

Nurturing students' 21st-century skills in the classroom: Indonesian EFL teachers' perceived practices

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This study aimed to assess the degree to which Indonesian secondary school EFL teachers have integrated 21st-century skills into their teaching and to investigate teachers' perceptions of their understanding of these skills and the significance of training for skill integration. Furthermore, the study sought to determine whether differences in perceptions regarding 21st-century skill integration existed between gender, school levels, and age. A survey of 141 teachers across 11 regencies or cities in a province in Indonesia was conducted. Results showed that the integration of 21st-century skills was unsatisfactory, as the frequency of integration was only between 1-3 times per month on average. Although half of the teachers had good knowledge of 21st-century skills, 40% had never received training on this topic. No significant differences were found in the level of integration based on gender and school level. However, age was a significant factor. Implications for policymakers, curriculum designers, pre- and in-service training programs, and teachers in the Indonesian context are put forward.

Introduction

In today's interconnected world, the impacts of globalisation are far-reaching and all-encompassing, affecting almost every aspect of life, including education. With the rise of technological advancements, economic changes, and social movements, educational institutions face a significant challenge in equipping students with the skills they need to succeed in the rapid and dynamic changes, including in the emerging era of Society 5.0, namely an era emphasising a human-centred approach to problem-solving that is driven by technology (Asih et al., 2022). Many countries that acknowledge the vital role of education in propelling a nation's progress have been questioning the effectiveness of schooling in generating competent human resources and setting benchmarks for educational attainment. Individuals incapable of applying their acquired knowledge in practical situations are considered as having received an inadequate education. Consequently, educational institutions, such as schools, are undergoing significant transformations and are tasked with preparing students with the skills they need to succeed in a technology-driven world, while also emphasising the importance of human values in solving social problems, which are now commonly referred to as 21st-century skills.

The notion of '21st-century skills' has been of great significance in the field of education in recent years. The concept encompasses a range of cognitive skills, such as critical thinking, problem-solving, and reasoning, as well as social skills such as communication, collaboration, and accountability. Currently, there has been a shift away from rote learning and superficial understanding toward cognitive processing that leverages personal

experiences and background knowledge. The rapid evolution of intercultural and social relationships, as well as environmental concerns, has made 21st-century skills increasingly important. It is widely accepted in the education sector that students must acquire these competencies to effectively address real-world problems. Silva (2009, p. 631) argued that although 21st-century skills are not new, they have become increasingly important due to the demand for workers who can find and evaluate information from various sources, make decisions, and generate new ideas. The need for learning and innovation skills has been evident since the time of Socrates and the Sophists, who were considered the first professional teachers (Johnson & Reed, 2008, p. 23). Socratic circles, a structured, dialogic, and student-driven approach to discussion, have been persistently used in modern classrooms to engage learners in inquiry and dialogue and to encourage them to take responsibility for their own learning (Copeland, 2005). According to Duncan (2009), 21st-century skills require creativity, persistence, problem-solving abilities, and effective teamwork. Quieng et al. (2015) asserted that the aim of 21st-century skills training is to equip students with the competencies they need to tackle real-world problems in the future and to promote global development.

In the Indonesian education system, fostering students' 21st-century skills is an integral part of the school curriculum. *Permendikbudristek* (Regulation of the Ministry of Education, Culture, Research, and Technology) Number 5 of 2022 is the latest regulation that sets out the skills that secondary school students in Indonesia must possess. The regulation emphasises the need for students to develop skills such as the ability to convey original ideas, carry out creative actions and works, find alternative solutions to problems, analyse problems and ideas, and present arguments that support their thinking, based on accurate data. These skills, known as the 4Cs (critical thinking and problem solving, communication, collaboration, and creativity and innovation), constitute four of the eleven graduate qualities assessed in national school accreditation. To ensure the development of these skills, each core subject in schools should incorporate them into the learning process, as guided by the framework provided in *Permendikbudristek* Number 16 of 2022, which outlines the benchmark for the learning process. Therefore, all teachers, including EFL teachers, must be prepared to nurture students' 21st-century skills, by creating engaging learning opportunities in authentic settings at every stage of the educational process (Anagün et al., 2016; Larson & Miller, 2011).

The incorporation of 21st-century skills into the English language learning classroom has been extensively discussed in academic literature. It is argued that the current approach to English language learning needs to evolve from the traditional methods used in the past few decades. The modern English classroom necessitates a deep understanding and practical application of adolescent literacy (Shoffner et al., 2010). To provide effective instruction in 21st-century literacies, a holistic approach is required, which assists students in comprehending how to access, evaluate, synthesise, and contribute to information (National Council of Teachers of English, 2007). According to Warschauer (2001), this can be accomplished by engaging students in complex project-based work that involves negotiation, collaboration, goal-setting, meaningful communication, and the creation of challenging outcomes. Specifically, Warschauer recommended that English language teachers implement learner-centred collaborative projects, where students collaborate with

their peers and individuals from diverse backgrounds, utilising a range of technological tools. Consequently, English language teachers should possess the ability to design activities that immerse learners in real-world tasks and problem-solving exercises that are relevant to their future needs.

