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Research Article

Preparing Pre-service EFL Teachers for a Changing World: A Qualitative Survey on Pre-service EFL Teachers' Views about 21st Century Skills

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Abstract: Today, teacher education institutions are updating their curricula to guarantee that pre-service teachers are sufficiently equipped to properly incorporate the 4Cs, namely creativity, critical thinking, collaboration and communication, into their instructional practices. This study seeks to examine pre-service EFL teachers' perspectives on twenty-first century skills, given their crucial role in implementing the 4Cs in educational practice. A total of 11 senior pre-service EFL teachers participated in the present study. Data were gathered with semi-structured interviews and reflection papers. The results demonstrated that pre-service EFL teachers held favorable views about 21st century skills in terms of education, the 4Cs separately, the integration of the 4Cs in the national curriculum of ELT instruction and the importance of the 21st century skills for their future careers.

Keywords: Pre-service EFL teachers, twenty-first century skills, professional development, curriculum

1. Introduction

Various organizations provide specific definitions and frameworks for twenty-first century skills. The Organization for Economic Co-operation and Development (OECD) characterizes twenty-first century skills as the competencies and abilities that people must possess to function effectively as laborers and residents in the information-driven community of the twenty-first century. (Ananiadou & Claro 2009). The Partnership for Twenty-First Century Learning (P21), a collaborative institution comprising administrations and institutional sectors, developed a theoretical structure for twenty-first century skills. P21 (2009) defined four skills commonly regarded as 21st-century education and transformation skills, which are widely acknowledged as distinguishing competencies for students to deal with the difficulties of contemporary daily life occurrences and professional settings. P21 also maintains that any educational curriculum aimed at educating individuals for tomorrow's workforce should incorporate creativity, critical thinking, communication, and collaborative abilities.

The competencies that are commonly identified as the 4Cs can be achieved by restructuring the educational programme to meet the demands of the members of society in a globalized world.

This framework establishes the competencies, expertise, and information that are requisite for individuals to attain mastery and achieve success in their professional and personal lives. P21 (2019) specifies three categories of skills: "Learning and Innovation skills," "Information, Media and Technology skills," and "Life and Career skills." The International Society for Technology in Education (ISTE) identifies six competencies: (1) being creative and innovative (2) interaction and teamwork, (3) analytical thinking, resolving problems and taking decisions, (4) procedures of technology with related principles, (5) investigation and knowledge proficiency and (6) digital and media literacy (ISTE 2007). Anagün et al. (2016) claimed that individuals must possess fundamental skills together with advanced competencies to adjust to developments, catch up with technological advances, distinguish relevant information from the vast amounts of rapidly generated data through selection, analysis, and evaluation, apply this information in their daily lives, and convert it into outcomes. These competencies that someone should possess in the information society are defined as 21st century skills.

Despite various explanations and categorizations of twenty-first century skills, Voogt and Roblin (2012) assert that these competencies typically encompass collaboration, interaction, digital citizenship, resolving problems, analytical skills, innovative thinking, and productivity and that most proposed categorizations are congruent with one another. Given the ongoing nature of transformation, cultivating people who can adjust to various circumstances and engage in difficult actions is essential in the 21st century. Since all sectors are undergoing fast transformations, it is indisputable that learning settings and applications are affected by these changes. Motallebzadeh et al. (2018) assert that contemporary classrooms significantly differ from traditional memorization-based classrooms regarding educators, learners, instructional resources, and their interactions. These differences contributed to a novel perception of education. This notion states that the education system should identify individual traits in alignment with the requirements of the 21st-century information society and educate students equipped with the necessary competencies. Fundamental reforms in the education system definitely influence all partners or collaborators involved. Numerous countries worldwide have implemented extensive reforms in their curriculum, pedagogy, and evaluation methods to adequately prepare pupils for daily life and professional environments, as well as higher education, of the 21st century (Schleicher, 2012).

The Ministry of National Education revised the curriculum in Türkiye in 2017. Capabilities labeled as 21st-century skills were implemented into the revised curriculum. Relying on this, The Turkish Competencies Framework (TYC) outlines the abilities required for students to achieve individual, social, educational, and professional success on both national and international levels. TYC indicates eight essential competencies. The capabilities that are transmitted to pupils through the curriculum are listed in the following order: (1) interaction in the first language, (2) interaction in

other languages, (3) mastery of mathematics and fundamental technological competences, (4) digital literacy skills, (5) metacognitive skills, (6) interpersonal and public competences, (7) resourcefulness and entrepreneurial skills, (8) understanding of cultures (MEB, 2017).

