



PROFESSIONAL DEVELOPMENT AND EFL TEACHERS' PRACTICES IN ACTIVATING LEARNERS' ACQUISITION OF 21ST CENTURY SKILLS

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Abstract

Teachers who teach English as a foreign language (EFL) should constantly develop their skills and knowledge by taking part in professional development programs (PDPs) which keep them aware of the most recent teaching trends. This mixed method study seeks to explore how PDPs influence EFL teachers' teaching practices in activating 21st century skills, and therefore their students' acquisition of these skills. It also examines the correlation between EFL teachers' activation of 21st century skills and their students' acquisition of these skills. The study used a sequential explanatory research design by utilizing questionnaires and semi-structured interviews. The results revealed that the two dimensions of 21st century skills that got the highest level of activation were the collaboration and communication skills. Furthermore, the results showed that the students acquire all 21st century skills with different levels of acquisition. Finally, the results showed that EFL teachers' activation of 21st century skills had no significant direct correlation with students' acquisition of these skills. These findings could provide insights on the area of PDPs that need to be researched more in different contexts. They also suggested that PDPs designers should incorporate all dimensions of 21st equally to be activated accurately by teachers in higher education institutions.

Keywords: professional development, EFL teachers, EFL learners, 21st century skills activation, 21st century skills acquisition

Introduction

There are many things that require changes over time which means that they are developing. Thus, teaching is a developmental process, and this is indicated by the changes of teachers' skills, knowledge, attitudes, and behavior (Topkaya & Yelik, 2016). Therefore, all teachers either new or experienced need a wide variety of ongoing opportunities to improve their pedagogical knowledge and skills by attending professional development programs (PDPs). Thus, these programs for in-service teachers at higher education will help increase the quality of all teachers which will lead to the best results from their students (Compen et al., 2019).

Professional development (PD) was defined by Darling-Hammond et al. (2017), as an organized professional learning that changes teacher knowledge and practices and enhances student learning outcomes. Merchie et al. (2018) also agreed with this definition and defined PD as activities that are designed for and presented to teachers in order to enhance their own and their students' knowledge, skills, and attitudes. These definitions reflect important elements

that PD can influence, such as teachers' knowledge, skills, and attitudes as well as students' learning.

As we are in the 21st century, teachers' skills and practices must be aligned with enhancing 21st century skills at higher education, thus all PDPs are needed to help university teachers learn and improve their knowledge and instructions required to teach 21st century skills (Darling-Hammond et al., 2017). Today's young people must adapt to a quickly changing environment, which necessitates going beyond fundamental formulaic knowledge and abilities. Therefore, higher education policy should move from rote learning and fact memorizing towards the development of 21st century skills (Cruz, et al., 2021; Urbani et al., 2017). Andrade (2016) reported that teaching content development in higher education must be compatible with the acquisition of global skills from the 21st century, such as problem solving, critical thinking, oral and written communication, collaboration, and information literacy.

In addition, in the field of English Language Teaching (ELT), the development of teaching language skills and its combination with language learners' ever-changing needs such as 21st century skills have become a main focus (Çınar, 2021). The 21st century skills at higher education help students to enter the work life with the capacity to think creatively and critically, interact with others, take initiative when faced with a problem, and fully utilize technology (Okolie et al., 2021; Weeks et al., 2020). Thus, learners in higher education need to be prepared to acquire the 21st century skills as their wants in this challenging era indicated that the teaching materials must be able to promote these skills (Menggo et al., 2019). In addition, Çınar (2021) claimed that every element of 21st century skills becomes a requirement for English language teaching. Thus, administrators need to develop a plan to implement PDPs to support teachers with 21st century skills development in the classroom (Stegall, 2016).

Research Aim and Research Questions

The literature reveals that there are some research studies that have studied the impact of PDPs on students' academic achievement such as Basma and Savage (2018); Miles (2019); and Warner, et al. (2019), however, the correlation between teachers' participating in PDPs and students' acquisition of 21st century skills in higher education is not clear. Thus, teachers who are involved in PDPs are now challenged with the task of incorporating 21st century skills into their classrooms at higher education institutions.

Although PDPs play a crucial role in changing higher education teachers' practices and attitudes towards PDPs and subsequently students' outcomes, few studies have focused on this topic particularly in Saudi Arabia. Hence, this mixed method study attempts to contribute to the knowledge base by exploring the correlation between EFL teachers' practices in activating 21st century skills and their students' acquisition of these skills. Therefore, this study was designed to answer the following research questions:

1. To what extent does participation in PDPs at higher education help EFL teachers activate 21st century skills?
2. To what extent do learners of English course at higher education acquire 21st century skills?
3. Is there a correlation between EFL teachers' activation of 21st century skills and their students' acquisition of these skills?

Literature Review

The Today's young people must adapt to a quickly changing environment, which necessitates going beyond fundamental formulaic knowledge and abilities. Therefore, education policy should move from rote learning and fact memorizing towards the development of 21st century skills (Urbani et al., 2017). There are various interpretations of what 21st century

skills are. The Partnership for 21st Century Learning Skills has established a structured vision for the overall educational process titled the "Framework for 21st Century Learning". It was first released in 2007 and then updated in 2016. This framework determines the skills which are crucial for students' success in life and work. It contains a combination of various skills, competences along with knowledge and expertise in the field of academic disciplines. Four skill areas have been identified to outline the 21st century students' outcomes which are: (a) key subjects and 21st century themes; (b) life and career skills; (c) learning and innovation skills: the 4Cs (i.e., critical thinking, communication, collaboration, and creativity); and (d) information, media, and technology skills (Battelle for Kids, 2021).

Moreover, Binkley et al. (2012) have categorized the 21st century skills into four groupings: ways of thinking, ways of working, tools for working, and living in the world. Critical thinking, problem solving, and decision making; creativity and innovation; learning to learn and metacognition are all included in the group of ways of thinking. Communication and collaboration are the skills of ways of working. Tools for working contain information literacy and ICT literacy. Finally, citizenship (local and global), life and career, and personal and social responsibility are categorized under living in the world.

Furthermore, Hixson et al. (2012) categorized the 21st skills into three domains: learning and innovation skills, career and life skills, and digital literacy skills. Critical thinking, communication, and creativity and innovation are subgroups of learning and innovation skills. Self-direction, collaboration, making global and local connections are included in the career and life skills. Finally, using technology as a tool for learning, information and communication technology (ICT), and media literacy are all subcategories of digital literacy skills.

Having learners' with 21st century skills is a demand for every society that wants to keep up with the global educational developments. Therefore, learning materials should be designed to support such skills. Menggo et al. (2019) conducted a wants analysis for academic-English speaking content in order to promote 21st century skills. First, the outcome of students' desires strongly showed that material design needs to be more about 21st century skills such as ways of thinking that include creative and critical approaches to problem-solving and decision-making, ways of working that include communication and collaboration, and ways of using relevant technologies (ICT literacy). Furthermore, 21st century teaching and learning necessitate cooperation skills by encouraging students to contribute functions, solve issues, and employ various thinking processes in order to attain academic success. Finally, it was advised that the academic-English speaking material be designed with linguistic resources to aid in the development of 21st century skills especially communication skills. Henceforth, it can be concluded that the nature of the course that is offered to the students can be a factor that might affect their acquisition of 21st century skills.