Numerous studies have been undertaken around the globe on the topic of 21st-century skills. However, most were intervention studies that aimed to foster 21st-century skills (e.g., Abdullateef, 2021; Ashraf et al., 2017; Daud & Khalid, 2014; Duran et al., 2011; Gunawan et al., 2022; Husin et al., 2016; Jamali & Krish, 2021; Kurniawati & Nugraha, 2003; Pheeraphan, 2013; Thomas et al., 2011). Little research has been done to investigate whether teachers have integrated these skills into their classroom practices on a day-to-day basis. Thus, the present study is of importance as it sought to evaluate how much Indonesian EFL teachers at junior and senior high school levels have incorporated 21st-century skills into their teaching practices. Understanding teachers' practices is crucial in order to design effective professional development programs and assist them in integrating these skills. Considering the fast-paced technological advances and globalisation, which have resulted in new requirements for skills in the job market, research in this field is particularly important. Moreover, the study findings are anticipated to offer insights to curriculum designers, policymakers, and pre- and in-service training programs in the Indonesian context, regarding the abilities and methods of EFL teachers in promoting 21st-century skills during their classroom instruction and learning, thereby integrating these skills into teacher education programs. To guide this study, the research questions were:

1. To what extent have Indonesian junior and senior high school EFL teachers integrated 21st-century skills into their classroom teaching and learning?
2. What are teachers' perceptions of their knowledge of 21st-century skills and the importance of teacher training in 21st-century skills?
3. Are there significant differences in teachers' perceptions of 21st-century skill integration regarding gender, school level, and age?

Literature review

Since the 2000s, there has been a significant emphasis on the importance of 21st-century skills in the discourse of education and curricula. Several initiatives led by organisations such as the Organization for Economic Co-operation and Development (OECD) (2009) and major Information and Communication Technology (ICT) enterprises have defined and established these skills, aiming to enhance the alignment of school curricula with the changing needs of society (Voogt & Roblin, 2012). In 2010, the National Research Council (NRC, 2010) developed a framework comprising five skill dimensions, namely adaptability, complex communication/social skills, self-management, systems thinking, and non-routine problem-solving skills. Later, in 2011, the NRC published a report following their 3rd workshop, which categorised 21st-century skills into three major dimensions (NRC, 2011). The adaptability and self-management dimensions were merged into the intra-personal skills dimension, systems thinking and non-routine problem-

solving dimensions were amalgamated under the dimension of cognitive skills, and communication/social skills belong to the interpersonal skills dimension.

Moreover, the Partnership for 21st-Century Skills (P21) introduced a framework for 21st-century learning that outlined the competencies and support systems necessary for students to thrive in both work and life. It was divided into three primary themes: life and career skills, learning and innovation skills, and information, media, and technology skills (P21, 2021). In 2014, Ravitz proposed another framework that classified 21st-century skills into eight major dimensions, which included critical thinking, collaboration, communication, creativity and innovation, self-direction, making global connections, making local connections, and using technology as a tool for learning.

In brief, while there seems to be a lack of consensus on what constitutes 21st-century skills, which can lead to differences in how the frameworks are interpreted and applied, the frameworks provide a structured format for organising and understanding 21st-century skills and offer a clear and concise set of dimensions that can be used by educators and professionals to identify and develop these skills.

As mentioned previously, numerous studies have been done on the nurturing of 21st-century skills around the world. The review below is narrowed down to only a few studies that best assist our analysis. One study by Pheeraphan (2013) examined the effect of integrating information and communication technology (ICT) into the classroom on students' 21st-century learning skills in Thailand. Involving 69 undergraduate and 22 graduate students from two different 4-month courses, the results showed a significant improvement in students' skills at both levels. Another study by Husin et al. (2016) investigated the changes in 21st-century skills of 125 secondary school students in Malaysia after participating in a project-oriented, problem-based learning (POPBL) program, which resulted in a statistically significant increase in students' digital age literacy, inventive thinking, effective communication, and spiritual values. The study concluded that the use of POPBL approach could help students improve their 21st-century skills through project work by solving real-world problems using authentic and real-life experiences.

Motallebzadeh et al. (2018) investigated the relationship between 21st-century skills and the speaking and writing skills of 122 EFL learners in the Iranian context. The results showed that there was a significant relationship between the variables, in which the communication and collaboration skills had the highest correlation with students' speaking skills while the technology literacy sub-dimension had the highest correlation with students' writing skills. In a similar context, Ashraf et al. (2017) examined the effect of 21st-century teaching on students' listening and reading comprehension skills involving 25 students, with positive results. In Saudi Arabia, Abdullateef (2021) looked at the effect of four digital learning tools on students' 21st-century skills and attempted to identify gaps between distance learning and instructional activities. Using a quantitative approach, the findings revealed that digital learning tools had a great impact on students, in which there was a positive change from teacher-centred to learner-centred instruction. The results also

showed that remote learning improved students' responsibility that provided them with abundant opportunities to enhance their 21st-century skills.

To the extent of current research, few studies have examined teacher practices concerning 21st-century skill integration into their teaching. One such study conducted by Abualrob (2019) examined the role of 560 teachers in the West Bank and Gaza, Palestine, in nurturing their students' 21st-century skills. The findings revealed that teachers reported engaging in 21st-century skill activities only 1-3 times per month, indicating a need for improvement. Rice (2017) conducted another study in the USA context to explore teachers' beliefs about their ability to facilitate the acquisition of 21st-century skills across four different types of schools, and how they explained their capabilities in doing so. The findings indicated significant variations among teachers' perceptions of some 21st-century skills and discrepancies in teachers' approaches to the formative assessment of 21st-century skills. Additionally, teachers identified access to resources, opportunities for collaboration, and access to technology as necessary for promoting 21st-century skills.

