JIES *Journal of Interdisciplinary Educational Studies*
October 2022, V(III), 10-24

Examining the Role of Teacher Education Institutions in Imparting 21st Century Skills: Perceptions of Male and Female In-service Teachers

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Abstract
In the 21st century due to the large appearance of digital technology, the education system of the present time emphasizes the development of twenty-first-century skills among students so that they to be successful in their future careers and life. Literature exposed the varied nature of twenty-first-century skill frameworks which are considered as a key driver for success. The aims of this research project were to analyze the different skills frameworks and present a common skill framework and examine the gap between acquired and required levels of skills. In-service teachers' opinions were collected by a self-developed questionnaire. Data analysis revealed that the mean score of both male and female in-service teachers on the required level of skills in terms of knowledge and proficiency was high as compared to acquired which shows a gap between acquired and required level of skills. Therefore, it was concluded that teacher education institutions are not playing a significant role in imparting 21st-century skills among students. The gap can be bridged if Higher Education Commission, Pakistan should integrate 21st-century skills into teachers' education curriculum and instruction. In this way, teacher educators would be able to impart knowledge and develop proficiency in required 21st-century skills among prospective teachers.

Keywords: Teacher education, 21st century skills, acquired and required level skills

1. Introduction

The rapid growth in information and communication has converted the 21st century into the digital century. According to Rychen and Salganik (2003), the challenges posed by the technological revolution have necessitated the development of new models and maps of learning. Digital technology impacted teaching-learning and has created several learning opportunities that are fast changing the way people think, communicate, and learn.

A nation's progress depends on the role of its teachers who play in building and growing up their students. A teacher has special skills in keeping the responsibilities in developing the societies, that's why teachers are responsible for producing tomorrow's leaders. In the current

digital era if a teacher fails to develop essential skills in students consequently students cannot cope with the challenges of their life. A “one size fits all” classroom is no longer appropriate because there is more diversity than in the past. The "3R's" (reading, writing, and math) as well as social studies, science, and language were previously prioritized in education. The system was teacher-centered and placed a strong emphasis on memorization, repetition, and lecturing as teaching tactics. Tests were administered at the end of the academic year to gauge the progress of the students. The importance of creating educational objectives and teaching strategies that prepare students for future careers and developing 21st-century skills is now recognized by curriculum developers (Alismail & McGuire, 2015).

As today’s youth is more mature than they were in the past, and they desire to be inspired and challenged in their academic pursuits. Liakopoulou (2011) added in the age of digitization, the goal of schools is not entirely focused on preparing students for the present-day but on changing the world. To achieve the said purpose a skill framework was created by The Partnership for 21st Century Skills which was integrated into the Common Core State Standards (CCSS) and Partnership for 21st Century Skills. To support students in developing the multifaceted skills necessary for the 21st century, this framework promoted the integration of fundamental academic knowledge, critical thinking, and social skills in teaching and learning. In such a skills framework “New 3Rs” i-e Routines, Relationship and Resilience (Cantor, 2021) and moreover, “4Cs” i-e Communication, Critical Thinking, Creativity, and Collaboration (Stauffer, 2021) are included as core academic content. By incorporating cognitive learning and skills into the curriculum students can develop a deeper comprehension of the subject as well as strategies for resolving challenging situations in the real world.

Therefore, there are a lot of expectations on today’s teachers to impart quality education that is in line with 21st-century skills required to compete in a technology-driven and ever-changing world (Harris, 2016). Ducharme & Shecter (2011) contended excellence in education is necessary for the digital age that could be conceivable if the government takes measures and actions to prepare the next generation for the contemporary digitalized world. Under current circumstances, larger pressure has been over on educational institutions in preparing students for a technology-driven world. According to Wellings & Levine (2009) in educational institutions, teachers are the main source who are crucial to any reform. Grand-Clement (2017) explains how the role of the teacher has changed in the light of the digital revolution from being merely a preacher to a mentor for students' learning and entire development as a balanced citizen. Amin (2016) explicated that it is the responsibility of teachers to address students' needs and foster skills that enable the students to be successful in the fast-growing world.