Besides the learning materials, teachers also need to be able to foster 21st century skills in their teaching practices in order to help their students acquire these skills. As professional development is the source for enhancing and influencing the knowledge and skills of teachers, institutions need to include what knowledge and skills teachers need in the content of their PDPs. Thus, in order to have 21st century learners, attention must be paid to how teachers can implement these skills in the classrooms and how they can be evaluated and trained through PDP. Only with successful achievement of 21st century teaching skills, 21st century learning of students can be enhanced and developed (Kim et al., 2019). This is also supported by Yue (2019) as he mentioned that higher education institutions need to address 21st century skills, such as problem solving and critical thinking, creativity and innovation, cross-cultural understanding, and ICT literacy. For this purpose, teachers need to develop all these skills and then can teach them to their students. As a result, in order to fulfil the 21st century requirements, professional development has become an urgent need for improving successful language teaching and learning (Hazaea, 2019).

In this regard, Andrade (2016) mentioned that the learning outcomes needed for higher education such as communication, problem-solving, critical thinking, and innovation had a wide support in all institutions and should be the elements of the curricular for learner success in enhancing 21st century skills. Furthermore, Hasan and Parvez (2017) discussed the PD of teachers in higher education in India. They analyzed the aspects and areas of PDPs of teachers in 21st century. It had been noticed that the universities were running updated courses with the help of Academic Staff in Colleges. They were largely responsible for organizing workshops and newly academic activities for the teachers' PD in order to prepare teachers with the required skills of 21st century. Observing the classroom processes and teacher practices of enabling and supporting the development of 21st century skills in the classroom is a necessary step to transfer these skills to the students. For example, teaching skills such as critical thinking requires teachers to be taught in a manner that is reflective of that process through PDPs that involve continuous learning and ongoing teachers' reflection (Kim et al., 2019).

Additionally, one of the studies that explored the issue of implementing of 21st century skills in teaching practices is done by Wilcox et al. (2017). They examined the extent to which teachers tried to develop students' 21st century skills in classrooms, and the extent to which they believed students improved those skills in their classes. They also tried to know how teachers effectively assessed these skills in their students. The results revealed that over third of the teachers employed all or part of the best instructional techniques to help students' 21st century skills such as collaboration, communication, critical thinking, self-direction, and using technology as a tool to learn. The results also showed that all three aspects which were attempt, belief, and assessment could significantly predict the frequency of teaching students' 21st century skills.

Moreover, Weeks et al. (2020) examined school-based agriculture education programs to report the instructors' knowledge, ability, and necessity of incorporating 21st century skills into the classroom. The study also attempted to provide a model for teacher education programs by actively encouraging the development of these skills. The 21st century skills included in this study were creativity, critical thinking, communication, collaboration, and technology skills. After assessing teachers' perceived knowledge, and ability, the data were analyzed to establish the professional development requirements of school-based agriculture education instructors, specifically 21st century skills. The most intriguing emerging result was the simultaneous integration of several 21st century skills. According to the findings, professional development was required to better educate and equip agricultural instructors with specific and applicable ways for implementing critical thinking, communication, and technological literacy skills in their classrooms.

On the same path, Sloan (2019) looked at how schools in an urban school system used professional development to help instructors incorporate 21st century survival skills into classroom instruction. These skills were classified as follows: critical thinking and problem solving, cooperation across networks and influence, agility and adaptation, effective oral and written communication, acquiring and analyzing information, and curiosity and imagination. The data gathered on how effective previous professional development was at covering these specific skills. According to the findings, current professional development seldom, if ever, included anything about survival skills. At best, there were a few instances where a skill was acknowledged but not explicitly shown; rather, it was more of an implicit idea. While community business partners and other stakeholders agreed that the skills needed to be taught, there was little indication that this was happening in these training sessions. Therefore, these survival skills need to be incorporated in teachers' PDPs clearly and with direct instructions how to implement them in their teaching practices to aid students acquire and improve these skills.

In addition, Urbani et al. (2017) studied how and to what extent teacher education programs for Pre-service teachers developed and modeled the 21st century skills. The evaluation included three teacher education programs which were multiple subjects, single subject, and education specialist. The results indicated that assignments given to the teachers during these training programs greatly impacted their competence in creativity, critical thinking, communication, collaboration, and information, media, and technology skills and in their ability to incorporate these skills into their teaching practices.

Although many educational institutions attempt to develop teachers' activation of 21st century skills their students' acquisition of these skills, few studies have explored the improvement of teachers' instructional practices to develop these skills after participating in PDPs. Furthermore, to the best of the researcher's knowledge, there is still a lack of studies conducted in the Kingdom of Saudi Arabia to examine the correlation between teachers' activation of 21st century skills and their students' acquisition of these skills. Thus, more studies are needed to examine how teaching practices are changed as a result of PDPs in activating 21st century skills and consequently developing students' acquisition of these skills in order to ensure that they are capable to work after graduation.

Research Methodology

General Background

This study adopted a mixed method approach with explanatory sequential design. This design included two phases: quantitative data collection and in-depth qualitative data collection. In the quantitative phase, two questionnaires were collected from EFL teachers and their students at Taif University English Language Center (TUELC). In the qualitative phase semi-structured interviews with EFL teachers were conducted as a next step to help explain the quantitative results.

The current study was limited to in-service teachers who teach English as a foreign language (EFL teachers) at Taif University English Language Center (TUELC) in Saudi Arabia and their students during the second semester of the academic year 2020-2021. TUELC offers a PDP every semester to its EFL teachers that is why the researcher chose them to be the participants of this study.

Moreover, the current study focuses in the 21st century skills that were developed by Hixson et al. (2012). It includes eight dimensions which are critical thinking, collaboration, communication, creativity and innovation, self-direction, global connections, local connections, and using technology as a tool for learning.

Sample

There were two target populations based on the research questions. The first population was EFL teachers at TUELC. They are 109 from various nations and holding a variety of degrees. Those teachers are teaching English Language courses as general subjects to the first-grade students at Taif University (TU). That is why those students were also selected to be the second population. They are 5017 students from four Colleges at TU. Under each college there are 12 sub-colleges.

In the quantitative phase, for the teachers' population, 44 EFL teachers were selected randomly according to the stratified random selection of the students' classes as shown in Table 1. Therefore, for the students' population, stratified random sampling was applied. First, the students were divided into four groups according to their main colleges. Then, they were divided into 12 subgroups according to their 12 sub-colleges. After that, 44 classes were selected

randomly according to the formula of proportionate stratified sampling technique which was $(\text{Sample Size} \times \text{Stratum Size} / \text{Population Size})$ (Nori, 2013). Finally, a random sample was selected within these 44 classes.

Table 1
The Stratified Random Selection of Classes

Sub-college	Formula (Sample Size*Stratum Size/ Population Size)	Sample	Number of Classes
College of Medicine	$(880 \times 90 / 5017) = 15.79$	20	1
College of Pharmacy	$(880 \times 91 / 5017) = 16.38$	20	1
College of Applied Medical Sciences	$(880 \times 209 / 5017) = 36.66$	40	2
College of Education	$(880 \times 355 / 5017) = 62.26$	60	3
College of Art	$(880 \times 378 / 5017) = 66.30$	60	3
College of Applied Studies	$(880 \times 800 / 5017) = 140.32$	140	7
College of Sharia' & Regulations	$(880 \times 466 / 5017) = 81.74$	80	4
College of Business Administration	$(880 \times 680 / 5017) = 119.27$	120	6
College of Sciences	$(880 \times 920 / 5017) = 161.37$	160	8
College of Engineering	$(880 \times 89 / 5017) = 15.61$	20	1
College of IT	$(880 \times 462 / 5017) = 81.04$	80	4
College of Home Economics	$(880 \times 477 / 5017) = 83.67$	80	4
Total		880	44

The sample size of the students' population was determined based on the assumption of sampling table in which Cohen et al. (2007) stated that normal sampling strategy uses a 95 percent confidence level and a 3 percent confidence interval. So, as if the population is (N) 5000, the ideal sample size is (S) 879. The sample size of each stratum was calculated by using the formula of calculating a proportionate stratification as shown in Table 1. So, 20 students were selected randomly from each class by using simple random sampling.