In Indonesia, a few studies have been published on the fostering 21st-century skills, such as those by Khoiri et al. (2021), Ratama et al. (2021), Rezandy et al. (2020), and Shabrina and Astuti (2022). These studies focused on different aspects of 21st-century skills. Khoiri et al. (2021) looked at the differences in students' 21st-century skills (4Cs) among three different school backgrounds: urban, middle, and rural areas. Ratama et al. (2021) investigated the types of 21st-century skills (4Cs) that were taught in English literacy activities at an Indonesian vocational secondary school. Rezandy et al. (2020) explored teachers' strategies for nurturing students' 21st-century learning skills in an online class and their perceptions of supporting and inhibiting factors. Shabrina and Astuti (2022) explored the challenges faced by English teachers when incorporating six 21st-century skills into English integrated skills, and their strategies to overcome these challenges.

Therefore, the present study aims to fill gaps in the literature by investigating EFL teachers' practices for integrating 21st-century skills into their teaching and learning. Given the vast number of educational institutions in Indonesia, this study is particularly important for improving our understanding of fostering 21st-century skills in this context. Furthermore, there is limited research on how teachers' backgrounds may affect their integration of 21st-century skills. Therefore, this study is particularly significant as it also aimed to investigate factors such as teachers' gender, school levels, and age. The inclusion of gender, school levels, and age is important as these three variables are believed to have significant impact on educational practices, student experiences, and outcomes (Dee, 2006; Mahdi & Al-Dera, 2013; OECD, 2009).

Method

Research design

The present study used a quantitative approach with a survey design. The choice of survey design was appropriate because the data were collected at a certain point in time

for describing the current state of affairs, identifying standards for comparison, or examining the connections between specific occurrences (Cohen et al., 2018, p. 334).

Participants

A total of 141 English language teachers from 11 different regencies or cities in Jambi province, Indonesia participated in this study. There were 52 male and 89 female teachers, ages between 25 and 55, with 81 being junior high school teachers and 60 senior high school teachers (Table 1).

Table 1: The demographic profile of the participants (N=141)

Characteristics	Variables	n	Proportion
Gender	Male	52	36.9%
	Female	89	63.1%
School level	Junior high school	81	57.5%
	Senior high school	60	42.5%
Age	25-44 years	91	64.5%
	45 years and above	50	35.5%

Research instruments

To collect the data, a questionnaire adapted from Ravitz et al. (2012) was used. This questionnaire was chosen because it has demonstrated excellent reliability with Cronbach alpha > .90 and inter-item correlations > .58 (Ravitz, 2014). The adapted questionnaire comprised 48 items asking about the frequency of the practices pertaining to eight categories of 21st-century skills, which include critical thinking, collaboration, communication, creativity and innovation, self-direction, making global connections, making local connections, and using technology as a tool for learning. Responses were sought on a five-point Likert-style scale: Almost never=1; A few times a semester=2; 1-3 times per month=3; 1-3 times per week=4; and Almost daily=5. To interpret the participants' responses, the median absolute deviation was used to measure the statistical distribution and the variability of the data sample (Abualrob, 2019). The scale interpretation was based on the mean score, as follows: 1–1.49 = Almost never, 1.50–2.49 = A few times a semester, 2.50–3.49 = 1-3 times per month, 3.50–4.49 = 1-3 times per week, and 4.50–5.00 = Almost daily. Our translation into Indonesian was proofread by an English language lecturer and an English teacher who were very proficient in English. Three questions were added to the questionnaire to collect data on participants' knowledge of 21st-century skills, their participation in training, and their views on the importance of the training. These three questions were deemed important to ask to gauge the effectiveness of training in enhancing teachers' comprehension of 21st-century skills.

Data collection and analysis

Data were collected through an Internet survey using *Google Forms*. The researchers chose this method due to its advantages, such as easier contact and access, as outlined by Cohen

et al. (2018). As the participants were located in 11 different regencies or cities, an Internet survey allowed the research to proceed without constraints related to time or space. Before the administration, potential respondents were contacted and invited to complete the questionnaire honestly. They were informed about the purpose of the study and that the outcomes of the study would contribute to a better understanding of teacher practices concerning 21st-century skills.

The data collected were analysed using SPSS through both descriptive and non-parametric methods. Non-parametric tests, specifically Mann-Whitney U, were used to investigate whether there were any significant differences in the integration of 21st-century skills among teachers based on their gender, age, and school levels. In order to maintain ethical standards while reporting the study, the personal identities of the participants were kept confidential.

Findings

Teachers' perceptions of 21st-century skills integration into EFL classrooms

As shown in Table 2, the mean scores of teachers' responses range from 2.39 to 2.90. These results indicate that, according to the median absolute deviation scale, the integration of 21st-century skills in the EFL classroom occurs 'a few times a semester' or '1-3 times per month'. Critical thinking skills were rated the highest among the eight skill dimensions with a mean score of 2.90, followed by collaboration skills and using technology as a tool for learning, each receiving a mean score of 2.87. In contrast, local connections skills received the lowest mean score of 2.39, followed by global connections skills with a mean score of 2.44. These findings suggest that local and global connections skills are the least exercised in the classroom.