The 21st century is quite different from those of the previous and it is obvious that the role of the teacher has been extended from mere facilitators of student learning and imparting knowledge to designers of effective classroom learning environments, where students can acquire the skills, they may require in the near or distant future, for instance, higher-order thinking, creativity, flexibility, Social & Cross-Cultural, and leadership (Darling-Hammond, 2006). In this concern, Symanyuk and Pecherkina (2016) argued that, nowadays, the skills required for teachers at all levels of education have changed and particularly, schools are looking forward to dynamic, talented, creative and innovative, optimistic, and imaginative teachers. Moreover, Feuer et al. (2013) argued that in the changing world, the imparting of certain skills including digital literacy skills, information skills, critical thinking, interpersonal, and digital literacy skills, especially life skills and career-based skills, is to be considered the responsibility of a teacher.

Teacher education is a proven phenomenon that transforms the attitude, skill, and knowledge of prospective teachers which make them enables to perform professional responsibilities effectively (Anees, 2005). According to the views of Ullah et al. (2008), teacher education prepares neophytes could be able to address classroom challenges. They suggested that the programs offered in the teacher education institutions would be planned in such a manner that the teachers produced by these programs are "workplace fit".

Rational of the Study

According to the Government of Pakistan, Draft National Education Policy (2017), teacher education is being delivered in a variety of ways, including face-to-face, online, virtual, and distance learning. It is admitted that teachers having professional skills and teaching attitudes, can make difference in the classroom. All the teacher education programs play a crucial role in empowering prospective teachers so that they could be able to make the next generation to be lifelong learners, innovators, and career-oriented (Wellings and Levine, 2009).

One of the issues with teacher education in Pakistan is the low status of teachers and the theory-based approach (Nawaz, 2013), furthermore, (Mahmood, 2014; UNESCO, 2015; and Amin, 2016) reported that lake of attitude toward the teaching profession and professional-related skills in teachers are root case of poor quality of education at school in Pakistan. To address this delicate issue, the Government of Pakistan (National Professional Standards for Teachers-2009) has emphasized the inclusion of professional competence and skills-based activities as well as reflective content in the curriculum of teacher education. This will enable new teachers to be better equipped to deal with the diverse needs of their students and to develop their personalities in accordance with the demands of a rapidly changing global environment.

A plethora of studies indicated an aloofness between the courses offered in teacher education institutions based on theory and the market requirement (Buaraphan, 2012). New education policy-2019 also stressed that disproportion exists between the supply and demand of teachers in the context of 21st-century skills and dispositions (Government of Pakistan, National Education Policy, 2018). Professional skilled based and innovative teacher training programs are pivotal for equipping prospective teachers to participate and succeed in a changing world (Action Plan for Education, 2017). Meanwhile, the planning commission of Pakistan (2018) delineates that there is a need to revisit the structure of teacher education and curriculum to 21st-century demand driven which makes sure the need-based supply of teachers at all levels of schooling is in line with the Pakistan Vision-2025.

Pakistan and China's (CPEC-2015) agreement has changed the market requirements from theory-based to skill-based education. Now the labor market is anticipating skilled workers' school education and the Ministry of education emphasized the curriculum should be diversified at the secondary level. Govt. of Pakistan has addressed this issue in the National Education Policy framework (2017) and suggested professional training of teachers should be based on the development of job-related skills. Therefore, Pakistan launched curriculum reforms across the country with the main goal to sustain uniform standards in teacher education, across the country. Moreover, transform teacher-centered instruction to student-centered instruction and nurture 21st-century skills.

Literature on 21st-century skills frameworks highly demanded the development of 21st-century skills in students from the education system in the digital era. Although there is an increasing emphasis on skills for employability generally referred to as workplace skills. There is growing evidence that many international thought leaders, business leaders, and researchers too are

increasingly requesting education systems to prepare students with skills and competencies that will enable them to face complex challenges now and in the future. Therefore, to meet the needs of the digital era, teachers themselves should possess 21st-century skills. It is obvious that Pakistan needs teachers that should have knowledge and proficiency in the skills which are compatible with the knowledge-based economy so that they be able to thrive and successful in the digital century. Therefore, it is crucial to pay special attention to examining how teacher education institutions are preparing prospective teachers. The objectives were:

1. To determine the gap between acquired and required levels of skills in terms of knowledge by gender.
2. To assess the gap between acquired and required levels of skills in terms of proficiency by gender.