Nonetheless, teachers, as the architects and practitioners of the instructional processes, are the individuals mostly affected by the aforementioned transformations. The ability of teachers to successfully carry out their new roles and responsibilities within these transformations, as well as to articulate their positive reflections, is strongly connected to their diverse qualifications. Teachers endowed with these skills must be individuals open to growth and persistently engaged in self-renewal. Hence, teachers must possess these skills prior to entering the profession. The primary institutions associated with the education of pre-service teachers in our country are the education faculties. These institutions offer education for prospective teachers which empowers them with the necessary skills and development for their teaching career while simultaneously, academic discussions regarding education to be undertaken. (YOK, 2018). Education faculties should train prospective teachers to instruct in the techno-pedagogical courses of the 21st century. In these circumstances, 21st-century skills ought to be embedded in teacher training programs.

1.1. 21st Century Skills in the Teacher Education Context

While a universal definition of 21st-century skills remains elusive, different perspectives identify a range of future skills. The term 21st century skills emphasize an integrated set of skills, expertise, and knowledge that is essential in both personal and professional contexts. These skills mainly encompass cognitive abilities and complex mental processes, including analytical reasoning, innovative thinking, solution development, teamwork, interaction with others and proficiency in digital literacy. Table 1 demonstrates an outline for the educational significance and meaning of the 4Cs, as proposed by Michaels et al., (2015).

Table 1

Descriptions of the 21st century 4Cs for pre-service teachers (Michaels et al., 2015)

Skill	Description
Creativity	Being creative can be defined as the capacity to generate, select, and incorporate distinctive, unique, or inventive methodologies for educational instruction.
Critical Thinking	Critical thinking is considered the ability to proficiently employ advanced cognitive skills to organize, teach, and evaluate pedagogical practices while incorporating and utilizing principles of instruction, understanding, and progress.
Communication	Communication means the capacity to effectively employ interpersonal skills and literacy aspects (four basic skills) to enhance instruction, understanding, and progress.
Collaboration	Collaboration can be described as being capable of operating efficiently and fairly, simultaneously appreciating other people in varied learning environments.

As seen in Table 1, **creativity** entails the ability to envision circumstances, invent novel figures or instances, and formulate preliminary interpretations or responses. This skill is in close touch with **critical thinking** skills, which help prospective teachers “to reflect on their practice in meaningful ways, to consider the effect their teaching has on student learning and develop habits that will stay with them” (Ward & McCotter, 2004, p. 244). Another important skill, namely **communication**, entails the effective expression of preservice teachers themselves, encompassing both productive skills and receptive skills. Prospective teachers must foster their interpersonal abilities for expressing knowledge, emotions, and meaning by means of verbal and non-verbal messages. They must also acquire proficiency in technological devices, the Internet, and mobile or digital tools to convert reading stories, articles or magazines and watching TV into an interactive communication activity that emphasizes information, media, and technological competencies. This involves the effective and creative application of technology in numerous learning environments to promote creativity, critical thinking, communication, and **collaboration**. Moreover, professional learning communities (PLCs) facilitate discussions that successfully integrate collaborative and

interpersonal skills into pre-service teacher education (Kagle, 2014). Pre-service teachers may engage with colleagues to explore and enhance their subject and educational knowledge as well as their technological expertise.

Implementing an educational policy that incorporates the 21st century 4Cs into the education system necessitates a high degree of collaboration and uniformity across all policy dimensions. The reform policy entails modifications in educational objectives, standards, curriculum, evaluation, instructional settings, and professional development to facilitate 21st-century skills.

Furthermore, teaching the 4Cs transforms the conventional function of instructors. In 21st-century school systems, teachers are expected to assume the roles of promoters and counselors, aiding the growth of learners, guiding learners towards goal attainment, and offering continuous feedback on their progress. Teachers must recognize their students' traits, design instructional activities properly and motivate them to participate in the learning process (Churches, 2008; Lonnie, 2011). Besides serving as promoters and counselors, instructors must be masters and counselors who assist learners in cultivating the 21st century's 4Cs. Teachers must possess the skills to set up and monitor the classroom setting to facilitate collaboration among groups that can operate autonomously (Trilling & Fadel, 2009). Facilitating a stimulating classroom that fosters cooperation and strong interaction among learners requires teachers to be proficient and approachable communicators (Churches, 2008).