Table 2: Teachers' perceived integration of 21st-century skills (N=141)

Skill dimensions	Mean scores
Critical thinking skills	2.90
Collaboration skills	2.87
Communication skills	2.63
Creativity and innovation skills	2.75
Self-direction skills	2.83
Global connections	2.44
Local connections	2.39
Using technology as a tool for learning	2.87
Total	2.71

Critical thinking skills

Teachers' responses regarding the integration of critical thinking skills clustered in two categories of the scale, i.e., in the 'a few times a semester' and '1-3 times per month' (Table 3). Asking students to 'draw their own conclusions based on analysis of numbers,

facts, or relevant information' (M=3.16) appeared to be the most practised activity in this dimension. This is followed by asking students to 'try to solve complex problems or answer questions that have no single correct solution or answer' in the second place, with a mean score of 3.01, and to 'summarise or create their own interpretation of what they have read or been taught' (M=2.96) in the third place.

Table 3: Teachers' responses regarding the integration of critical thinking skills (N=141)

No.	Activities	Almost never	A few times a semester	1-3 times per month	1-3 times per week	Almost daily	Mean
<i>In your teaching of your target class, how often have you asked students to do the following?</i>							
1	Comparing information from different sources before completing a task or assignment	3.5%	45.4%	22.7%	19.9%	8.5%	2.84
2	Drawing their own conclusions based on analysis of numbers, facts, or relevant information	2.1%	36.9%	22.7%	19.2%	19.1%	3.16
3	Summarising or creating their own interpretation of what they have read or been taught	2.1%	44.7%	23.4%	14.9%	14.9%	2.96
4	Analysing competing arguments, perspectives or solutions to a problem	7.8%	51.1%	14.9%	19.1%	7.1%	2.67
5	Developing a persuasive argument based on supporting evidence or reasoning	5.7%	48.9%	19.2%	17.7%	8.5%	2.74
6	Trying to solve complex problems or answer questions that have no single correct solution or answer	5.0%	36.2%	26.9%	17.0%	14.9%	3.01

Collaboration skills

Table 4 displays a similar pattern of responses regarding the integration of collaboration skills. The most commonly practised activity in this dimension was asking students to 'work in pairs or small groups to complete a task together' with a mean score of 3.10. Asking students to 'create joint products using contributions from each student' received the lowest mean score of 2.61, indicating that this activity was the least practised among the other activities in this dimension.

Communication skills

Data regarding communication skills revealed that asking students to 'answer questions in front of an audience' received the highest mean score, 3.01 (Table 5). However, most teachers reported that they rarely asked their students to engage in activities such as 'structuring data for use in written products or oral presentations (e.g., creating charts, tables or graphs)', mean score 2.20, and 'conveying their ideas using media other than a written paper (e.g., posters, video, blogs, etc.)', mean score 2.48.

Table 4: Teachers' responses regarding the integration of collaboration skills (N=141)

No.	Activities	Almost never	A few times a semester	1-3 times per month	1-3 times per week	Almost daily	Mean
<i>In your teaching of your target class, how often have you asked students to do the following?</i>							
1	Working in pairs or small groups to complete a task together	2.1%	32.6%	30.5%	22.7%	12.1%	3.10
2	Working with other students to set goals and create a plan for their team	5.0%	38.3%	24.8%	24.8%	7.1%	2.91
3	Creating joint products using contributions from each student	8.5%	47.5%	25.5%	11.4%	7.1%	2.61
4	Presenting their group work to the class, teacher or others	2.1%	47.5%	24.1%	17.7%	8.6%	2.83
5	Working as a team to incorporate feedback on group tasks or products	3.6%	42.5%	27.7%	17.0%	9.2%	2.86
6	Giving feedback to peers or assessing other students' work	3.6%	42.6%	24.8%	18.4%	10.6%	2.90

Table 5: Teachers' responses concerning the integration of communication skills (N=141)

No.	Activities	Almost never	A few times a semester	1-3 times per month	1-3 times per week	Almost daily	Mean
<i>In your teaching of your target class, how often have you asked students to do the following?</i>							
1	Structuring data for use in written products or oral presentations (e.g., creating charts, tables or graphs)	18.4%	56.0%	16.3%	5.7%	3.6%	2.20
2	Conveying their ideas using media other than a written paper (e.g., posters, video, blogs, etc.)	10.6%	50.3%	23.4%	12.1%	3.6%	2.48
3	Preparing and delivering an oral presentation to the teacher or others	10.0%	41.8%	24.8%	17.0%	6.4%	2.68
4	Answering questions in front of an audience	4.3%	37.6%	24.1%	21.3%	12.7%	3.01
5	Deciding how they will present their work or demonstrate their learning	4.3%	43.3%	26.9%	18.4%	7.1%	2.81

Creativity and innovation skills

Table 6 presents the findings on creativity and innovation skills. Most responses fell under the 'a few times a semester' category, followed by '1-3 times per month'. The mean scores, which ranged from 2.6 to 2.84, indicated that these skills were moderately practised in the

EFL classroom. The most frequently exercised activity in this dimension was asking students to 'invent a solution to a complex, open-ended question or problem', mean 2.84, followed by 'testing out different ideas and working to improve them', mean 2.81. However, asking students to 'create an original product or performance to express their ideas' was the least exercised activity, mean 2.60.

