices and system.

In Indonesian educational contexts, teachers' readiness in basic ICT applications is still concerned with the issues of infrastructure, like internet devices¹³, and implementation of the infrastructure¹⁴. Pertaining to the findings in Dwijatmoko¹⁵, some teachers were not technologically ready to employ media based ICT in teaching activities. However, some other studies found that more teachers become aware of ICT benefits and are ready for classroom learning¹⁶, including for online learning.^{17 18 19}

Considering the significance of ICT for classroom learning process, the researchers are interested in finding out basic ICT readiness of English teachers in three sub-districts, Minas, Tualang, and Kandis. Geographically, they are spread in the suburbs and countryside of Siak Regency, Riau. The formulation of this study is, "how ready are the English teachers in using basic ICT applications in classroom learning?" The findings are expected to reflect English

¹¹ UNESCO, 'UNESCO ICT Competency Framework for Teachers Version 3', *UNESCO*, 2018 <<https://en.unesco.org/themes/ict-education/competency-framework-teachers-oer>>.

¹² S. Ramani, 'The Internet and Education in the Developing World - Hopes and Reality', *Smart Learn. Environ.*, 8.2 (2015) <<https://doi.org/https://doi.org/10.1186/s40561-015-0015-x>>.

¹³ H. Elmunsyah, 'A Study of ICT Infrastructure and Access to Educational Information in the Outskirts of Malang.', *Acta Didactica Napocensia*, 5.2 (2012), 41–48 <<https://files.eric.ed.gov/fulltext/EJ1054292.pdf>>.

¹⁴ H.D Hermawan, D.N Yunita, and N. Deswila, 'Implementation of ICT in Education in Indonesia during 2004-2017', in *International Symposium on Educational Technology*, 2018 <<https://doi.org/https://doi.org/10.1109/ISET.2018.00032>>.

¹⁵ B.B.Dwijatmoko, 'INDONESIAN ENGLISH TEACHERS' READINESS FOR ICT USE', in *The 62nd TEFLIN International Conference* (Denpasar: TEFLIN - Universitas Udayana, 2015), pp. 686–92 <http://repository.usd.ac.id/3669/1/2110_Dwijatmoko_Teflin2016.pdf>.

¹⁶ David Sulistiawan Aditya, 'EMBARKING DIGITAL LEARNING DUE TO COVID-19: ARE TEACHERS READY?', *Journal of Technology and Science Education*, 11.1 (2021) <<https://doi.org/https://doi.org/10.3926/jotse.1109>>.

¹⁷ Nur Hadi Waryanto and Wahyu Setyaningrum, 'E-Learning Readiness In Indonesia: A Case Study In Junior High School Yogyakarta', in *International Seminar on Innovation in Mathematics and Mathematics Education*, 2014, pp. 645–54 <<http://eprints.uny.ac.id/24344/1/E-76.pdf>>.

¹⁸ Dindin Abdul Muiz Lidinillah and others, 'Elementary Teachers's Readiness to Implement Online Learning during the Covid-19 Pandemic', *Premiere Educandum : Jurnal Pendidikan Dasar Dan Pembelajaran*, 11.2 (2021), 172 – 190 <<https://doi.org/Doi.org/10.25273/pe.v11i2.9607>>.

¹⁹ Syahdan Syahdan, Herlinawati Herlinawati, and Marwa Marwa, 'Learning Media and Strategies Used by English Students in Practice Teaching during the Pandemic', *ETERNAL (English Teaching Journal)*, 12.2 (2021), 107–16 <<https://doi.org/10.26877/eternal.v12i2.9295>>.

teachers' readiness in basic ICT applications in learning process to cope with challenges of the 21st century learning and skills.

METHOD

This research used survey, with cross-sectional design. Ary et al.²⁰ stated that the design investigates a cross section (sample) of a population at a single point in time. The population was 56 English teachers at Siak Regency of Riau Province. The samples were 49 teachers, with 11 males and 38 females. They teach English in Primary (Elementary) and Secondary schools at the Rayon 3 of three sub-districts, Minas, Tualang, and Kandis.

In the data collection, the researchers used questionnaire with a four Likert-scale. The questionnaire was distributed through online form by using Google Form application. The number of questions was 12 questions. The 7 out of 12 questions asked teachers' range of mastery in using Office Applications (word, excel, and powerpoint) and accessing internet (browsing, email, social media, blog).

To analyze the data, this study employed descriptive statistics presenting central tendency (mean, median, and mode) and variability (variance, standard deviation, and range). To elaborate the analysis, this study also used tables comprising frequency and percentage.

FINDINGS AND DISCUSSIONS

In the findings, the researchers began the analysis by presenting demographic data of respondents' gender. To illustrate the result, the researchers presented the data in table 1.

Table 1. Respondents by Gender

	Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	11	22.4	22.4	22.4
	Female	38	77.5	77.5	100.0
	Total	49	100.0	100.0	

From the table 1, it was found that there were 11 male and 38 female teachers. To interpret with, female teachers were the major gender (77.5%) of total English teachers at the sub-districts of Minas, Tualang, and Kandis.