2. METHODOLOGY

Research Design and Sampling

The study was solely based on quantitative data, so the survey technique was used to collect the data from in-service teachers for analyzing the gap between acquired and required levels of skills. This section flung a light on the selection of respondents, data collection instrument, and data analysis procedure. All the secondary school teachers belonging to Govt. high schools in Punjab were the population. There are 38 districts in Punjab and as per recommended by Gay et al. (2011), 20% sample size was taken as a sample therefore eight districts including Bhakkar, Chakwal, Gujranwala, Lahore, Mianwali, Sargodha, Narowal, and Vehari were chosen randomly. The researcher sent 100 questionnaires to each of eight Districts Education Officers (Secondary) for collection of data and 487 filled-in questionnaires were received and used for analyses purpose.

Instrumentations and Validation

To examine the gap between acquired and required levels of skills with respect to knowledge and proficiency, a questionnaire was used as the research instrument. The questionnaire was developed keeping the focus on the following skills frameworks recommended for the 21st century which are compatible with teacher education programs:

- ✓ The Partnership for 21st Century Skills-2006
- ✓ EnGauge Framework from Metiri/NCREL
- ✓ Iowa Core 21st Century Skills
- ✓ Connecticut State Department of Education-2010, Common Core of Teaching: Foundational Skills
- ✓ Assessment & Teaching of 21st Century Skills
- ✓ Survival Skills by Tony Wagner of Harvard Graduate School of Education
- ✓ Singapore's TE21 Model of Teacher Education
- ✓ National Professional Standards for Teachers in Pakistan (2009)

After extensive analysis of skills frameworks, it was revealed that there is no "best-fit" single framework available to adopt so common skills were identified from the above frameworks, and with the consultation of experts a skill framework was derived named as "Common skills framework" which is as under:

Common Skill Framework		
1. Decision Making	7. Assessment	13.Demonstration
2. Creative Thinking	8. ICT Literacy	14. Management
3. Scientific Literacy	9. Time Management	15. Need Analysis
4. Problem Solving	10. Communication	16. Social
5. Adoptability	11. Leadership	17. Interpersonal
6. Collaboration	12. Critical Thinking	

Hence the questionnaire was developed based on the above 17- Skill framework. The questionnaire was comprised of in-service teachers' gender, acquired, and required level of knowledge and proficiency using a 5-point Likert type scale (ranging from "0" to "4").

Data Collection and Analysis

Data were collected by questionnaire from in-service teachers through personal contacts. Descriptive and inferential statistics were used for data analysis. Data were entered and analyzed using Statistical Package for the Social Science (SPSS) version 25 for windows to assess the difference between acquired and required levels of skills in terms of knowledge and proficiency. Paired sample *t-test* was applied to examine the gender difference between acquired and required levels of skills in terms of knowledge and proficiency.

3. RESULTS

Geographic Distribution

With regards to district distribution, there were eight (8, 20%) districts participated in this research project. The majority of the participants were from the Gujranwala district (68, 64.2%). From remaining districts had more than 50 participants, whereas a few belongs to the Vehari district.

Table 1: Gender Distribution

Gender	Frequency (f)	Percentage (%)
Male	263	32.87
Female	224	28.00
Incomplete	55	6.87
Total Respondents	800	100
Final total	487	60.87

Table 1 depicted the gender distribution in such a manner that there were 263 male in-service teachers (32.87%) and 224 female (28.0%). A few of the in-service teachers sent incomplete questionnaires in terms of not choosing the options male or female (6.87%), and the researcher has decided not to use these questionnaires during the process of analysis. A total number of 487 questionnaires were found completed in all respects and finally used for analysis (60.87%).

Analysis of Acquired and Required level of Knowledge of 21st Century Skills

The frequencies of the acquired and required level of knowledge of skills under study were compared between in-service male and female teachers.

