



21ST CENTURY SKILLS LEVEL OF TEACHER CANDIDATES

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Abstract:

The 21st century skills are a set of abilities that students need to develop in order to succeed in the information age. When most workers held jobs in industry, the key skills were knowing a trade, following directions, getting along with others, working hard, and being professional—efficient, prompt, honest, and fair. To hold information-age jobs, though, students also need to think deeply about issues, solve problems creatively, work in teams, communicate clearly in many media, learn ever-changing technologies, and deal with a flood of information. The rapid changes in our world require students to be flexible, to take the initiative and lead when necessary, and to produce something new and useful. This presentation intends to help the audience get an insight about (1) the current status of the teacher candidates in a typical faculty of education in Turkey about possessing the 21st Century Skills, and (2) to what extent the faculty of educations are helping the teachers candidates acquire these skills.

Keywords: teacher candidates, 21st century skills, solution, information, creativity, media, collaboration

1. Introduction

The main goal of this paper was mainly sought to answer the questions: to what extent do the teacher candidates possess the 21st Century Skills? And is there a difference between first and fourth year student teachers levels of 21st Century Skills possession?

The 21st century skills are a set of abilities that students need to develop in order to succeed in the information age. For students, proficiency in 21st century skills—the skills, knowledge and expertise students must master to succeed in college, work and

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life—should be the outcome of a 21st century education. To be “educated” today requires mastery of core subjects, 21st century themes and 21st century skills. To help students achieve proficiency in 21st century skills, teachers and administrators need education support systems that strengthen their instructional, leadership and management capacity.

Turkey’s education system can be characterized as predominantly public and centralized. The education system has long valued the integration of information and communication technologies (ICT) in classrooms, and various efforts have been made to provide schools with access to computing equipment and interactive teaching technologies. The Turkey’s Ministry of National Education (MoNE) designed FATİH to provide interactive whiteboards, tablet computers and Internet network infrastructure to all schools in an attempt to enhance equality of opportunity in education and to improve ICT use in teaching and learning processes in schools. All students will be associated with the media and technology skills. FATİH project aims to make teaching more student centered and suitable to teach 21st century skills. People in the 21st century need to be successful in business life; creative and critical thinkers, problem solvers, and have high communication skills. Moreover they should know how to achieve the necessary knowledge, be able to use technology to reach the information, open to new ideas, be flexible and adaptive, know their responsibilities, be self-managed and proactive owner, have social and cultural skills, must be an individual with leadership skills and productive ideas. In order to students achieve these skills teacher candidates should be trained accordingly. Therefore this research will give an insight about current status of teacher candidate’s 21st century skills and whatever collage education makes any difference from 1st grade to 4th grade on 21st century skills.

In this study, a questionnaire which was developed by Dr. Hasan Caliskan has been used. In the survey, there are 50 items that question the 21st Century Skills and it includes the choices that are related with level of the ownership these skills and how important the skills they think by the teacher candidates. Learning and innovation skills, information, media and technology skills, life and career skills are considered as the sub-dimensions of the survey. The population of the study has been built up by the students who were at the their first to final year in the 2016-2017 academic year in the departments of Education Faculty of Eskisehir Osmangazi University and its sample has been built up by randomly chosen 293 students from these teacher candidates.

Briefly, this presentation intends to help the audience get an insight about (1) the current status of the teacher candidates in a typical faculty of education in Turkey about possessing the 21st Century Skills, and (2) to what extent the faculty of educations are helping the teachers candidates acquire these skills.

2. Conceptual Framework

21st century skills is one of the most discussed concept in today's education settings. There is no common definition of 21st century skills and knowledge in literature. AT21CS consortium which includes Australia, Finland, Portugal, Singapore, the United Kingdom, and the United States—organizes 21st century skills, knowledge, and attitudes, values, and ethics into the following four categories (Saavedra & Opfer, 2012):

- Ways of Thinking: creativity and innovation, critical thinking, problem solving, decision making, and learning to learn (or metacognition)
- Ways of Working: communication and teamwork
- Tools for Working: general knowledge and information communication technology (ICT) literacy
- Living in the World: citizenship, life and career, and personal and social responsibility, including cultural awareness and competence.

Partnership for 21st Century Learning has developed a framework to organize themes.

This framework has three main sub category as follow (P21, 2016);

Learning and Innovation Skills:

- Creativity and innovation skills
- Critical thinking and problem solving skills
- Communication and collaboration skills

Information, Media and Technology Skills:

- Information literacy
- Media literacy
- ICT (information and communications technology) literacy

Life and Career Skills:

- Flexibility and adaptability
- Initiative and self-direction
- Social and cross-cultural skills
- Productivity and accountability
- Leadership and responsibility

New standards for students are replacing the basic skill competencies and knowledge expectations of the past. To meet this challenge schools must be transformed in ways that will enable students to acquire the creative thinking, flexible problem solving, collaboration and innovative skills they will need to be successful in work and life (Pacific Policy Research Center, 2010).