In the qualitative phase, a purposeful sampling with the criterion sampling technique is used in this phase to choose some cases that meet a predefined criterion for this in-depth stage (Palinkas et al., 2015). After examining the quantitative data, some criteria for choosing the participants were established. These criteria were: involving in PDPs for 2 years and more, having more than 5 years of teaching experience, and specializing in TESL/ TESOL, English language, or Linguistics Studies. The majority of books and publications that Guest et al. (2006) studied said that the purposive sample size should be determined inductively, and that sampling should continue until saturation. As the saturation point was achieved at teacher number eight, the interview sample size was set at eight teachers.

Research Instruments

The study's data were collected using the following instruments:

- EFL Teachers' Questionnaire
- Students' Questionnaire
- EFL Teachers' Semi-structured Interview

EFL Teachers' Questionnaire

Teachers' questionnaire contained two sections. The first one included the respondent's demographic information which was used in analyzing the data later. The second one was utilized to identify the extent to which participation in PDPs helps EFL teachers activate 21st century skills. This section was adapted from Hixson et al. (2012) and permission was sent by email. This questionnaire included a total of 46 items which represented the 21st century skills under eight dimensions. These items were assessed with a 5-point Likert scale with 1=Never, 2=Rarely, 3=Sometimes, 4=Often, and 5=All the Time. The EFL teachers were invited to participate via email and the electronic questionnaire that was created by Google form was distributed online. The questionnaires were anonymous to give teachers the freedom to express their viewpoints; however, the group numbers were used later to facilitate the follow up interviews.

In order to determine the content validity, a validation committee consisting of five experts from Faculty of Education and Language Center analyzed the content of the items and their appropriateness to the research objectives. Each member in the committee was asked to examine the relevance of the items to the question that is supposed to be answered, the clarity of the items regarding the vocabulary level, the language, and the structure, and the adequateness of the content which means if the number of items is representative enough of each domain in the questionnaire. For measuring the questionnaires' reliability, Cronbach's coefficient alpha was calculated by using SPSS program, version 23, and it yielded .955.

Students' Questionnaire

The second questionnaire was applied among students, and it was the same as the teachers' questionnaire, but with slight changes in the wording reflecting students' different perspectives. The first change was for the heading statement. It was changed to "After studying English Language Course in my first semester at university, I am able to ...". The second one was for the 5-point of the Likert scale. They were changed to 1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree. Finally, the 46 items structure was also changed to address the students, e.g., the item "Draw their own conclusions based on analysis of numbers, facts, or relevant information." was changed to "Draw my own conclusions based on analysis of numbers, facts, or relevant information."

In order to determine the content validity, the same validation committee of teachers' questionnaire was given the students' questionnaire. Also, Cronbach's alpha coefficient was used to measure the questionnaires' reliability, and it yielded .967.

EFL Teachers' Semi-structured Interview

An interview guide was created, which included a list of subjects to be covered as well as some open-ended questions. It was prepared following the analysis of quantitative data as needed by the study's explanatory sequential design. Because of the COVID-19 epidemic, EFL

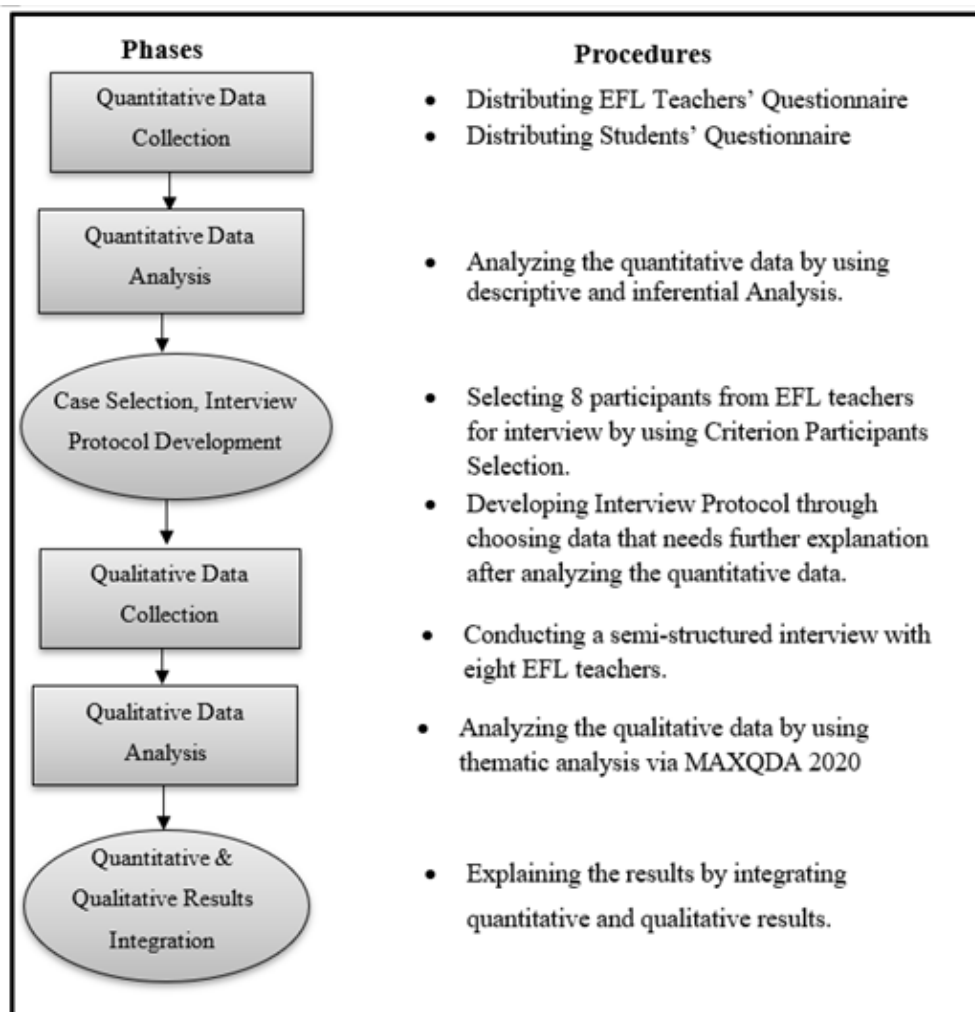
instructors were interviewed online using Zoom sessions. With the participants' agreement, all interviews were audio-recorded, and 30 to 45 minutes were allotted for each interview session.

To validate the qualitative results of this study, two methods were used which were member checking by which the interview transcripts with the emerging themes were returned to four of the study participants and they provided their feedback, and a rich, thick description which provides more in-depth details. As for the qualitative reliability, cross-checking for the codes was used via asking another coder who is experienced with qualitative studies and coding process to cross check an interview coding and emerging themes and give his feedback.

Research Procedures

As discussed earlier, the current investigation used an explanatory sequential design, which is one of the most popular mixed methods designs in educational research (Creswell, 2014). It includes two phases: quantitative and qualitative which was implemented sequentially as shown in Figure 1.