Nonetheless, most of the pre-service teacher education departments center merely on broad competencies, resulting in a failure to link knowledge with experience. The fundamental objective of teacher education should be to equip pre-service teachers with a diverse array of pedagogical techniques, allowing them to formulate adaptable and progressive tactics for the varied classroom settings they will encounter in their schools. Peters (2012) recommends that pre-service teachers must foster the abilities and traits which allow them to reflect on their students' and their personal behaviors. Teacher education departments at universities have been revising their curricula to guarantee that pre-service teachers are sufficiently equipped to effectively incorporate the 4Cs into their instructional practices. The present study seeks to examine pre-service EFL teachers' views about 21st century skills, given their crucial role in implementing the 4Cs and integrating these skills into educational practice.

Accordingly, the current study addresses the research questions given below:

1. What are pre-service EFL teachers' general perceptions of 21st century skills in terms of education?
2. What are pre-service EFL teachers' perceptions about 21st century skills (4Cs) respectively?
 - (a) perceptions about creativity
 - (b) perceptions about critical thinking
 - (c) perceptions about communication
 - (d) perceptions about collaboration
3. What are the beliefs of pre-service EFL teachers regarding the incorporation of the 4Cs into the national curriculum for English Language Teaching instruction?
4. What 21st century skills do pre-service EFL teachers need to have for their future professional development?

2. Method

2.1. Research Design

In this qualitative descriptive study, the data are interpreted according to themes predetermined by the researcher. Descriptive analysis is a technique that incorporates direct quotations from responses to facilitate a thorough examination of content. The aim of this analysis is to present the findings in a structured and interpreted format. To attain this objective, the data are presented clearly and systematically. After that, the descriptions are put together and analyzed to get final outcomes. (Yıldırım & Şimşek, 2011). This study presents and interprets qualitative data collected from pre-service EFL teachers' perspectives by presenting direct quotations from semi-structured interviews and reflection papers. During the qualitative data collection stage, the researcher examined pre-service EFL teachers' views about 21st century skills, specifically 4Cs.

2.2. Participants and Setting

The study was conducted at Dokuz Eylül University and the participants were fourth – year English Language and Teaching Department pre-service teachers. The participants were chosen through convenience sampling method. Purposive sampling was used in the selection of the sample and this sampling method helps to examine the events that are thought to have rich information and to discover the facts (Creswell, 2013). It emphasizes obtaining information from participants who are available to the researcher. A total of 11 senior pre-service EFL teachers took part on a volunteer basis. The pre-service EFL teachers who volunteered to participate in the study signed consent forms. The participants were informed about the study's purpose and use of their data. In presenting the findings, participants' names were changed to maintain anonymity. Ethical approval was also taken from the institution.

2.3. Data Collection Tools

Borg (2006a) asserts that questionnaires and interviews are the most frequently used tools for obtaining teachers' views and perspectives. In this study, the data were collected through semi-structured interviews and reflection papers. A sheet for demographic information, including gender (8 female, 3 male), academic achievement (GPA scores ranging from 3.0 to 3.5), experience of private tutoring (6 participants) and experience of using teaching skills during practicum (7 participants acceptable, 4 participants well-qualified), was given to the participants. Four semi-structured interview questions were developed to understand pre-service EFL teachers' general perceptions of the 21st century skills, perceptions of the 4Cs (creativity, critical thinking, communication and collaboration separately), their opinions about the incorporation of these skills into the curriculum and the contribution of these skills to their professional development. Pre-service EFL teachers were also requested to make reflections on their experiences about 21st century 4Cs. Semi-structured interview questions were reviewed by three professionals who are working on teacher education development in the qualitative research area. This was necessary for the validation of the study.

2.4. Data Analysis

Semi-structured interviews were initially audio recorded and subsequently transcribed verbatim for qualitative analysis. The code descriptions were utilized to determine the frequency of responses, encompassing overarching patterns or significant response. A deductive approach was employed for the qualitative analysis, in which the researcher identified categories based on a conceptual framework, literature search, and research questions or interviews. (Berg 2009). The responses were linked to pre-established categories. (Critical Thinking, Creative Thinking, Collaboration and Communication; the 4Cs). Reflective papers were also analyzed by following the same process.