Table 6: Teachers' responses regarding the integration of creativity and innovation skills (N=141)

No.	Activities	Almost never	A few times a semester	1-3 times per month	1-3 times per week	Almost daily	Mean
<i>In your teaching of your target class, how often have you asked students to do the following?</i>							
1	Using idea-creation techniques such as brainstorming or concept mapping	8.5%	42.6%	25.5%	14.2%	9.2%	2.73
2	Generating their own ideas about how to confront a problem or question	4.9%	44.0%	24.8%	20.6%	5.7%	2.78
3	Testing out different ideas and working to improve them	4.9%	44.7%	22.7%	19.9%	7.8%	2.81
4	Inventing a solution to a complex, open-ended question or problem	3.6%	45.4%	23.4%	18.4%	9.2%	2.84
5	Creating an original product or performance to express their ideas	9.2%	46.1%	24.8%	15.6%	4.3%	2.60

Self-direction skills

Concerning self-direction skills, which entail students taking charge of their learning, teachers' responses were also concentrated in the 'a few times a semester' category (Table 7). In this dimension, the highest-rated activity was asking students to 'use peer, teacher or expert feedback to revise their work', mean 2.94, followed by 'monitor their own progress towards completion of a complex task and modify their work accordingly', mean 2.92. Asking students to 'choose their own topics of learning or questions to pursue' received the lowest rating, mean 2.58.

Table 7: Teachers' responses with regard to the integration of self-direction skills (N=141)

No.	Activities	Almost never	A few times a semester	1-3 times per month	1-3 times per week	Almost daily	Mean
<i>In your teaching of your target class, how often have you asked students to do the following?</i>							
1	Taking initiative when confronted with a difficult problem or question	4.2%	44.0%	22.7%	15.6%	13.5%	2.90
2	Choosing their own topics of learning or questions to pursue	15.6%	40.4%	21.3%	15.6%	7.1%	2.58

3	Planning the steps they will take to accomplish a complex task	4.3%	46.1%	24.1%	15.6%	9.9%	2.81
4	Choosing for themselves what examples to study or resources to use	7.1%	41.8%	23.4%	17.73%	9.9%	2.82
5	Monitoring their own progress towards completion of a complex task and modifying their work accordingly	5.0%	44.7%	18.4%	17.0%	14.9%	2.92
6	Using specific criteria to assess the quality of their work before it is completed	4.3%	45.4%	21.3%	19.1%	9.9%	2.85
7	Using peer, teacher or expert feedback to revise their work	5.7%	41.8%	19.1%	19.2%	14.2%	2.94

Global connections

Table 8 illustrates the distribution of responses from teachers on the integration of global connections skills, in which more than half of the participants selected the ‘a few times a semester’ category. The mean scores, ranging from 2.21 to 2.53, indicate that the exercises related to these skills were rarely implemented in the EFL classroom. Among the activities, ‘studying the geography of distant countries’ received the lowest mean score (2.21), with 53.2% of teachers selecting the ‘a few times a semester’ category and 21.3% choosing ‘almost never’. All the activities in this dimension of 21st-century skills received low mean scores, with the highest being 2.53, indicating that they were infrequently practised in the classroom.

Table 8: Teachers’ responses concerning the integration of global connections skills (N=141)

No.	Activities	Almost never	A few times a semester	1-3 times per month	1-3 times per week	Almost daily	Mean
<i>In your teaching of your target class, how often have you asked students to do the following?</i>							
1	Studying information about other countries or cultures	5.7%	58.9%	21.3%	9.9%	4.2%	2.48
2	Using information or ideas that come from people in other countries or cultures	12.1%	51.1%	22.0%	10.6%	4.2%	2.44
3	Discussing issues related to global interdependency (for example, global environment trends, global market economy)	9.9%	54.6%	19.2%	9.9%	6.4%	2.48
4	Understanding the life experiences of people in cultures besides their own	7.1%	55.3%	19.1%	14.2%	4.3%	2.53

5	Studying the geography of distant countries	21.3%	53.2%	12.8%	9.2%	3.5%	2.21
6	Reflecting on how their own experiences and local issues are connected to global issues	12.1%	52.5%	17.7%	11.3%	6.4%	2.48

Local connections

Table 9 indicates that teachers' responses to local connections activities were comparable to their responses to global connections activities. The mean scores for this dimension, ranging from 2.17 to 2.72, suggest that these activities were also infrequently practised in the EFL classroom. Among the local connections activities, asking students to 'analyse how different stakeholder groups or community members view an issue' received the lowest mean score of 2.17, with 47.5% of the respondents indicating that they practised this activity 'a few times a semester' and 25.5% indicating that they 'almost never' practised it. All the items in this dimension received similar response patterns.

Table 9: Teachers' responses concerning the integration of local connections skills (N=141)

No.	Activities	Almost never	A few times a semester	1-3 times per month	1-3 times per week	Almost daily	Mean
<i>In your teaching of your target class, how often have you asked students to do the following?</i>							
1	Investigating topics or issues that are relevant to their family or community	16.3%	47.5%	18.4%	13.5%	4.3%	2.42
2	Applying what they are learning to local situations, issues or problems	7.8%	44.7%	24.1%	14.2%	9.2%	2.72
3	Talking to one or more members of the community about a class project or activity	15.6%	53.2%	17.0%	10.6%	3.6%	2.33
4	Analysing how different stakeholder groups or community members view an issue	25.5%	47.5%	13.5%	11.4%	2.1%	2.17
5	Responding to a question or task in a way that weighs the concerns of different community members or groups	20.6%	49.6%	15.6%	9.2%	5.0%	2.28

Using technology as a tool for learning

As can be seen in Table 10, the mean scores of the activities related to the use of technology as a tool for learning range from 2.51 to 3.18, and more responses to each

item spread across the ‘a few times a semester’, ‘1-3 times per month’, and ‘1-3 times per week’. This suggests that these activities are practised to a considerable extent in EFL teaching and learning. The data showed that asking students to ‘use technology or the Internet for self-instruction (e.g., videos, tutorials, self-instructional websites, etc.)’ was the most frequently practised activity with a mean score of 3.18. This is followed by asking students to ‘select appropriate technology tools or resources for completing a task’ in the second place with a mean score of 3.16. Asking students to ‘use technology to interact directly with experts or members of local/global communities’ was the least practised activity with mean 2.51.