Table 2: Acquired and Required level of Knowledge of 21st Century Skills

21st Century Skills	Level	Gender	Knowledge				
			N	M	SD	t	ρ
Decision Making	Acquired	Male	263	0.78	1.328	0.631	0.529
		Female	224	0.70	1.276		
	Required	Male	263	2.59	0.976	-1.424	0.155
		Female	224	2.72	1.098		
Creative Thinking	Acquired	Male	263	0.82	1.333	-0.625	0.532
		Female	224	0.90	1.486		
	Required	Male	263	2.81	0.979	3.236	0.210
		Female	224	2.52	0.947		
Scientific Literacy	Acquired	Male	263	1.00	1.203	1.488	0.137
		Female	224	0.83	1.181		
	Required	Male	263	2.01	0.749	-1.815	0.070
		Female	224	2.13	0.674		
Problem Solving	Acquired	Male	263	0.87	1.144	-0.137	0.891
		Female	224	0.89	1.068		
	Required	Male	263	3.21	0.666	-1.689	0.092
		Female	224	3.32	0.691		
Adaptability	Acquired	Male	263	2.60	0.696	0.241	0.809
		Female	224	2.59	0.697		
	Required	Male	263	3.24	0.885	-0.186	0.853
		Female	224	3.25	0.792		
Collaboration	Acquired	Male	263	2.34	0.858	-1.199	0.231
		Female	224	2.43	0.789		
	Required	Male	263	3.22	0.784	-1.556	0.120
		Female	224	3.34	0.962		
Demonstration	Acquired	Male	263	2.37	0.931	0.779	0.436
		Female	224	2.31	0.763		
	Required	Male	263	3.10	1.007	-3.763	0.177
		Female	224	3.38	0.522		
Management	Acquired	Male	263	3.37	0.898	0.644	0.520
		Female	224	3.32	0.844		
	Required	Male	263	3.07	0.880	-1.729	0.084
		Female	224	3.19	0.659		
Need Analysis	Acquired	Male	263	2.44	0.918	1.166	0.244
		Female	224	2.33	1.020		
	Required	Male	263	3.03	1.007	-5.244	0.363
		Female	224	3.45	0.707		
Assessment	Acquired	Male	263	1.38	1.000	-2.472	0.014
		Female	224	1.59	0.799		
	Required	Male	263	2.91	0.922	-2.182	0.030

		Female	224	3.36	0.738		
ICT Literacy	Acquired	Male	263	3.35	0.996	-1.501	0.134
		Female	224	3.48	0.862		
	Required	Male	263	3.10	0.952	-1.779	0.076
		Female	224	3.24	0.716		
Time Management	Acquired	Male	263	1.23	1.107	0.085	0.932
		Female	224	1.22	1.154		
	Required	Male	263	2.76	1.104	1.515	0.130
		Female	224	2.60	1.249		
Communication	Acquired	Male	263	1.89	1.113	3.350	0.001
		Female	224	1.13	1.253		
	Required	Male	263	2.87	1.103	-2.955	0.003
		Female	224	3.12	0.627		
Leadership	Acquired	Male	263	2.40	1.013	3.123	0.082
		Female	224	2.08	1.239		
	Required	Male	263	2.76	0.891	-0.297	0.767
		Female	224	2.79	0.988		
Critical Thinking	Acquired	Male	263	1.59	1.310	0.633	0.527
		Female	224	1.52	1.156		
	Required	Male	263	2.75	0.967	-0.166	0.868
		Female	224	2.77	1.020		
Social Skills	Acquired	Male	263	1.17	1.239	-0.532	0.595
		Female	224	1.23	1.112		
	Required	Male	263	2.85	1.032	-3.303	0.201
		Female	224	3.14	0.854		
Interpersonal	Acquired	Male	263	1.10	1.239	-0.532	0.595
		Female	224	1.26	1.112		
	Required	Male	263	2.72	1.032	-3.303	0.071
		Female	224	2.84	0.854		