Figure 1
EFL Teachers' Activation of 21st Century Skills



Data Analysis

Data analysis occurs in three stages in the explanatory sequential design: quantitative data analysis, follow-up qualitative data analysis, and how the qualitative data serves to interpret the quantitative results (Creswell & Clark, 2018).

Statistical Package of Social Sciences (SPSS) and Partial Least Squares - Structural Equation Modelling (PLS-SEM) were used for the quantitative data analysis. SPSS was used to provide descriptive statistics on EFL teachers' activation of 21st century skills, and the students' acquisition of these skills. Descriptive statistics helps in organizing quantitative data and allows researchers to summarize characteristics and distribution of values in a single or more datasets (Lee, 2020). Mean and standard deviation for each statement in both questionnaires were calculated.

PLS- SEM was used to analyze the data of research question 3 which aimed to identify the correlation between EFL teachers' activation of 21st century skills and their students' acquisition of these skills. Through SEM, researchers can explain the entire correlations between variables by defining a model (Kumar & Upadhaya, 2017). The SEM is more appropriate for research question number three in this study because it is well-known by three essential characteristics, namely, the assessment of many dependence relationships, illustrating unobserved concepts in these dependence relationships and correct the errors of measurements, and finally defining the whole model that explains the entire relationships between variables (Hair et al., 2014; Kumar & Upadhaya, 2017).

Thematic analysis, on the contrary, was employed for qualitative data analysis since it delivers rich, comprehensive, and complicated data. Braun & Clarke (2006) defined it as a process for detecting, analyzing, and reporting themes inside the data. Thematic analysis is thought to be the most suited analyzing tool for any study that employs interpretations. It enables the researchers to link the topic frequency to the entire material (Alhojailan, 2012). Qualitative research thematic analysis may be broken down into five steps: joining, deconstructing, reconstructing, analyzing, and concluding (Castleberry & Nolen, 2018).

Research Results

Research Question 1: EFL teachers' activation of 21st century skills

To answer this question, the data were collected via questionnaire and interview. First, teachers were given a questionnaire. Then, eight selected teachers were interviewed to help explaining the quantitative results. As the questionnaire used a 5-point Likert scale, the data were interpreted by three levels based on the mean range as shown in Table 2.

Table 2
Mean Range Levels

Scale	Interval Length	Lower Limit	Upper Limit	Range	Level
Never	1	1.00	2.33	1.00 – 2.33	Low
Rarely	2	2.34	3.67	2.34 – 3.67	Moderate
Sometimes	3	3.68	5.00	3.68 – 5.00	High
Often	4				
All the Time	5				

After collecting all data, the responses were processed through descriptive statistical analysis using SPSS to determine the mean and standard deviation for each item as shown in Table 3.

Table 3
Mean and Standard Deviation for the Items of EFL Teachers' Activation of 21st Century Skills

Dimension	<i>N</i>	<i>M</i>	<i>SD</i>
Critical thinking skills	1	3.37	1.036
	2	3.53	1.077
	3	3.83	0.955
	4	3.57	0.996
	5	3.47	1.055
	6	3.68	1.017
Collaboration skills	7	4.40	0.739
	8	3.74	1.094
	9	3.49	1.033
	10	4.18	0.971
	11	4.06	1.114
Communication skills	12	3.46	1.129
	13	3.82	1.116
	14	3.91	0.936
	15	3.97	1.005
	16	4.15	1.073
Creativity and innovation skills	17	4.00	0.976
	18	3.91	1.019
	19	3.66	1.055
	20	3.51	1.066
	21	3.52	1.130
Self-direction skills	22	3.46	1.076
	23	3.17	1.241
	24	3.51	1.130
	25	3.15	1.317
	26	3.67	1.148
	27	3.52	1.199
Local connections	28	3.52	1.209
	29	3.83	1.037
	30	3.91	0.936
	31	3.14	1.287
	32	2.84	1.247
	33	3.13	1.283

	34	4.00	0.915
	35	3.75	0.918
Global connections	36	3.34	1.076
	37	3.83	1.002
	38	3.45	1.108
	39	4.09	1.063
	40	4.06	0.981
	41	3.59	1.177
Using technology as a tool for learning	42	3.16	1.380
	43	4.02	1.034
	44	4.03	0.994
	45	3.10	1.414
	46	3.67	1.158

Table 3 shows that the mean score range for all items in the questionnaire is 2.84 till 4.40. It could be seen that Item 7, which states “Working in pairs or small groups to complete a task together.”, received the highest mean score of 4.40 ($SD= 0.739$). This skill belongs to the Collaboration Skills dimension. The high mean score for this item signifies that teachers activate this skill more than the other skills. It means that teachers always encourage their students to work in pairs or in groups while completing a task. Teachers’ choice of this item as the highest skill activated in the classrooms could be explained based on their expressions during the interview as follows.

“I used to divide my students into groups and ask them to work in groups, and my job is to monitor these groups, just to make sure that they work together and communicate in English. I praise them when they when they come up with an innovative idea especially low-level student.” (Collaboration skills > Working in groups> T1).

“Yes, of course, group works, I’m trying my best to make them work in groups because we teach large number of students. This let them share their ideas and learn from each other.” (Collaboration skills> Working in groups> T3).

On the contrary, the item that has the lowest mean is Item 32 with a mean score of 2.84. It states that “Analyzing how different stakeholder groups or community members view an issue.” and belongs to the dimension of Local Connections. This result means that teachers seldom teach their students how to analyze different views of local community members. This may be due to the topics included in English courses which are derived mostly from global communities as Teacher 7 mentioned:

“The course let the students make Global Connections. The topic like for example Amazon is not something that we always talk about like Ganaderiah or other local stuff, or camel race or something like that. This is a different time in our lives. This is truly a global time in our lives and our learners need to get used to that and trained for that because they learn a global language.” (Activation of 21st century skills > Local and global connections> T7).

Therefore, the kind of topics included in the textbook could be a reason why the skill of analyzing different views of local community is not always activated by teachers in EFL classrooms. Sometimes, teachers depend only on the topics of English textbook and do not try to connect the global issues with the local ones.

Upon generating the means for individual items, the items were then computed according to the eight dimensions of 21st century skills as shown in Figure 2.

Figure 2
EFL Teachers' Activation of 21st Century Skills

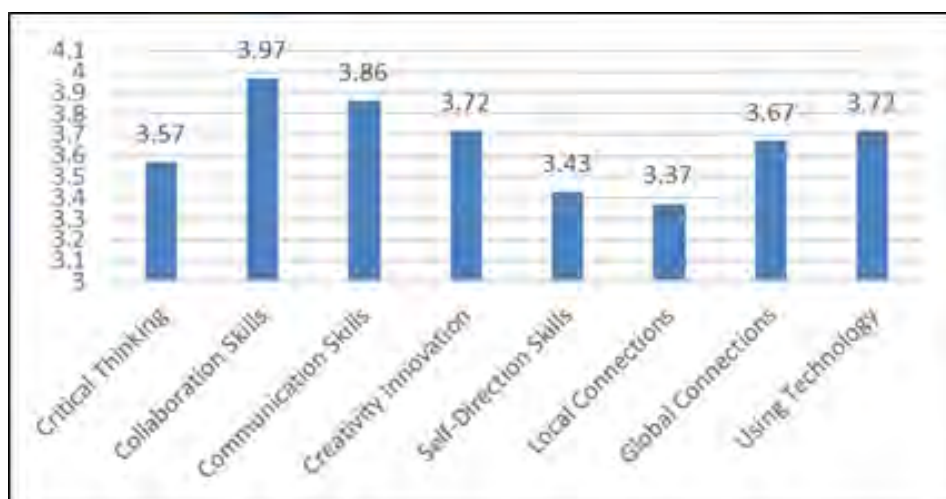


Figure 2 displays the mean scores for all eight dimensions which range from 3.37 to 3.97. The dimension of Collaboration Skills has the highest mean score with 3.97. This result means that EFL teachers activated collaboration skills in the classroom all the time.