Table 10: Teachers’ responses regarding the integration of technology as a tool for learning (N=141)

No.	Activities	Almost never	A few times a semester	1-3 times per month	1-3 times per week	Almost daily	Mean
<i>In your teaching of your target class, how often have you asked students to do the following?</i>							
1	Using technology or the Internet for self-instruction (e.g., videos, tutorials, self-instructional websites, etc.)	2.1%	32.6%	26.3%	23.4%	15.6%	3.18
2	Selecting appropriate technology tools or resources for completing a task	0.7%	32.6%	27.7%	27.7%	11.3%	3.16
3	Evaluating the credibility and relevance of online resources	5.7%	40.4%	25.6%	18.4%	9.9%	2.87
4	Using technology to analyse information (e.g., databases, spreadsheets, graphic programs, etc.)	13.5%	39.0%	20.6%	19.8%	7.1%	2.68
5	Using technology to help them share information (e.g., multimedia presentations using sound or video, presentation software, blogs, podcasts, etc.)	5.7%	39.7%	23.4%	19.9%	11.3%	2.91
6	Using technology to support teamwork or collaboration (e.g., shared workspaces, email exchanges, giving and receiving feedback, etc.)	8.5%	37.6%	23.4%	18.4%	12.1%	2.88
7	Using technology to interact directly with experts or members of local/global communities	24.1%	33.3%	18.5%	15.6%	8.5%	2.51
8	Using technology to keep track of their work on extended tasks or assignments	12.0%	39.0%	19.9%	20.6%	8.5%	2.74

Teachers’ perceived knowledge of and importance of 21st-century skills

Figure 1 displays teachers’ responses when they were asked to rate their perceived knowledge of 21st-century skills. Half (50%) of the teachers believed that they had good

knowledge of the skills, followed by 30% who chose the 'average' category. Only 16% of the teachers claimed that their knowledge was 'very good', whilst 4% admitted they had poor knowledge of the 21st skills.

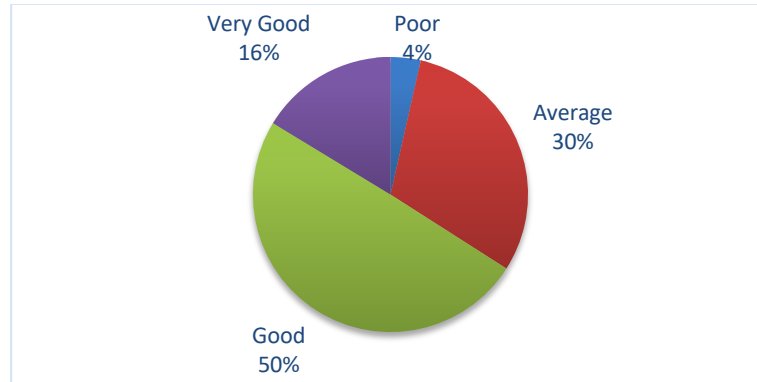


Figure 1: Teachers' perceived knowledge of 21st-century skills

When asked whether they have received training on 21st-century skills, 60% of the teachers said 'Yes' while 40% said 'No' (Figure 2). The teachers were also asked about the importance of training and 99.3% agreed that training is important. Only 1 teacher (0.71%) said that training is not important.

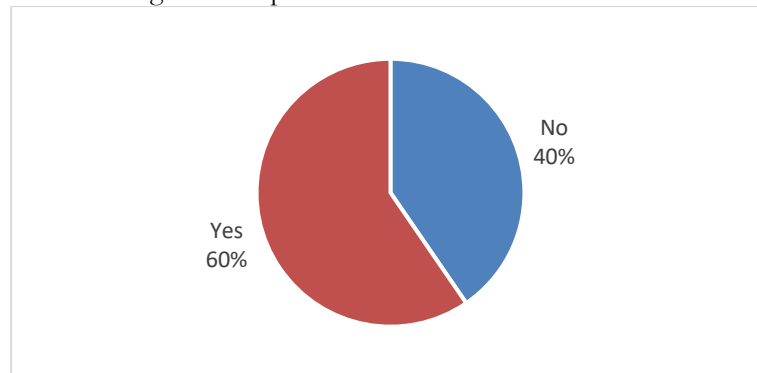


Figure 2: Teachers' participation in 21st-century skills training

The analysis specifically revealed that a vast majority of the teachers who believed they possessed good understanding of 21st-century skills were those who had received training on these skills. Conversely, a majority of teachers who perceived their understanding as average or poor were those who had not received any training.