²⁰ Donald Ary and others, *Introduction to Research in Education*, 8th edn (Belmont, CA: Cengage Learning, 2010).

In this study, the researchers also investigated teachers' age range. The distribution of was grouped into four categories; age range 22-30, 31-39, 40-49, and 50-57. The result showed that teachers at age range 31-39 shared the biggest portion (42.9%) of total respondents. The data also displayed that teachers at age range 22-30 were close to a quarter (24.5%) of the all respondents. While, the other two range of ages, 40-49 and 50-57 in accumulation, shared a third of all teachers participated in this survey, with 18.3% and 14.3% respectively.

In this finding, the researchers also presented respondents' working experiences divided into three groups, 1-10 years, 11-20 years, > 20 years. In the data analysis, it was found that the teachers with working experiences up to 10 years shared almost half (49%) of the population. The result also showed the group with 11 to 20 years of experience shared more than a third (38.8%) of total respondents. While, the group having above 20 years of experience shared the smallest portion, with only 10.2% of all participants. This study also found one respondent preferred not to answer this question.

In this study, the researchers probed the use of computer to aid teachers in the learning process. The result was shown in the table 2.

Table 2. Using Computer Aids in learning

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	9	18.4	18.4	18.4
	Yes	40	81.6	81.6	100.0
	Total	49	100.0	100.0	

The table 2 above showed forty teachers (81,6%) have used computer as the aid for learning activities. It meant that more than three-quarter of the respondents have taken benefits of the ICT tools. In contrary, the table also displayed that nine teachers (18.4%) did not use the tool to support them for learning.

To elaborate the data in table 2, the researchers investigated the teachers' frequency in the use of computer for learning aid. The description was shown in table 3 below:

Table 3. Frequency of Using a PC/ Laptop with Internet Network (per week)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2-4 days	9	18.4	18.4	18.4
	5-6 days	6	12.2	12.2	30.6
	Every day	34	69.4	69.4	100.0
	Total	49	100.0	100.0	

The table 3 presented the frequency of using computer per week. It showed three cluster of computer use, namely 2-4 days, 5-6 days, and every day. The majority of teachers (69.4%) used PC/ Laptop every day. While, the other two clusters, 2-4 days and 5-6 days, shared only a third portion in accumulation, with 18.4% and 12.2% respectively.

The next data presentation were questions asking teachers' range of mastery in using Office Applications (word, excel, and powerpoint). The summary of teachers' mastery in using Office Applications was illustrated in the table 4 below.

Table 4. Descriptive Statistics of Teachers' Mastery in Office Applications (Word, Excel, PPT)

N	Valid	49
	Missing	0
Mean		2.00
Median		2.00
Mode		2.00
Std. Deviation		0.659
Variance		0.4
Range		
Min.		1
Max.		4
Sum		121

Table 4 presented descriptive statistics of the central tendency of teachers' mastery in Office applications that values of the elements, mean, median, and mode, were equivalent, with 2.00 each. The table also showed the values of standard deviation, variance, and range, with 0.659, 0.4 and 1-4 respectively. From the data, it can be interpreted that teachers' mastery in Office applications was at adequate level.

To analyze teachers' mastery in internet access, the researchers presented the data in the table 5, as shown below:

Table 5. Descriptive Statistics of Teachers' Mastery in Internet Access (Browsing, Email, Soc Media, Blog)

N	Valid	49
	Missing	0
Mean		3.00
Median		3.00
Mode		3.00
Std. Deviation		0.696
Variance		0.5
Range		
Min.		2
Max.		4
Sum		141

Table 5 presented descriptive statistics of the central tendency of teachers' mastery in internet access. The result showed the average value of teachers' mastery ($M = 2.90$), while, the values of mode and median were equivalent at 3.00. For the variability, the table displayed values of standard deviation (0.696), variance (0.5), and range minimum and maximum (2-4). Overall, these data illustrated that teachers' mastery in internet access were at the level of Good.

To further elaboration, this study presented summary of descriptive statistics of teachers' readiness in basic ICT applications, as shown in table 6 below :

Table 6. Summary of Descriptive Statistics of Teachers' Readiness in Basic ICT Applications

N	Valid	49
	Missing	0
Mean		2.57
Median		3.00
Mode		3.00
Std. Deviation		0.707
Variance		0.5
Range		
Min.		1
Max.		4
Sum		126

Table 6 presented descriptive statistics of the central tendency of teachers' mastery in internet access. The result showed the average value of teachers' readiness ($M = 2.57$), while, the values of mode and median were equivalent, with 3.00 each. For the variability, the table displayed values of standard deviation (0.707), variance (0.5), range minimum and maximum (1-4). Overall, these data presented that teachers' readiness were between Adequate and Good level.