3. Findings

3.1. Pre-service EFL teachers' general perceptions of the 21st century skills in terms of education

According to the responses of the participants to the first research question, pre-service EFL teachers have similar perspectives on 21st century skills in terms of education. The participants pointed out that people in today's world need to possess these skills to address the requirements of a constantly changing society. Especially within the field of teaching, teachers and pre-service teachers are responsible for creating a classroom environment in which they support their students' learning through communication with various technological devices and they should focus on improving the students' various literacy skills. One participant, for example, expressed his opinions as follows:

21st century skills shape the education of future with the needs of individuals which lead to global citizenship in today's rapidly changing world. Especially with technology, the whole teaching process becomes more effective for both teachers and students. In my opinion, giving importance to communication to enhance students' use of English through various devices and creating a learner-centered environment supporting students' information and digital literacy are the requirements of the 21st century. (Emre)

Another participant reported her general perceptions of the 21st century skills as given in the comment below:

21st century means sudden changes and developments. We should catch up with the current trends, be open to new ideas, question everything, think multidimensionally and adapt new methods and approaches. These are the necessities of this century. (Sevim)

3.2. Pre-service EFL teachers' perceptions towards the 21st century skills (4Cs)

Pre-service EFL teachers' perceptions of the 4Cs, which are creativity, critical thinking, collaboration and communication respectively, are analyzed as the second research question. The participants stated that the more the students are given the chance to produce original things and the more their curiosity is triggered, the more their creativity increases. They valued creativity in the classroom, especially in relation to expressing and generating new ideas. Here are some opinions:

Creativity is what makes a lesson enjoyable. Unlike traditional ways of teaching, students should be given the opportunity to recognize different dimensions, alternatives, and unusual things so that they push their limits and create new things which also improves their self-esteem. In 21st century we need individuals who are curious, open-minded and innovative. (Sibel)

Creativity is the practice of thinking outside the box. You can see things other people may not see. In 21st century classes we need such individuals. As a teacher I will allow my students to express themselves and execute original ideas with a range of activities and learning styles. (Buse)

For critical thinking, the participants underlined that this skill is tightly connected with other skills like problem-solving and creativity which can be improved by using different approaches and activities in the learning environment. In the following statements the participants also suggested that their practicum experience helped them ask some critical questions about their performance and improve themselves to be role models for their students.

As a prospective teacher, I try to be critical thinker because it is wrong to accept every piece of information without questioning. In my classroom I will help my students improve their critical thinking with the activities I do and with the materials I choose. Beyond comprehension, students need to question what is being said. Critical thinking leads to problem-solving also and triggers creativity as well. (Efe)

Critical thinking enables me to look back at myself at the end of the day. In the practicum for instance, I ask myself some critical questions like: What did I do wrong and right today in the classroom? Did I use the correct techniques and methods while teaching? What should I do tomorrow to scaffold my students' learning? If I can be a role model to my students, they will also ask themselves similar questions and this will become a habit for them. (Ayse)

From the responses of the participants about collaboration, it can be concluded that through a variety of activities, teachers can promote collaboration so that students are able to discuss ideas in a group and improve their communication skills. The following expressions clarify the perceptions of one of the participants:

Through collaboration people achieve a common goal. In the classroom it is important because whether students realize or not, they will work with other people in their working life. So the teacher should take this into consideration. Students can work in groups, do projects and presentations, learn from one another, share opinions ... Students develop higher-level thinking, leadership skills, oral communication. Teamwork is the key competence for the 21st century. (Kerem)

Another participant emphasized teacher collaboration and stated that teacher collaboration offers educators the opportunity to come together, exchange ideas, and collaborate efficiently. In her final remarks she also suggested that teacher – student collaboration is also vital for student performance.

As a pre-service teacher, I strongly believe that teacher collaboration encourages continuous growth and in schools special times and environments can be created for sharing ideas and materials. There are a lot of online platforms and social networks where teachers meet and communicate. We also should not forget teacher-student collaboration... It increases student engagement, success and motivation. (Betül)

Finally, the participants made comments about communication as one of the 4Cs. They described it as a means to present lessons using various channels and formats. Communication is also closely related to the participants' use of technology. One participant reported that:

In the 21st century technology provides multiple forms of communication. Internet, cell phones, social media, websites ...etc. Teachers should be able to use written, oral and non-verbal resources in different forms and create a classroom setting where students communicate actively, safely and effectively using a variety of resources. (Buse)

3.3. Beliefs toward the integration of the 4Cs in the national curriculum of ELT instruction

Pre-service EFL teachers' beliefs toward the integration of the 4Cs in the national curriculum of ELT instruction was one of the research questions that the researcher investigated in this study. Most of the participants claimed that despite the curriculum's revision to line with 21st-century skills, teachers cannot transfer these skills into the classroom due to several reasons. Two participants expressed their ideas as follows:

The application of 21st-century skills taught in theory is very difficult in the classroom environment because students lack motivation, and the classes are crowded. The functional aspect of the language is in the background, and the variety of materials is limited. There is not enough time and resources provided. (Kerem)

Teachers' skills remain on paper because they are not given sufficient flexibility and freedom. The curriculum being exam-oriented limits the teaching of English. The themes in the books should be more current, ethical values should be emphasized, and the curriculum should be organized towards becoming a global citizen. For this, critical and creative thinking, interaction, and cooperation skills should be emphasized. In conclusion, the 21st century requires these skills. (Ayse)

Another participant put emphasis on the fact that exam-oriented system prevents teachers from implementing the 4Cs into their lessons, and added that there is an immediate necessity to change the system:

For the English language education curriculum to be based on these four fundamental skills, the exam-oriented education system needs to change, and a transition to a more productive, interactive, innovative, creative, technological, and multifaceted education is necessary. (İdil)

3.4. Pre-service EFL teachers' views about the 21st century skills necessary for professional development

The most frequent responses of the participants about 21st century skills necessary for their professional development were **creativity, communication, technology use** and **digital literacy**. The other most prevalent skills that pre-service teachers need to possess were **critical thinking skills** and **collaboration** accompanied by **problem-solving skills** respectively.

One participant underlined creativity as the key skill in 21st century:

Creativity cannot be obtained, but it may be developed. Teachers, responsible for enhancing their pupils' creativity, must possess an independent and distinct thinking process, engage in extensive reading, stay updated with current knowledge, pursue personal development, and ultimately, develop greater creativity. They must initially engage in creative thinking to effectively demonstrate to their students how to think. (Efe)

As an example of how to integrate technology, collaboration and problem-solving into classes, one participant provided the following statements:

During my practicum, I employ many technological tools in my classes, integrating websites and instructional materials to engage and motivate my learners. If students use technological tools, they love and value them; I get support from applications such as Kaboot for vocabulary practice on the smart board. We also conduct problem-solving activities which demand participants to collaborate in groups, thus encouraging teamwork and cooperation. Students are asked to cooperate, share ideas and create solutions. They are able to observe one another's mistakes and provide feedback. (Babar)

Utilizing technological devices in teaching is an effective method to engage and encourage learners. Teachers may captivate the interests of a generation nurtured in the digital era by integrating websites and instructional tools into their courses, thereby enhancing engagement and interactivity in the learning process. As noted in the quotation, most of the skills can be implemented into the curriculum. The participants largely indicated possessing the required skills for the proficient application of technological devices and online settings, such as smart boards and computers, and emphasized the implementation of collaborative teaching and problem-solving strategies to fulfill the instructional requirements of the students they will teach.

In addition to technology integration and problem-solving, pre-service EFL teachers believed that being digitally literate is very important and they were willing to raise their digital literacy for their future career. Examples of these evaluations are captured in the following quotes:

I consider myself to be digitally literate. I enjoy engaging with computers, acquiring knowledge about new software, and utilizing these programs. (İdil)

I take pleasure in utilizing digital technologies and I believe I possess proficiency in this area. I enjoy exploring new tools and incorporating them into classes. This creates more enjoyable and appealing lessons. (Babar)

A quote from the views of participants who anticipated teachers to facilitate opportunities for autonomous, flexible, and critical thought is given below:

"Generating individuals who think and perceive identically to their teachers, and who are incapable of escaping limitations, even mentally..." Is this a characteristic of a successful teacher? (Elif)

The same participant claims that as a pre-service teacher she needs to develop herself since she lacks some of the skills required for being a qualified teacher. The reasons for this seem to be the previous experiences and parental influence.

I have continuously wanted more participation in thinking, analyzing and communication. Nevertheless, my family did not give me the opportunity to think about things further since they were making decisions on my behalf. I had no obligation to share. My desire and ambition to explore faded. Problem-solving includes an element of creativity. Now, I still struggle to generate solutions to difficulties. (Emre)

4. Discussion and Conclusion

The present study aimed to explore pre-service EFL teachers' views about 21st century skills, given their crucial role in implementing the 4Cs and integrating these skills into educational practice. The qualitative data indicated that pre-service EFL teachers' perceptions of the twenty-first century learning and the 4Cs are at a high level although they have some concerns about the implementation stage. Pre-service EFL teachers identified these competencies as essential for becoming effective individuals capable of adapting to societal demands, employing creativity and critical thinking to address challenges, inspiring others, utilizing technological tools, fostering effective communication, collaborating with colleagues and students, and possessing digital literacy skills within the educational context. Lei (2009) identified that pre-service teachers regarded technology as a vital element in their lives. This suggests that the pre-service teachers in this study connect communication, technology, and digital literacy to each other and apply these skills to enhance educational activities in the learning environment. In relation to this, Kumar and Vigil (2011) characterized pre-service teachers as those capable of integrating new technology into collaborative projects or communication.