Differences in practices according to gender, school level, and age

Three Mann-Whitney U tests were conducted to examine whether there are significant differences in teachers' perceived practices of integrating 21st-century skills into their classroom teaching and learning according to gender, school level, and age (Table 11). The results showed that, regarding gender, there was no significant difference in the level of

practices between male and female teachers. Similar results were obtained concerning the school level variable, in which there was no significant difference between junior high school and senior high school teachers in their practices of integrating 21st century skills in their classrooms. However, a significant difference was found in teachers' practices according to age, where the level for teachers aged 25-44 years was significantly higher than for teachers aged 45 and above.

Table 11: Mann-Whitney U tests results

		Practices
Gender	Mann-Whitney U	1900.500
	Male mean rank (n=52)	63.05
	Female mean rank (n=89)	75.65
	z-score	-1.767
	p-value, two-tailed	.077
School level	Mann-Whitney U	2244.500
	Junior high school mean rank	73.29
	Senior high school mean rank	67.91
	z-score	-.774
	p-value, two-tailed	.439
Age	Mann-Whitney U	1795.000
	25-44 years mean rank	76.27
	45 years and above mean rank	61.40
	z-score	-2.069
	p-value, two-tailed	.039

Discussion

The results of this study indicated that the integration of 21st-century skills into EFL classrooms was still disappointing. The mean scores of the eight dimensions ranging between 2.39 and 2.90 signals that the average frequencies of nurturing such skills are between 'a few times a semester' and '1-3 times per month'. These results are similar to the results obtained in Abualrob's (2019) study conducted in the Palestinian context. The limited incorporation of 21st-century skills in EFL classrooms highlights a substantial disparity that demands immediate attention. To ensure students are well-equipped for success in the modern workforce, it is crucial to prioritise the integration of 21st-century skills in EFL classrooms. Several potential reasons could account for these findings. First, many teachers may lack the training and resources required to effectively integrate these skills into their teaching. This was confirmed by the data, as it revealed that 40% of the respondents had never received any training on 21st-century skills. Second, there may be a lack of stress on 21st-century skills in the curriculum and assessment frameworks that govern EFL teaching. Third, there may be cultural factors (Gutiérrez & Rogoff, 2003) that discourage the development of 21st-century skills. For example, in some cultures, including in the Indonesian educational context, collaboration and communication may not be valued as highly as individual achievement (Wursten & Jacobs, 2013), which could make it difficult for teachers to encourage and develop these skills in their students.

Nevertheless, it is interesting to note that out of the eight dimensions of 21st-century skills, critical thinking skills were reported as the most frequently practised. This result is not surprising since this dimension has become a 'buzz' word in the field of education in Indonesia nowadays. Hundreds of empirical studies have been done over the last ten years on the issue of promoting students' critical thinking skills in the Indonesian secondary school context, indicating that these skills have received special attention to nurture. According to Ravitz (2014), critical thinking skills refer to the skills used to analyse complex problems, discover answers to questions that have no straightforward solutions, evaluate different viewpoints or sources of information, and draw appropriate conclusions on the basis of evidence and reasoning. The need for nurturing students' critical thinking skills is highlighted in the literature. Raj et al. (2022) contended that acquiring critical thinking skills is essential for achieving academic and professional success. Possessing these skills enables students to develop a broader understanding of the world and make important decisions effectively, both in educational contexts and in their personal lives. Shamboul (2022) further emphasised the importance of critical thinking as a versatile cognitive skill applicable in various fields. It not only fosters creativity through self-reflection but also serves as a rationale for our perspectives and ways of life. Overall, the emphasis on critical thinking skills in education in Indonesia is a positive development. However, it is important to ensure that a holistic approach to 21st-century skills is taken in order to provide students with an all-purpose education that prepares them for success in the future.

On the other hand, the results indicated that teachers' effort to foster local connections and global connections skills is daunting. According to Ravitz (2014), local connections refer to students being able to apply what they have learned to local contexts and community issues. Meanwhile, global connections refer to students being able to understand global, geo-political issues including awareness of geography, culture, language, history, and literature from other countries. With mean scores of 2.39 and 2.44 respectively, these dimensions of the skills were the last two, least exercised in the EFL classroom. One possible reason could be that the curriculum and assessment system may not prioritise these skills, which could result in teachers ignoring them in their teaching practices. Additionally, EFL teachers might perceive these two skills as better aligned with specific subject areas such as local content and citizenship courses. Nevertheless, since all teachers have the responsibility to foster students' 21st-century skills in their classrooms, it is important to offer EFL teachers professional development opportunities focused on these skills, enabling them to gain a good understanding of how to incorporate them effectively into the EFL classroom. This could include workshops, training sessions, and access to relevant resources and materials. Additionally, building cooperation between schools and local communities would be an important initial effort in the development of local connections, and presenting students with knowledge of global issues, such as climate change, poverty, and different lifestyles across cultures, that could help develop students' global connections skills (Abualrob, 2019). Most importantly, integrating these skills into the curriculum and assessment system would also encourage teachers to give them more attention in their teaching practices.