Data presented in above table 2, indicated that mean values (i.e. mean<2) of male and female teachers in respect of acquired level of knowledge of skills i.e. decision-making (M_{male}=0.78 & M_{female}=0.70), creative thinking (M_{male}=0.82 & M_{female}=0.90), scientific literacy (M_{male}=1.00 & M_{female}=0.83), problem solving (M_{male}=0.87 & M_{female}=0.89), assessment (M_{male}=1.38 & M_{female}=1.59), time management (M_{male}=1.23 & M_{female}=1.22), communication (M_{male}=1.89 & M_{female}=1.13), critical thinking (M_{male}=1.59 & M_{female}=1.52),social (M_{male}=1.17 & M_{female}=1.23), and interpersonal (M_{male}=2.10 & M_{female}=2.26), implied that both male and female in-service teachers perceived that they acquired low level of knowledge (mean<2) of these set of skills as compared to required level of knowledge of skills (mean>2). Furthermore, no significant gender difference (p<.05) among these skills indicated that both males and females believed that they had acquired low knowledge than required.

Convincing to adaptability, collaboration, demonstration, management, need analysis, ICT literacy, and leadership skills, the findings exposed that there was an insignificant gender difference (p<.05) for acquired and required levels of knowledge of skills. Moreover, higher mean scores (i.e., greater than 2) showed that male and female teachers had a similar perception of acquired level of knowledge of adaptability, collaboration, demonstration, management, need analysis, ICT literacy, time management, and leadership skills

Therefore, it can be concluded that teacher education institutions had imparted knowledge of these sets of skills and met the workplace requirement. However, these institutions did not fulfill the expectations of workplace requirements (required level) such as imparting the knowledge of decision-making skills, creative thinking skills, scientific literacy skills, problem-solving skills, assessment skills, time management skills, communication skills, critical thinking skill, social skill, and interpersonal skill.

Analysis of Acquired and Required level of Proficiency in 21st Century Skills

The frequencies of the acquired and required level of proficiency in skills under study were compared between in-service male and female teachers.

Table 3: Acquired and Required level of Proficiency of 21st Century Skills

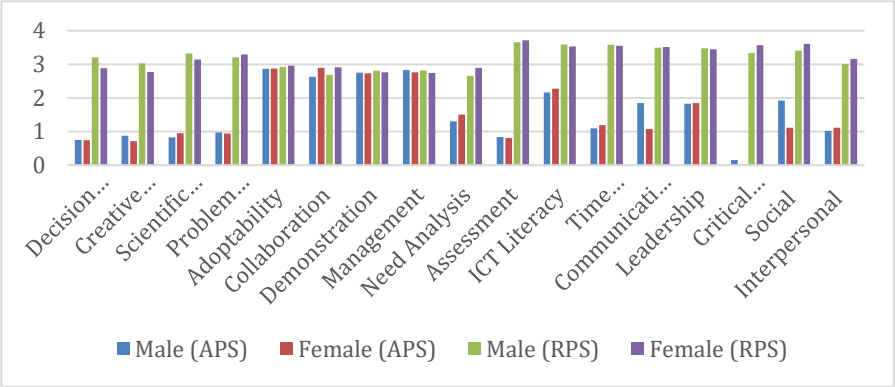
21st Century Skills	Level	Gender	Proficiency				
			N	M	SD	t	P
Decision Making	Acquired	Male	263	0.75	1.069	0.126	0.900
		Female	224	0.74	1.103		
	Required	Male	263	3.21	1.175	3.112	0.002
		Female	224	2.88	1.118		
Creative Thinking	Acquired	Male	263	0.88	1.058	1.764	0.078
		Female	224	0.71	1.092		
	Required	Male	263	3.03	1.082	2.500	0.013
		Female	224	2.77	1.202		
Scientific Literacy	Acquired	Male	263	0.83	0.857	-1.429	0.154
		Female	224	0.95	0.967		
	Required	Male	263	3.32	1.029	1.822	0.069
		Female	224	3.14	1.155		
Problem Solving	Acquired	Male	263	0.97	1.022	0.364	0.716
		Female	224	0.94	0.901		
	Required	Male	263	3.21	1.142	-0.800	0.424
		Female	224	3.29	0.937		
Adaptability	Acquired	Male	263	2.86	0.808	-0.060	0.968
		Female	224	2.87	0.836		
	Required	Male	263	2.92	0.915	-0.484	0.629