In addition, pre-service EFL teachers demonstrated an intense focus on the 4Cs and an eagerness to integrate the teaching of these skills into the classroom. The results of creative thinking perceptions indicated that creativity makes the lessons more enjoyable and helps students see multiple dimensions, improving their self-esteem and curiosity. By expressing themselves with a variety of activities they generate novel ideas. The perceptions on creativity seem to be in accordance with the earlier studies which claimed that creating new things is an important part of learning and the twenty-first century modern classroom (Runco & Johnson, 2002). The findings related to critical thinking emphasized that pre-service EFL teachers try to be critical thinkers and be a role model for their students. This result supports the findings presented in the relevant literature, indicating that students must possess strong critical thinking skills if they want to be equipped with the 4Cs (Black, 2005; Halpern, 2014). The pre-service EFL teachers also made critical reflections on their teaching techniques and methods and tried to improve themselves during their practicum experiences. In addition, the results also put forward that pre-service EFL teachers gave special attention to teamwork, helping and supporting each other. They thought that students develop higher-level thinking, creativity, communication and respect through collaboration. Also, for teachers there are many platforms and social networks where they meet and negotiate with their colleagues. Furthermore, the pre-service EFL teachers stated that being a good communicator in the twenty-first century is very important. They tried to achieve this in the classroom by using different materials, oral, written and nonverbal communication skills in the classroom. These perceptions of the pre-service EFL teachers can be linked with Trilling and Fadel (2009) who said that communication skills help individuals articulate thoughts and ideas effectively.

Regarding the perceptions of integrating the 4Cs into the national curriculum of English Language Teaching (ELT), the majority of pre-service EFL teachers asserted that the National Education Curriculum inadequately equips teachers to implement the 4Cs into their subject teaching. The exam-oriented educational system requires reform, and the materials developed by the Ministry of Education must align with the requirements of the twenty-first century, providing greater autonomy and flexibility to teachers. Currently, teachers must acquire and use twenty-first century skills and knowledge (Slabbert, 2006).

Finally, it was determined that among the twenty-first century skills essential for their professional development, pre-service EFL teachers mostly featured creativity, communication, technology use and digital literacy, critical thinking and collaboration, followed by problem-solving skills. This particular situation may clarify why pre-service teachers prioritize these skills for themselves and for their prospective students. Evaluation of studies undertaken by experts in several disciplines reveals that teaching methods in Turkey largely rely on memorizing. (Baştürk 2012; Sağlam & Büyükuysal, 2013). Pre-service teachers' desire to use different approaches and to harmonize them with the twenty-first century skills in their professional lives underlines the fact that in education faculties teacher educators should place more emphasis on these skills to prepare pre-service teachers for the challenges of the globalized world (Gudmundsdottir & Hatlevik 2018).

Pre-service teachers have a vital role in delivering twenty-first century skills within the educational setting. For this reason, teacher training programs play a key role in enabling pre-service teachers to foster a practical understanding of these essential skills, particularly the 4Cs and other skills. Therefore, teacher educators should allow pre-service teachers to acquire the essential skills, knowledge and expertise to facilitate their professional development for the changing world.

4.1. Limitations and Suggestions

The structuring of the curriculum in education faculties, which are primarily responsible for teacher training, based on 21st-century skills is regarded as the main and crucial measure to ensure that students and teachers exploit these skills efficiently. The association of 21st century skills with the General Competencies of the Teaching Profession, and Special Field Qualifications might enhance the application of these skills by pre-service teachers after entering the profession. It is also suggested that action research studies with the pre-service EFL teachers can be conducted to help them to increase their knowledge on the 4Cs and integrate them into their instruction. Different qualitative and quantitative data collection tools can be used to enrich the data. Furthermore, the present study was conducted on senior students. Research can also be undertaken targeting various grade levels. Finally, the 21st-century skills of pre-service EFL teachers from various educational faculties in different regions of Turkey can be compared.

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