On the other hand, Local Connections got the lowest mean score with 3.37. According to the mean range in Table 2, this result means that EFL teachers sometimes activate this skill.

The reading of the results for all dimensions of 21st century skills as presented in Figure 2 shows that PDPs help teachers to activate all 21st century skills in a moderate and high level. This result is supported by teachers' interview as follows.

"Yes, and most of them actually, like, for example, the use of technology inside classroom. In some training sessions, we were presented to a lot of apps and websites that we can use inside the class. Also, for the critical thinking skills." (Activation of 21st century skills> T2).

"PDPs presented strategies that teacher can use to activate these skills inside the classroom. Many strategies, and many techniques that I have learned and applied in my classroom. They were talking about critical thinking, collaboration, and self-direction. So, these training sessions talked about these skills, and we got benefit of it." (Activation of 21st century skills> T5).

The excerpts above indicate that PDPs help teachers be aware of 21st century skills and how to implement them inside their classrooms. T2 mentioned that some training sessions provide her with apps and websites that enabled her to activate the skills of using technology. In addition, T5 added that she has learned many strategies and techniques from PDPs which helped her in activating skills such as critical thinking, collaboration, solving problems, and self-direction skills.

Research Question 2: Students' acquisition of 21st century skills

The students' acquisition of 21st century skills was measured through students' questionnaire and their teachers' semi-structured interviews. The questionnaire uses a 5-point

Likert scale with options, Strongly Disagree= 1, Disagree= 2, Neutral= 3, Agree= 4, Strongly Agree=5. Thus, the higher the value, the larger the extent of 21st century skills acquisition by the students. The data of this question was interpreted by three levels based on the mean range as shown in Table 4.

Table 4
Mean Range Levels

Scale	Interval Length	Lower Limit	Upper Limit	Range	Level
Strongly Disagree	1	1.00	2.33	1.00 – 2.33	Low
Disagree	2	2.34	3.67	2.34 – 3.67	Moderate
Neutral	3	3.68	5.00	3.68 – 5.00	High
Agree	4				
Strongly Agree	5				

As shown in Table 4, there are three levels: low, moderate, and high by which the means will be interpreted. After that, mean and standard deviation for each item in the questionnaire were produced. The results are presented in Table 5.

Table 5
Mean and Standard Deviation of Students' Questionnaire

Dimension	N	M	SD	Total M and SD
Critical thinking skills	1	3.77	0.931	M = 3.83 SD = 0.663
	2	3.80	0.864	
	3	4.04	0.895	
	4	3.86	0.896	
	5	3.75	0.930	
	6	3.77	0.966	
Collaboration skills	7	4.07	0.988	M = 3.87 SD = 0.787
	8	3.97	0.995	
	9	3.87	0.929	
	10	3.98	0.965	
	11	3.74	1.063	
Communication skills	12	3.84	0.958	M = 3.82 SD = 0.780
	13	3.98	0.900	
	14	4.05	0.891	
	15	3.59	1.141	
	16	3.63	1.137	
Creativity and innovation skills	17	3.86	0.937	M = 3.92 SD = 0.725
	18	3.95	0.842	
	19	3.92	0.870	
	20	3.92	0.854	
	21	3.97	0.884	

Self-direction skills	22	4.13	0.884	M = 4.02 SD = 0.725
	23	4.02	0.851	
	24	4.04	0.887	
	25	3.93	0.889	
	26	4.00	0.900	
	27	3.91	0.896	
	28	4.11	0.879	
Local connections	29	3.65	0.990	M = 3.71 SD = 0.709
	30	3.87	0.868	
	31	3.63	0.967	
	32	3.58	0.909	
	33	3.81	0.854	
Global connections	34	3.75	0.988	M = 3.67 SD = 0.791
	35	3.71	0.934	
	36	3.50	1.023	
	37	3.85	0.942	
	38	3.57	1.020	
Using technology as a tool for learning	39	4.22	0.894	M = 4.08 SD = 0.716
	40	4.12	0.837	
	41	3.95	0.921	
	42	4.00	0.910	
	43	4.19	0.850	
	44	4.09	0.884	
	45	3.98	0.914	
	46	4.10	0.906	

It can be seen from Table 5 that all items have mean scores ranged between 3.47 and 4.22 which represent moderate and high levels of agreement. Item 39 received the highest mean with a mean score of 4.22. Item 39 states that “Using technology or the Internet for self-instruction (e.g., videos, tutorials, self-instructional websites, etc.)” This finding reveals that the students acquired the skill of using technology for self-learning in their English classes. This skill belongs to the domain of Using Technology as a Tool for Learning which also received the highest mean score (4.08) among the eight dimensions of 21st century skills. This result is also confirmed by teachers’ responses during the interview as follows.

“They did an amazing work. Even their videos when I asked them to do a speaking task and send me a record or something of their speaking, they would send me videos that amazed me.” (Acquisition of 21st century skills)> Using Technology> T1).

“I’m so happy that they are very skilled with technology and using it. You know, if I ask them to do anything, they were doing it in a second and I was amazed.” (Acquisition of 21st century skills)> Using Technology>T3).

Teachers mentioned some reasons behind this result in the interview as follows.

"I think online classes during COVID-19 Pandemic enhanced some of the 21st century skills such as using technology. The online classes were more effective in helping the students learn how to use technology because they are forced to use it." (Using Technology > Online classes> T2).

"I feel like some skills have been developed through online classes, especially technology. Students started to send me everything through email, they started to share with me on Drive, and create their own videos. They also started to use different websites for large size files." (Using Technology > Online classes> T4).

The above excerpts show that online classes helped students to acquire skills using technology. Teaching and learning processes have been shifted from face-to-face into online classes due to COVID-19.

In contrast, the item that received the lowest mean is Item 36 with a mean score of 3.50. Item 36 states that "Discussing issues related to global interdependency (for example, global environment trends, global market economy.)" This result reveals that the students agree with this statement in a moderate level. It means that they rarely discuss the global interdependency issues. This skill is related to the domain of Global Connections which also received the lowest mean score (3.67) among the eight dimensions of 21st century skills.

In the interview when teachers were asked about the skills that their students acquired, they mentioned all the skills except global connections. The following are some examples of their responses.

"Using technology. This is number one, because they all had to use their devices regardless of what device they are using. May be local connections because they had to be connected to the teacher. Also, communication and collaboration with each other and with their teachers. Self-direction skills, maybe but not in very high rates" (Students' Acquisition of 21st skills> T6).

"Some courses help in developing critical thinking, they actually challenge students' critical thinking. So, some students have that critical thinking and innovation because of the courses they are learning." (Students' Acquisition of 21st skills> T7).

It can be noted from the excerpts above that teachers 6 and 7 talk about the students' acquisition of most of 21st century skills such as using technology, local connections, communication and collaboration, self-direction skills, critical thinking, and innovation. None of the teachers have pointed to global connections as an acquired skill by the students.