		Female	224	2.96	0.885		
Collaboration	Acquired	Male	263	2.63	1.135	-2.740	0.006
		Female	224	2.89	0.978		
	Required	Male	263	2.68	1.209	-2.203	0.028
		Female	224	2.91	1.029		
Demonstration	Acquired	Male	263	2.75	0.968	0.182	0.856
		Female	224	2.73	1.084		
	Required	Male	263	2.81	1.035	0.474	0.636
		Female	224	2.76	1.129		
Management	Acquired	Male	263	2.83	0.977	0.642	0.521
		Female	224	2.76	1.145		
	Required	Male	263	2.82	1.050	0.843	0.400
		Female	224	2.74	1.167		
Need Analysis	Acquired	Male	263	1.30	1.096	-2.035	0.042
		Female	224	1.50	1.050		
	Required	Male	263	2.66	0.939	-2.494	0.013
		Female	224	2.89	1.068		
Assessment	Acquired	Male	263	0.84	0.986	0.407	0.684
		Female	224	0.81	0.963		
	Required	Male	263	3.65	0.891	-0.728	0.467
		Female	224	3.71	0.890		
ICT Literacy	Acquired	Male	263	2.16	1.477	-0.811	0.418
		Female	224	2.27	1.455		
	Required	Male	263	3.59	0.855	0.692	0.489
		Female	224	3.53	0.997		
Time Management	Acquired	Male	263	1.09	0.998	-1.050	0.294
		Female	224	1.19	1.105		
	Required	Male	263	3.58	0.985	0.270	0.788
		Female	224	3.55	1.005		
Communication	Acquired	Male	263	1.85	1.030	-2.339	0.020
		Female	224	1.08	1.120		
	Required	Male	263	3.49	0.819	-0.269	0.788
		Female	224	3.51	1.002		
Leadership	Acquired	Male	263	1.83	1.157	-0.176	0.860
		Female	224	1.85	1.346		
	Required	Male	263	3.47	0.790	0.320	0.749
		Female	224	3.45	0.936		
Critical Thinking	Acquired	Male	263	0.15	1.223	1.153	0.250
		Female	224	0.02	1.346		
	Required	Male	263	3.33	1.063	-2.758	0.006
		Female	224	3.57	0.860		
Social Skills	Acquired	Male	263	1.92	1.165	-1.644	0.101
		Female	224	1.11	1.405		
	Required	Male	263	3.41	1.080	-2.202	0.028
		Female	224	3.61	0.851		
Interpersonal	Acquired	Male	263	1.02	1.165	-0.211	0.101
		Female	224	1.11	1.405		
	Required	Male	263	3.01	1.080	-1.342	0.028
		Female	224	3.16	0.851		

Referred to data presented in above table 3, the mean scores of male and female teachers on acquired level of proficiency of skills like decision-making (M_{male}=0.75 & M_{female}=0.74), creative thinking (M_{male}=0.88 & M_{female}=0.71), scientific literacy (M_{male}=0.83 & M_{female}=0.95), problem solving (M_{male}=0.97 & M_{female}=0.94), assessment (M_{male}=0.84 & M_{female}=0.81), communication (M_{male}=0.97 & M_{female}=0.94), and critical thinking (M_{male}=0.15 & M_{female}=0.02) depicted that teachers acquired basic level of proficiency (mean<2) while required level of proficiency was mean>2. Additionally, no gender difference for both cases i.e. acquired and required level of proficiency (p<.05). Thus, male and female teachers were appeared to have acquired an understanding of the basic technique associated with the use of these skills i.e., decision-making, creative thinking, scientific literacy, problem-solving, assessment, communication, and critical thinking. However, the demand of the workplace (required level) was reported advanced level of proficiency (mean>3).

In relation to the skills such as need analysis (M_{male}=1.30 & M_{female}=1.50), time management (M_{male}=1.09 & M_{female}=1.19), leadership (M_{male}=1.83 & M_{female}=1.85), social (M_{male}=1.92 & M_{female}=1.11) and interpersonal (M_{male}=1.02 & M_{female}=1.11), both male and female teachers seemed acquired low proficiency level, whereas the demand of workplace (required level) was found to be greater than moderate level (mean>2). A non-significant gender difference was also found between male and female teachers in this set of 21st-century skills.