Pertaining to the findings, the researchers scrutinized data at the respondents' age and working experiences. It was found that teachers categorized into senior (age group 50-57) had the lowest mastery in basic ICT applications. At this category, 2 out of 7 teachers were not able to use Powerpoint application and accessing blog and one teacher were not able to use excel. While, at group of 40-49, the researchers found that 2 out of 9 teachers were not able to use powerpoint, 2 out of 9 were not able to use email, and 3 out of 9 were not able to access blog. These data had tendency to confirm previous findings that the mastery of ICT applications were related to age factor.^{21 22}

²¹ Niken Kusumaning Palupi, Hermi Yanzi, and Berchah Pitoewas, 'Pengaruh Faktor Usia Terhadap Minat Dan Kemampuan Guru PPKN Dalam Penggunaan TIK', *Jurnal Kultur Demokrasi*, 3.6 (2015) <<http://jurnal.fkip.unila.ac.id/index.php/JKD/article/view/9149>>.

From these findings, the researchers found an implication that senior teachers need to get some supports from junior teachers having better mastery in basic ICT applications. They indeed require a guidance to maximize and integrate the use of ICT for learning activities. This benefited to decline a gap between the age group, as the senior teachers were typically slow in the use digital applications.²³

Maximizing the use of basic ICT applications are significant to keep teaching quality and teacher professionalism²⁴. Misyana²⁵ asserted that the mastery of ICT could support teachers to be professional. They could embed ICT use in lesson plans, specifically in the learning objectives. In advance, integrating media based internet contribute significantly for the users' development.²⁶

In term of 21st century skills, the findings imply that most teachers are ready to cope with challenges of ICT literacy for education required by UNESCO framework.²⁷ Teachers in Indonesia are demographically blessed by the bigger number of 'youth' teachers than senior teachers teaching in schools, with comparison of 3:1.²⁸ In advance, the data indicate that the teachers are more ready to employ culture of innovation and develop new learning traditions in this day.²⁹

CONCLUSION

This study aims at finding out teachers' readiness in basic ICT applications to support the educators in learning activities. The findings are significant to indicate their readiness to fulfill

²² Vinikke Wicaksono, S. Syahrial, and Marzul Hidayat, 'Analisis Penguasaan Guru Terhadap Teknologi Informasi Dan Komunikasi (TIK) Di Sekolah Dasar', *Jurnal Pendidikan Tematik DIKDAS*, 5.1 (2020) <<https://online-journal.unja.ac.id/JPTD/article/view/13703>>.

²³ Zulfa Hazizah and Henry Aditia Rigiarti, 'Kesenjangan Digital Di Kalangan Guru SD Dengan Rentang Usia 20-58 Tahun Di Kecamatan Rajabasa', *Jurnal Pendidikan Modern*, 7.1 (2021) <<https://doi.org/https://doi.org/10.37471/jpm.v7i01.284>>.

²⁴ Syahdan and Budi Lusandi, 'Developing Maritime Thematic Expressions on English Reading Materials Used in Indonesia: Junior High School Context', in *IOP Conference Series: Earth and Environmental Science*, 2018, CLVI <<https://doi.org/10.1088/1755-1315/156/1/012065>>.

²⁵ Misyana Misyana and others, 'Guru Profesional: Mengintegrasikan Informations And Communication Technologies (ICT) Dalam Pembelajaran PAUD', *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, 6.2 (2022) <<https://doi.org/https://doi.org/10.31004/obsesi.v6i2.1606>>.

²⁶ Jeremiah O. Ejemeyovwi and others, 'Internet Usage, Innovation and Human Development Nexus in Africa: The Case of ECOWAS', *Journal of Economic Structures*, 8.15 (2019) <<https://doi.org/https://doi.org/10.1186/s40008-019-0146-2>>.

²⁷ UNESCO.

²⁸ Kementerian Pendidikan dan Kebudayaan, 'Perkembangan Guru Tahun 2009/2010-2014/2015', 2016, 530 <http://publikasi.data.kemdikbud.go.id/uploadDir/isi_E555354C-E44B-4A71-BA30-55E5BF9CD804_.pdf>.

²⁹ C. Yáñez, A. Okada, and R. Palau, 'New Learning Scenarios for the 21st Century Related to Education, Culture and Technology', *Int J Educ Technol High Educ*, 12 (2015), 87–102 <<https://doi.org/https://doi.org/10.7238/rusc.v12i2.2454>>.

one of competency frameworks set by UNESCO. The frameworks are used as the guideline for teachers to cope with the the 21st century learning and skills.

From the findings, the researchers conclude that teachers' readiness in basic ICT applications were between Adequate and Good level (M= 2.57). In Office applications, their level was at adequate level. To add, the teachers' mastery of internet access was at the level of Good. In further analysis, senior teachers (age group 50-57) had the lowest mastery in basic ICT applications (powerpoint, excel, accessing blog), meaning that they need to be guided in the use of applications to cope with challenges of the 21st-century skills.

Indeed, this study has some constraints. The researchers lack of detail in presenting information about gap of ICT use by age factor and the applicable model of ICT guidance for senior teachers. Therefore, the researchers recommend these areas for future study.

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