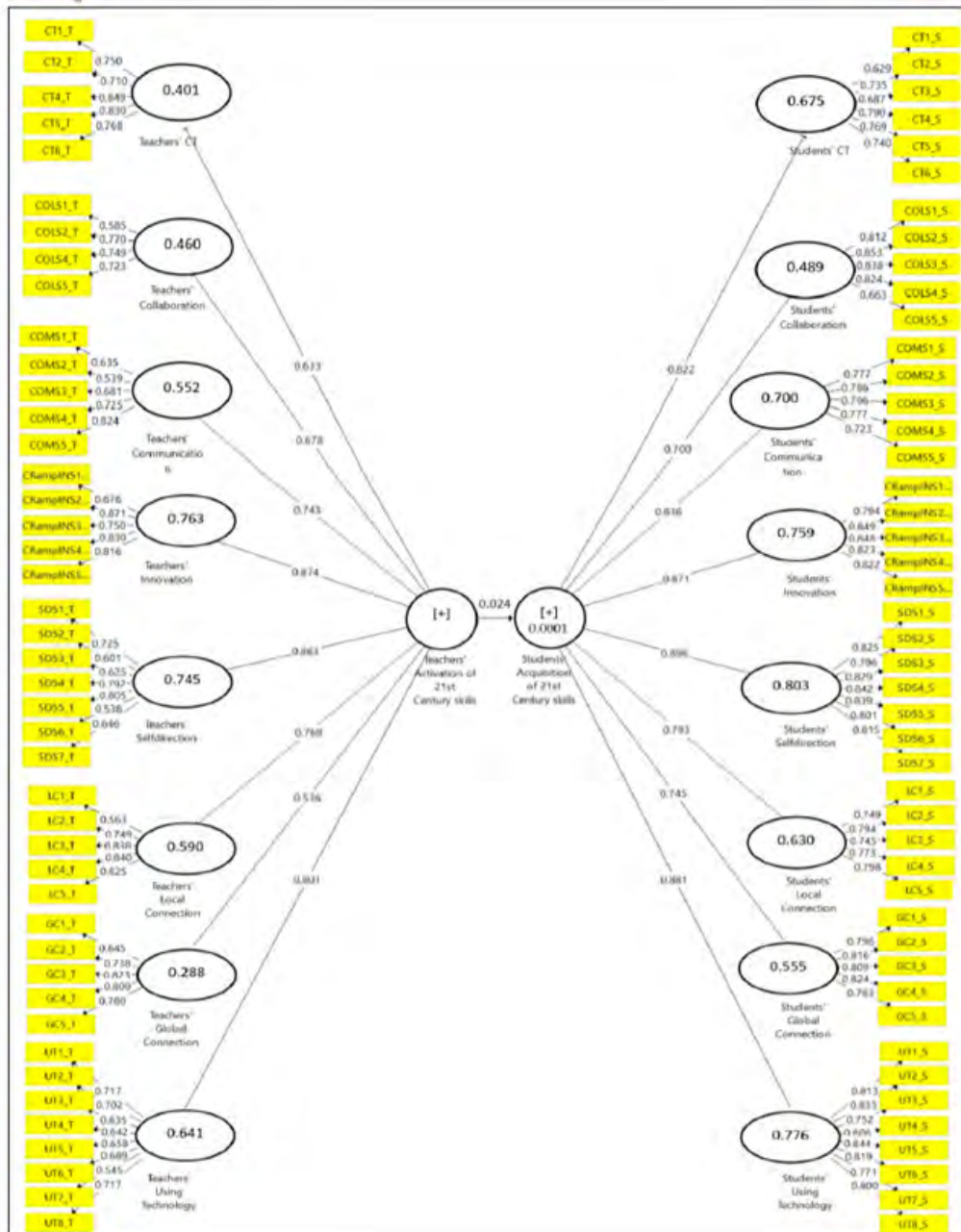
Research Question 3: The correlation between EFL teachers' activation of 21st century skills and their students' acquisition of these skills

To explore the correlation between teachers' activation of 21st century skills and their students' acquisition of these skills, measurement and structural model assessments were applied via PLS-SEM.

Measurement Model Assessment

The measurement model assessment was evaluated by addressing Construct Reliability using Composite Reliability (CR) and Cronbach's Alpha, and Convergent Validity using Outer Loadings and Average Variance Extracted (AVE) (Hair et al., 2017). Figure 3 presents the PLS Algorithm results for the assessment of the measurement model.

Figure 2
PLS Algorithm Results for the Measurement Model Assessment



Construct Reliability: Composite Reliability (CR) and Cronbach Alpha. Cronbach's Coefficient alpha shows the average correlation among all the items of the scale. According to Pallant (2016), the acceptable value of Cronbach's alpha is from 0.70 to 0.95. Regarding the Composite Reliability (CR), Nunally and Bernstein (1994, cited in Hair, Hult, Ringle, & Sarstedt, 2017) pointed out that the values ranging between 0.70 and 0.90 were acceptable values of CR. Table 6 presents the values of Cronbach's alpha and composite reliability.

Table 6
Results of Cronbach's Alpha and Composite Reliability (CR)

Constructs	Cronbach's Alpha	Composite Reliability
Students' Critical Thinking	.820	.866
Students' Collaboration	.858	.899
Students' Communication	.832	.881
Students' Creativity and Innovation	.885	.916
Students' Self-direction	.919	.935
Students' Local Connections	.831	.881
Students' Global Connections	.865	.902
Students' Using Technology	.922	.937
Teachers' Critical Thinking	.842	.888
Teachers' Collaboration	.720	.801
Teachers' Communication	.713	.815
Teachers' Creativity and Innovation	.848	.893
Teachers' Self-direction	.805	.857
Teachers' Local Connections	.823	.877
Teachers' Global Connections	.821	.873
Teachers' Using Technology	.819	.863

Table 6 presents the values of Cronbach's alpha and composite reliability for all constructs. The results show that all the values of all constructs are within the acceptable value (0.70 – 0.95) according to Pallant (2016). This means that the items of these constructs are internally consistent.

Convergent Validity: Outer Loadings and Average Variance Extracted. In order to test the convergent validity, the outer loading of the indicators and the average variance extracted (AVE) from the constructs should be considered. According to Hair et al. (2014) the value of 0.50 and above are considered significant. Therefore, the indicators with low outer loadings must be removed from the scale. AVE is the other common measure to test the convergent validity of the constructs level. Hair et al. (2017) cited that the AVE value of 0.50 and above is acceptable. Besides, Fornell and Larcker (1981) stated that if AVE is less than 0.50 but the composite reliability is higher than 0.6, the convergent validity is still acceptable. Table 7 presents the outer loadings and the AVE of students' and teachers' questionnaires.