Findings also uncovered the reality that mean scores of male and female teachers had acquired greater than novice level of proficiency (>1M>3) in adaptability skill, collaboration skill, demonstration skill, management skill, and ICT literacy skill.



4. CONCLUSION AND DISCUSSION

The gender difference was found between the acquired and required level of knowledge and proficiency of 21st-century skills. Regardless of gender, a vast majority of teachers showed their dissatisfaction with the teacher education institutions imparting adequate knowledge as well as proficiency in 21st century skills such as decision-making, creative thinking, scientific literacy, problem-solving, assessment, time management, communication, leadership, critical thinking, social, and interpersonal. A significant majority of male and female teachers had put forth their opinion that teacher educational institutions had not fully met the expectation of digital era requirements to deliver the knowledge and proficiency of skills..

It was seen that the required skills gap is substantially high as compared to acquired, and there was a statistically significant difference at the .05% level. The difference indicates that there is a gap between acquired and required levels of 21st-century skills as perceived by in-service teachers. There are ten out of seventeen skills teachers are not having sufficient knowledge and proficiency and gave value to them. It was deduced that these sets of skills are required,

however, pre-service teacher education institutions do not develop them in prospective teachers. The education system of Pakistan is not well ranked among many of developing countries. One of the reasons is that the system is based on cramming (Fatima, 2018). In all stages of education primary, secondary, higher education even engineering and medical education, the system does not stress creativity, innovation, or conceptual learning but provides a way of cramming in order to pass the examination. Due to this, we are lagging in the race of developing innovations, inventions, and making discoveries.

The problem is not limited to general education but is prevalent in teacher education. Teacher educators feed prospective teachers by providing certain notes, assignments are full of plagiarism and there is a crisis of research work (nation-2018). Barring a few, all teacher education institutions are following the banking concept of education. The teacher education system is not focusing on developing and improving higher order thinking skills i.e., creativity, imagination, innovation, and critical thinking among prospective teachers. Therefore, prospective teachers have not had sufficient knowledge and proficiency in 21st-century skills, if get teaching jobs they focus on the cramming approach. So, the development of 21st-century skills among the young generation is looking vague.

In the era of ICT, the time of copying is over, this is a digital age which means knowledge and proficiency in higher order thinking skills, information skills, media, and technology skills, and life and career skills. The finding of this study crying that teachers in educational institutions in Pakistan, teachers are ill-prepared for life. Several studies found that graduate degree programs felt that their class work had not adequately prepared them for real-world practice (Clapton & Cree, 2004). Thompson (2000), for example, makes the point that "there is an unacceptable gap between theory and practice, a disjuncture between what is taught or learned and what is practiced. National Education Commission (2006) reported that due to traditional teaching methods and outdated curriculum of Initial teacher training institutions, teacher educators failed to impart 21st-century professional skills. Henceforth, a number of key competencies have been incorporated in the National Professional Standards for Teachers in 2009, and the sample behaviors identified in the outline of knowledge, disposition, and skills. Higher Education Commission, under the guidelines of National Professional Standards for Teachers, developed and provides opportunities across the teacher education curriculum in terms of the skills that are commonly linked to 21st-century skills. In B.Ed.(Honor)-Elementary/B.Ed-1.5 programs, for instance, Critical Thinking And Reflective Practices, Citizenship Education And Community Engagement, Communication Skills (Technical Writing & Presentation Skills), General Science and Art, Crafts and Calligraphy courses, prospective teachers are given opportunities to attain knowledge and skills. However, the curriculum renewal process makes it possible to focus increased attention on the development of digital-age century skills that will be increasingly needed in our changing society, integration of information & communication technology, globalization, the China-Pakistan Economic Corridor, and the classrooms of tomorrow.