The results also revealed that the majority of the respondents reported that they had good knowledge of 21st-century skills. These results are quite promising, considering that almost half of the respondents claimed that they have never received training on 21st-century skills. However, the results of the analysis demonstrated that a significant majority of teachers who expressed confidence in their understanding of 21st-century skills had received training in those skills. Meanwhile, most teachers who considered their understanding to be average or poor had not received any training. These findings highlight the importance of specific training in enhancing teachers' comprehension of 21st-century skills. Therefore, implementing continuous teacher professional development training would effectively address the issue of limited integration of these skills. This is to a greater extent due to the changing roles of teachers in the 21st-century classroom. According to Sardar (2018), teachers are not only facilitators of student learning. Rather, they are also responsible for nurturing the competencies students will need to work and live in the current rapid changes in many aspects of life. In the 21st-century classroom, the teacher is a planner of 21st-century careers, a resource provider, a digital instructor for different ways of learning, a learning facilitator, a technology lover for learning, and a digital learner for a lifetime. Additionally, 21st-century teachers need to know both how and when to use practice to achieve their goals with students in diverse contexts (Darling-Hammond, 2006). However, it is important to acknowledge that inadequate training may not be the sole reason for the limited incorporation of 21st-century by EFL teachers. Other challenges also may contribute to this situation. In a study conducted by Shabrina and Astuti (2022) among English language teachers in Indonesia, several challenges in integrating 21st-century skills were identified. These challenges encompassed factors such as students' lack of motivation, the complexity of integrating specific skills, difficulties in managing time, students' insufficient vocabulary, and challenges in designing effective lesson plans. Thus, further research is necessary to validate and verify these findings.

The results of the inferential analysis showed that there were no significant differences in teachers' perceptions of 21st-century skills integration regarding gender and school level. A significant difference was found in teacher practices with respect to age, favouring teachers who are 25-44 years of age over those who are 45 years old and above. This suggests that both male and female teachers as well as teachers from different school levels were equally capable of integrating 21st-century skills into their teaching. The results regarding age suggest that younger teachers may be more adept at integrating 21st-century skills into their teaching practice, compared to older teachers. Possible explanations for this difference are that younger teachers may have had more exposure to technology and 21st-century skills during their own education and may be more open to new teaching approaches and more familiar with technology, which is an essential aspect of 21st-century skills integration.

Conclusion

The overarching purpose of this study was to investigate Indonesian EFL teachers' practice of nurturing secondary school students' 21st-century skills. Specifically, it aimed to: (1) measure the extent to which the teachers have integrated 21st-century skills into their classroom teaching and learning; (2) investigate the teachers' perceptions of their

knowledge of 21st-century skills and the importance of teacher training on 21st-century skills integration; and (3) examine whether there are significant differences in teachers' perceptions of 21st-century skills integration with respect to gender, school level, and age. One important finding of this study was that the integration of 21st-century skills into EFL classrooms was rather disappointing, in which the reported average frequency of the integration of such skills was 1-3 times per month. The results also show that half of the teachers stated that they had good knowledge of 21st-century skills and 40% have never received training on 21st-century skills.

The findings of this study have some implications for policymakers, curriculum designers, pre- and in-service training programs, and teachers. For policymakers, the findings highlight the importance of (1) supporting extensive research to identify the nature of 21st-century skills and effective ways to foster them in the EFL classroom; (2) including 21st-century skills as an essential component of the EFL curriculum at all levels of education; and (3) providing funding and resources for teacher training and professional development in integrating 21st-century skills into EFL classroom teaching. For curriculum designers, these findings emphasise the need for developing EFL curricula that integrate 21st-century skills in a meaningful and practical way, creating materials and resources that help teachers incorporate 21st-century skills into their lessons, and ensuring that 21st-century skills are aligned with the learning objectives of the EFL curriculum. For pre- and in-service training programs, the study emphasises the necessity of including comprehensive training on 21st-century skills integration as a main component. This should involve theoretical and practical knowledge on the nature and significance of 21st-century skills, along with instructional strategies and approaches that support their integration. Lastly, the notion that students' 21st-century skills should be developed in every instructional unit, regardless of subject, as outlined in the aforementioned government regulation, highlights the collective responsibility of all teachers, including English teachers, to foster these skills. Consequently, it is crucial for every English teacher to acquire a thorough comprehension of the components of 21st-century skills and how they can be effectively integrated into the EFL instruction. In the teaching and learning process, teachers must provide ample opportunities for learners to develop their 21st-century skills through collaborative activities, discussions, and project-based learning, using technology and digital tools to enhance learning experiences and engage students. Additionally, it is important for teachers to foster a classroom environment that values diversity and promotes cross-cultural understanding.

As with any research, the present study has several limitations. First, the data was collected through a self-reporting questionnaire, which can be subject to social desirability bias, where participants may provide answers that they believe are socially acceptable, rather than their true opinions or behaviours. Therefore, using other methods such as classroom observations and interviews could provide a more accurate and comprehensive picture of teachers' practices in fostering 21st-century skills. Second, this study involved a relatively small number of participants from only one province in Indonesia. The limited sample size and geographical scope can impact the generalisability of the findings. It would be beneficial to include a more extensive and diverse sample of teachers from different regions and cultural backgrounds in Indonesia to enhance external validity of the study.

Despite the limitations, the present study contributes to an understanding of Indonesian EFL teachers' perceptions of the integration of 21st-century skills into their classrooms and identified several potential topics of inquiry for future research. Teacher training and professional development programs can play a vital role in developing teachers' abilities to integrate 21st-century skills into the EFL classroom. Future research can investigate the effectiveness of different teacher training programs and professional development initiatives in enhancing teachers' 21st-century skill integration. Additionally, 21st-century skills can impact language learning outcomes, and future research can investigate how the integration of these skills in the EFL classroom affects students' language proficiency, motivation, and engagement.

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