3. Methodology

The purpose of this paper is to explore the current status of the teacher candidates 21st Century Skills and to find out what extent the faculty of educations are helping the teacher's candidates acquire these skills. In data collection and analysis processes with regards to answer research questions survey design of quantitative method was used.

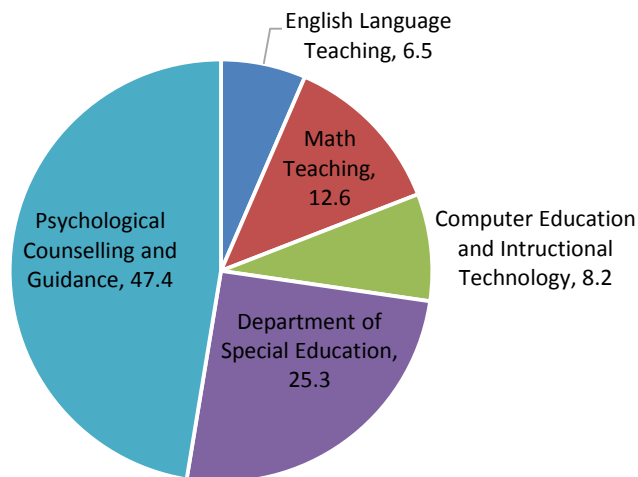
In the survey, there are 50 items that question the 21st Century Skills and it includes the choices that are related with level of the ownership these skills and how important the skills they think by the teacher candidates. Survey questions are rated from 1 to 5 which are (for ownership status; 1 = certainly I don't have; 5 = I certainly have and for importance status; 1 = absolutely not important; 5 = absolutely important).

A survey design provides a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of that population. From sample results, the researcher generalizes or draws inferences to the population (Creswell, 2014). Participants of the study were 293 teacher candidates at Eskisehir Osmangazi University, Faculty of Education in 2016-2017 fall term. Convenience sampling a specific type of non-probability sampling method is chosen. Convenience sampling is a type of sampling where the first available primary data source will be used for the research without additional requirements (Dudovskiy, 2016). In other words, this sampling method involves getting participants wherever you can find them and typically wherever is convenient.

3.1 Participants and Sampling

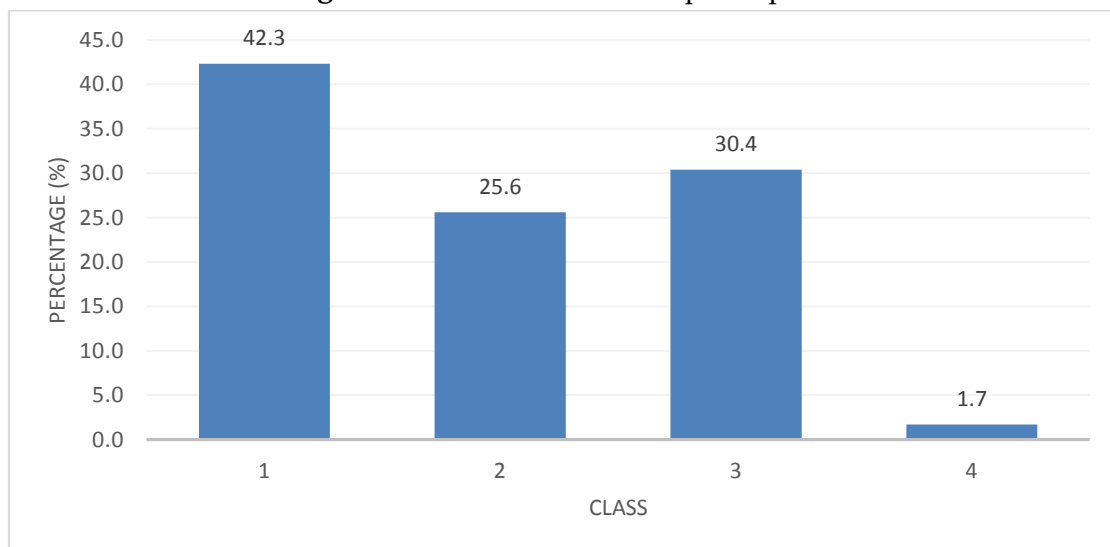
The teacher candidates enrolled in the study is 293 which consist of five different departments. These departments are shown in Figure 1 below. Most of the participant is from Psychological Counselling and Guidance Department (47,4%). It follows Department of Special Education (25,3%). The least participant is from English Language Teaching Department (6,5%).

Figure 1: Department distribution of participants



The distribution of teacher candidates according to class they enrolled is shown in Figure 2 below. Most of participant is attending to 1st class (42, 3%). It follow 3rd class (30, 4%) and 2nd class (25, 6%) accordingly.