Table 7
Outer Loadings and AVE of Students' and Teachers' Questionnaires

Dimensions	Items	Students			Teachers		
		Loading (>0.5)	CR	AVE	Loading (>0.5)	CR	AVE
Critical Thinking Skills (CT)	CT1	0.629	0.866	0.529	0.750	0.888	0.614
	CT2	0.735			0.710		
	CT3	0.687			0.366 Deleted		
	CT4	0.790			0.849		
	CT5	0.769			0.830		
	CT6	0.740			0.768		
Collaboration Skills (COL)	COL1	0.812	0.899	0.641	0.585	0.801	0.472
	COL2	0.853			0.770		
	COL3	0.838			0.386 Deleted		
	COL4	0.824			0.749		
	COL5	0.663			0.723		
Communication Skills (COM)	COM1	0.777	0.881	0.596	0.635	0.815	0.580
	COM2	0.786			0.539		
	COM3	0.796			0.681		
	COM4	0.777			0.725		
	COM5	0.723			0.824		
Creativity and Innovation Skills (CR&IN1)	CR&IN1	0.794	0.916	0.685	0.676	0.893	0.626
	CR&IN2	0.849			0.871		
	CR&IN3	0.848			0.750		
	CR&IN4	0.823			0.830		
	CR&IN5	0.822			0.816		
Self-Direction Skills (SD)	SDS1	0.825	0.935	0.674	0.725	0.857	0.466
	SDS2	0.796			0.601		
	SDS3	0.829			0.625		
	SDS4	0.842			0.792		
	SDS5	0.839			0.805		
	SDS6	0.801			0.538		
	SDS7	0.815			0.646		
Local Connections (LC)	LC1	0.749	0.881	0.596	0.563	0.877	0.593
	LC2	0.794			0.749		
	LC3	0.745			0.838		
	LC4	0.773			0.840		
	LC5	0.798			0.825		

Global Connections (GC)	GC1	0.796	0.902	0.649	0.645	0.873	0.580
	GC2	0.816			0.738		
	GC3	0.809			0.823		
	GC4	0.824			0.809		
	GC5	0.783			0.780		
Using Technology as a Tool for Learning (UT)	UT1	0.813	0.937	0.649	0.717	0.863	0.443
	UT2	0.835			0.702		
	UT3	0.752			0.635		
	UT4	0.806			0.642		
	UT5	0.844			0.658		
	UT6	0.819			0.689		
	UT7	0.771			0.545		
	UT8	0.800			0.717		

Table 7 presents the outer loadings for the items that belong to the variable of students' acquisition of 21st century skills. The results indicated that there was no deleted item because the outer loadings for all items were more than 0.5. Also, the results from the table above indicated that all the dimensions of the 21st century skills had high values of AVE. All values were 0.50 and higher, which means that the dimensions clarify more than half of the variance of their indicators.

Furthermore, Table 7 indicates that two items from teachers' questionnaire have been deleted because their outer loadings were less than 0.5. These items were CT3 and COL3. Additionally, the results from Table 8 displayed that all the constructs of teachers' activation of 21st century skills had acceptable values of AVE according to Fornell and Larcker (1981). All values were 0.50 and higher except for the Collaboration Skills, Self-Direction Skills, and Using Technology as a Tool for Learning in which AVE was less than 0.50 but their CR was higher than 0.6.

Structural Model Assessment

Assessment of Collinearity (VIF Values). This assessment is conducted to check if there are critical levels of collinearity between every set of the predictor variables. Each construct should have a VIF value below (5.) and any threshold value higher than (5.) means there is a collinearity problem (Hair et al., 2017). The VIF values were checked and presented in Table 8.

Table 8
Values of VIF

Dimensions	VIF
Student Critical Thinking	1000
Student Collaboration	1000
Student Communication Skills	1000
Student Creativity and Innovation Skills	1000
Student Self-Direction Skills	1000
Student Local Connections	1000
Student Global Connections	1000
Student Using Technology	1000
Teacher Critical Thinking	1000
Teacher Collaboration	1000
Teacher Communication Skills	1000
Teacher Creativity and Innovation Skills	1000
Teacher Self-Direction Skills	1000
Teacher Local Connections	1000
Teacher Global Connections	1000
Teacher Using Technology	1000

The results from Table 9 find that all values of VIF are below 5. This means that there is no collinearity problem because collinearity does not reach critical levels in any construct of the model. Therefore, the values of VIF in the current study are acceptable.

Path Coefficients of Structural Model. The values of path coefficients that are close to +1 indicate a strong positive statistically significant correlation between the constructs. The values of path coefficients that are close to -1 refer to the strong negative statistically significant correlations between the constructs. The values that are very low and close to 0 are commonly considered not significantly different from 0 (non-significant) (Sarstedt et al., 2017). The results of the path coefficient (β) for the direct correlation of the structural model are presented in Table 9.

Table 9
Structural Model Results: Direct Correlation

Direct Correlation between Variables	Path Coefficient (β)
Teachers' Activation of 21st Century Skills -> Students' Acquisition of 21st Century Skills	0.024

The results from the table above indicate that Teachers' Activation of 21st Century Skills has no significant direct correlation with Students' Acquisition of 21st Century Skills as the standard coefficient (β) (0.024) is below 1 and close to 0. Therefore, there was no direct correlation between the tested variables.

As the previous result looked at the correlation as a whole, the correlation in every dimension of the 21st century skills was also examined using Pearson Correlation Coefficient via SPSS. The interpretation of Pearson Correlations was based on description of correlation strength as follows: < .20 very weak, .20 - .39 weak, .40 - .59 moderate, .60 - .79 strong, >.80 very strong (Lehman, 2005). Table 10 shows the results Pearson Correlation Coefficients.

Table 10
Pearson Correlation Coefficients Results

21 st Century Skills	Pearson Correlation	
	<i>r</i>	<i>p</i> -
Critical Thinking Skills	.237**	.0001
Collaboration Skills	.135**	.0001
Communication Skills	.086*	.011
Creativity & Innovation Skills	.074*	.028
Self-Direction Skills	-.055	.104
Local Connections	-.059	.080
Global Connections	.086*	.011
Using Technology as a Tool for Learning	.023	.495

** . Correlation is significant at the .01 level (2-tailed).

* . Correlation is significant at the .05 level (2-tailed).

Table 10 presents the results of Pearson Correlation Coefficients for the teachers' activation of 21st century skills and their students' acquisition of these skills. It could be seen that there was a significant correlation for the category of Critical Thinking Skills ($r = .237$, $p < .01$), Collaboration Skills ($r = .135$, $p < .01$), Communication Skills ($r = .086$, $p < .05$), Creativity & Innovation Skills ($r = .074$, $p < .05$), and Global Connections ($r = .086$, $p < .05$). As the correlations values were less than 0.20, the strength of the correlations was very weak in all these skills except for critical thinking in which the correlation value was more than 0.20 which indicated a weak correlation. These findings revealed that the students' acquisition of these skills was likely linked with their teachers' activation of these skills. The more teachers implemented these skills inside the classrooms, the more their students can acquire them.

On the other hand, there was no significant correlation for the category of Self-Direction Skills, Local Connections, and Using Technology as a Tool for Learning. This means that the students' acquisition of these skills had no correlation with their teachers' activation of these skills.

Discussion

The results of the first question revealed that teachers have activated all 21st century skills dimensions with different levels of activation. The two dimensions that got the highest level of activation were the collaboration and communication skills. This means that most of the training sessions have incorporated these two skills more than other skills. It also signifies that teachers activate this skill in English classrooms almost all the time. This means that teachers always encourage their students to work in pairs or in groups while completing a task. They use this skill to facilitate learning English through group working and exchanging ideas between students. This kind of interacting helps students in higher education to learn the skills of collaboration which indeed enhances their learning and social engagement (Menggo et al., 2019). This result is consistent with Wilcox et al. (2017) in which collaboration skills were the most frequently used inside the classrooms to enhance students' 21st century skills.

On the other hand, the two least activated dimensions were the local connections and the self-direction skills. This reveals that the training sessions of PDPs paid little attention to those two skills. Therefore, the designers of these programs should concentrate on all the dimensions

of 21st century skills with the same amount of focus in order to avoid concentrating on some dimensions and neglecting the others. It also indicates that teachers seldom teach their students how to analyze different views of local community members. Therefore, they need to pay more attention to it as this is one of the most important life and career skills for adults as categorized by Hixson et al. (2012).