There is precursory evidence that most of the in-service teachers irrespective of gender perceived that their actual level of knowledge and proficiency in a set of skills (i.e. Digital-era Century Skills) being basic level than the corresponding required level. In-service teachers have a point of view that teacher education institutions are not sufficiently equipped with "Digital-era Century Skills" and that they have yet to acquire knowledge and proficiency of skills commonly needed at the workplace. Due to skill lacking among teachers, we are lagging behind in the race of developing innovations, inventions, and making discoveries. The lacking is well figured out through the findings of this project in terms of the skills gap between

acquired and required levels of knowledge and proficiency. The gap indicated that no worry in-service teachers had acquired a common understanding of the basic or introductory type of knowledge and proficiency of skills but were unable to apply it across multiple situations. It means while teacher educators in Pakistan are promoting digital-era century skills in their teaching, activities, and assignments, which may be due to the rapid transformation and adaptation of 21st-century skills and the introduction of National Professional Standards for Teachers in Pakistan, however, they would expect to do more in equipping the prospective students with required skills. The finding is much congruent to the research reports of Reigeluth et al. (2009) and Voogt et al. (2013), in which they exposed some reasons, for example, inadequate implementation of teaching strategies in line with imparting skills, a non-conducive learning environment. It may also be assumed that teacher educators themselves do have not the ability to perform the actions associated with digital-age century skills without assistance, they are unable to explain the process or skills in order to foster a greater understanding among prospective teachers, colleagues, and external constituents. Law et al. (2002) further supported this assumption, by adding if teachers did not perceive 21st-century skills as important then they would not able to arrange, prepare and design pedagogical activities to support students' development of skills. The skills gap between acquired and required in terms of knowledge and proficiency is likely to suggest a need for sustained change effort in improving the learning environment and pedagogical practices (Fraser, 2012).

No doubt, it is true Pakistan has no dearth of talent but needs to sharpen and tremendous responsibility is placed on teacher education institutions. The gap between acquired and required implies that the current content of teacher education programs has not been effective in developing digital-age century skills whereas the existence of learning gaps between the actual and required skills shows that the subject contents do not fit the needs of the workplace. Voogt et al. (2013) added that the skills gap between theory & practice is due to the lack of integration of skills into curricula, and assessment.

Therefore, teacher education for the success in digital era needs to bridge the skills gap between acquired and required. The gap can be bridged through a curriculum integration approach and embedding in existing teacher education curriculum the instruction of digital-era century skills content and themes which are based on the finding of this project i.e. higher order thinking skills (decision-making, creative thinking, scientific literacy, problem-solving, critical thinking); life and career skills (assessment, time management, communication, social, and interpersonal skill). Overall, the result shows that the curriculum is incapable of achieving desired knowledge and proficiency in skills because of the overemphasis on content delivery only. Incorporating the above skill framework into the curriculum and instruction for every prospective teacher can help to ensure to have equitable opportunities to develop the skills and knowledge needed to succeed, now and in the workplace.

Findings of this project may expose that for the success of teacher education in the current digital age; the Higher Education Commission should review the prevailing curriculum and need to make those subjects in preference that can make prospective teachers well equipped with digital-age century skills. Another important thing is that higher-order thinking skills are not limited to mere sciences and technology content. It is boundless in poetry, painting, sculpture, and architecture. To do something new and different has proven a deciding behavior in the rise and fall of nations but when someone can’t see beyond the dresses and beverages of “Lunda” this deciding behavior is nothing but a dream and mirage, therefore, teacher educators may also need to revisit their teaching. They may prepare their course files to consider the development of digital-age century skills.

This would be the way forward in better understanding the digital-age century skills that will contribute to the implementation of teacher professional development programs to inculcate the required skills in teachers.

Acknowledgement
This article is part of Post doctorate research project. Through this researcher would like to thank and acknowledge the role and support of Professor Sung-Sang Yoo, Seoul National University Korea. The researcher is also thankful for the grant and financial support of the Punjab Higher Education Commission (PHEC), Lahore, Pakistan. The fellowship carried generous financial support. The report was documented for a Post doctorate research project under the supervision of Professor Sung-Sang Yoo, Department of Education, College of Education & Director, Global Education Cooperation, Graduate School, Seoul National University Korea.

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