Figure 2: Class distribution of participants



4. Results

In order to analyze the survey data first mean scores of 21st century skills regarding of sub category items are calculated. According to descriptive analyses of teacher candidates survey result; The average score of teacher candidate regarding to importance of life and career skills has the highest mean score and was 4,53 (SD=.52). It follows the importance of learning and innovations skills 4.51 (SD=.57). The least mean score of teacher candidates is ownership of learning and innovation skills which is 3.85

(SD=.53). This result show us that teacher candidates are aware of 21st skills importance but they think they do not have enough information on this skills.

Table 1: Teacher candidate 21st Century Skills Descriptive Statistics

21 st Century Skills Sub Dimensions	Mean	S.D
Ownership of Learning and Innovation Skills	3.8568	.53162
Importance of Learning and Innovation Skills	4.5143	.57439
Ownership of Information, Media and Technology Skills	3.8425	.50150
Importance of Information, Media and Technology Skills	4.4274	.54212
Ownership of Life and Career Skills	3.9266	.53370
Importance of Life and Career Skills	4.5307	.52648
Overall Ownership	3.8753	.46561
Overall Importance	4.4908	.50638

A paired-samples t-test was conducted to compare ownership and importance of 21st century skills and there is a significant difference in mean scores of all 21st sub categories ($p < 0.05$).

Table 2: Paired Sample Statics

	Mean	S.D
Pair 1 Ownership of Learning and Innovation Skills – Importance of Learning and Innovation Skills	-	.56364
Pair 2 Ownership of Information, Media and Technology Skills - Importance of Information, Media and Technology Skills	-	.54502
Pair 3 Ownership of Life and Career Skills – Importance of Life and Career Skills	-	.53871
Pair 4 Overall Ownership – Overall Importance	-	.47338

This result show us that teacher candidates who have ownership of 21st century skills also think the 21st century skills are important. Actually this is an expected result, students who think on particular skill is very important also tries to have that skill.

In order to analyze effects of class level on 21st century skills, one-way ANOVA is conducted. Analyses result shows that there is significant difference in Importance of Learning and Innovation Skills, Importance of Information, Media and Technology Skills, Importance of Life and Career Skills, and finally in Overall Importance regarding to class level. In order to analyze which of the specific class level is differed; multiple comparisons table which contains the results of the Tukey post hoc test is used.

- Post hoc comparisons using the Tukey HSD test indicated that the mean score of Importance of Learning and Innovation Skills for second class teacher candidates ($M=4.63$, $SD=0.40$) is significantly different than the first class teacher candidates ($M=4.38$, $SD=0.74$).
- Post hoc comparisons using the Tukey HSD test indicated that the mean score of Importance of Learning and Innovation Skills for third class teacher candidates ($M=4.59$, $SD=0.35$) is significantly different than the first class teacher candidates ($M=4.38$, $SD=0.74$).
- Post hoc comparisons using the Tukey HSD test indicated that the mean score of Importance of Information, Media and Technology Skills for second class teacher candidates ($M=4.58$, $SD=0.33$) is significantly different than the first class teacher candidates ($M=4.34$, $SD=0.63$).
- Post hoc comparisons using the Tukey HSD test indicated that the mean score of Importance of Life and Career Skills for second class teacher candidates ($M=4.67$, $SD=0.32$) is significantly different than the first class teacher candidates ($M=4.42$, $SD=0.64$).
- Post hoc comparisons using the Tukey HSD test indicated that the mean score of Overall Importance for second class teacher candidates ($M=4.63$, $SD=0.31$) is significantly different than the first class teacher candidates ($M=4.38$, $SD=0.63$).

Taken together, these results show us that there is significant difference between first class to second class in terms of importance of 21st century skills. Also survey result show us that teacher candidates don't have any significant difference in terms of ownership of 21st century skills.

5. Discussion

This survey result show us that teacher candidates are aware of 21st century skills importance in general but there is no such improvement in ownership of this skills while class level increase. The only difference is about second class level regarding of importance on 21st century skills. While Importance of Life and Career Skills have biggest mean value, Ownership of Learning and Innovation Skills have least mean value score. This result may give a clue about faculty education is poor in giving creativity and innovation skills, critical thinking and problem solving skills and communication and collaboration skills.

The keys to integrating 21st century skills into the classroom are application, connections and participation (Beers, n.d.). Faculty educators should give importance to teach 21st century skills. The ultimate aim of the National Education Philosophy should give importance to produce holistic human capital consisting of individuals who are

emotionally, intellectually, physically and spiritually balanced and integrated (Hiong & Osman, 2015). In order to reach this goal 21st century skills should be integrated in educational settings and further research should be conducted on effectiveness of teaching and learning activities in terms of 21st century skills.

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