The reading of the results for all dimensions of 21st century skills shows that PDPs help teachers to activate all 21st century skills in a moderate and high level. This result is also supported by teachers' excerpts from the interview. They indicated that PDPs helped them be aware of 21st century skills and how to implement them inside their classrooms. This is in line with Alamri's (2020) study that emphasized the implementation of professional development courses to enhance the activation of 21st century skills. Besides, Garcia (2021) mentioned ten areas that EFL teachers should focus on to make their instruction in line with 21st century approaches. One of these areas was teachers' professional development. This means that PDPs can promote teachers' implementation of 21st century skills.

The results of the second question demonstrated that students acquired all 21st century skills with different levels. The dimension that got the highest level of acquisition was using technology as a tool for learning. This means that teachers encouraged their students to use technology inside and outside the class when they were asked to complete certain home tasks.

One reason behind acquiring the skill of using technology more than other skills is that learners have been shifted to be digital generation as mentioned by Yang et al. (2021). Therefore, it was easy for them to implement the technical skills especially in higher education. It is also mentioned in the study of Manuel et al. (2021) that Information and Communication Technology (ICT) is a crucial life's tool in the 21st century. That is why current learners pay more attention to it.

The other reason is the emerging trends of online learning as a result of COVID-19 pandemic. Yang et al. (2021) mentioned that the digital learning abilities are becoming a key for learners' success in the period of pandemic as the students learn independently. Teaching and learning processes have been shifted from face-to-face into online classes due to COVID-19. This result is supported by Vargo et al. (2021) as they concluded that most of the instructors and students chose to use online classes and platforms to continue their education during the pandemic. Furthermore, the study of Batez (2021) revealed that students evaluated their level of ICT skills as being higher for online education during COVID-19 period.

On the other hand, the least acquired dimension by the students was global connections. This result means that they rarely discussed global issues inside English classrooms. This result is in line with Ghaith's (2010) study where he stated that the awareness about global and cross-cultural issues was ranked as the lowest achieved skill in higher education, and consequently needed more focus in different courses instructions.

The third research question involved finding out if there was a correlation between teachers' activation of 21st century and their students' acquisition of these skills. The results of the standard coefficient (β) in the SEM revealed that teachers' activation of 21st century skills had no significant direct correlation with students' acquisition of 21st century skills. Accordingly, this result was in line with Fischer et al. (2018) which demonstrated that teachers' engagement in PDP was favorably connected with instructors' classroom practice. However, the observed parts of instructional practices had a very minor effect on students' performance in the predicted direction. This indicated that participation in PDP might influence instructors to improve their teaching practices, but the correlation between instructional aspects and student achievement was very weak.

Lastly, Pearson Correlations Coefficients were used to look at the correlation in every construct (dimension) of the 21st century skills. The results showed that there was a significant correlation for the category of Critical Thinking Skills, Collaboration Skills, Communication

Skills, Creativity & Innovation Skills, and Global Connections. This means that the students' acquisition of these skills was likely linked with their teachers' activation of these skills. Çınar (2021) claimed that every component of 21st century skills become a requirement for English language instruction in order to promote students' requirements and learning differences.

On the contrary, there was no significant correlation for the category of Self-Direction Skills, Local Connections, and Using Technology as a Tool for Learning. This means that the students' acquisition of these skills had no relationship with their teachers' activation of these skills. This result supported the idea that learning approach nowadays is learner-centered in which students learn by themselves. Also, online learning helped them to develop their self-direction skills without depending too much on their teachers. A study has been conducted by Gómez-Parra (2021) on the development of the 21st century skills via face-to-face or online teaching. The results revealed that autonomy skills have been developed better through online learning. However, teachers need to practice these skills with their students inside the classrooms to help them develop these skills. Yue (2019) stated that higher education institutions need to focus on 21st century skills, such as problem solving and critical thinking, creativity and innovation, cross-cultural understanding, and ICT literacy.

Conclusions and Implications

This study aimed to explore the influence of PDPs on EFL teachers' practices in activating students' acquisition of 21st century skills. It also aimed to examine the correlation between teachers' activation of 21st century skills and their students' acquisition of these skills. The data were collected using two questionnaires and semi-structured interviews. The results revealed that teachers have activated all 21st century skills dimensions with different levels of activation. Moreover, the results demonstrated that students acquired all 21st century skills with different levels too. Furthermore, the results of the standard coefficient (β) in SEM revealed that teachers' activation of 21st century skills had no significant direct correlation with students' acquisition of 21st century skills. Lastly, the results of Pearson Correlations Coefficients which were used to look at the correlation in every dimension of the 21st century skills, showed that there was a significant correlation in the category of Critical Thinking Skills, Collaboration Skills, Communication Skills, Creativity & Innovation Skills, and Global Connections. On the other hand, there was no significant correlation in the category of Self-Direction Skills, Local Connections, and Using Technology as a Tool for Learning.

This study provides theoretical and practical implications for various stakeholders related to PDPs in higher education, namely PDPs designers, university administration, and EFL teachers. Since it was found that PDPs have influenced teachers' practices, it is recommended to offer online PDPs during flexible times besides the onsite ones. Some teachers do not have enough time to go for onsite trainings. Thus, offering online trainings allows teachers to participate in settings that suit their work time and lifetime. Therefore, teachers will focus more on the presented training sessions. So, universities should pay attention to their teachers' workload and their free time to plan the PDPs timings accurately. Teachers need to attend these programs with fresh minds in order to focus and learn in a way that enables them to transfer what they have learned to their classrooms to enhance their students' achievement. Additionally, universities are in consistent need for additional funding to support PDPs and make it as an ongoing lifelong process for their teachers.

Furthermore, as we live in a globalized, technological world, PDPs developers at higher education should integrate 21st century skills that help students to cope with this developed era. Curricula plays an important role in facilitating the acquisition of these skills as resulted in this study. Therefore, having such skills in the students' curricula will help teachers enhance them and then acquire by the students. The 21st century skills framework on which this study was

based was developed with input from teachers, education experts, and business leaders to define and explain the skills and knowledge students need to be successful in their life and work, and to illustrate the support systems that are necessary for 21st century learning outcomes. Thus, all the eight dimensions that were included in this study should be learned and acquired by the students to be prepared well for their future career.

Since this study did not examine gender differences among teachers and students at higher education and whether these differences have an impact on EFL teachers' educational practices in enhancing students' acquisition of the 21st century skills, it is worthwhile to study this issue further. Moreover, the current study covered all the eight dimensions of the 21st century skills as reported in the framework of 21st century skills. Thus, it would be interesting to conduct a study that concentrates on one dimension of the 21st century skills. This will make the findings more detailed and focused.

To sum up, English language teachers need to be professionally competent with the latest changes in this 21st century. Changes in the educational environment have made teacher training programs complex and difficult. Therefore, it is hoped that teachers' responses in this study regarding the activation of 21st century skill provide the administrators with recommendations about ways to implement 21st century skills in their PDPs. This feedback may help the PDPs planners to pay more attention to the skills on which teachers need more training sessions.

In addition, as the students at university are getting ready for the workplace, they need to be well equipped with knowledge and skills which will enable them to succeed in their work and life. One of these skills is 21st century skills. Thus, this study may provide EFL teachers an opportunity to better understand the importance of enhancing students' 21st century skills to prepare them for the future challenged life.

Declaration of Interest

The authors declare no competing interest.

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