

MS Research Thesis

**LEARNING CHALLENGES IN ACHIEVING 21ST CENTURY
SKILLS OF PROSPECTIVE TEACHERS**



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A thesis submitted in partial fulfillment of the requirement for the degree of
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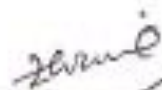
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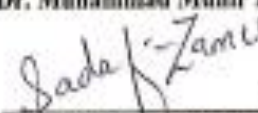
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AUTHOR'S DECLARATION

It is hereby declared that author of the study has completed the entire requirement for submitting this research work in partial fulfillment for the degree of MS Education. This thesis is in its present form is the original work of the author except those which are acknowledged in the text. The material included in the thesis has not been submitted wholly or partially for award of any other academic certification than for which it is being presented.



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SUPERVISOR'S CERTIFICATE

The thesis titled "Learning Challenges in Achieving 21st Century Skills of Prospective Teachers" submitted by Ms. Mehwish Bashir Regd. No. 8-FOE/MSEDU/S23 is partial fulfillment of MS degree in Education, has been completed under my guidance and supervision. I am satisfied with the quality of student research work and allow her to submit this for further process as per IUI rules and regulations.



Dr. Zarina Akhtar

Dedications

I dedicated my work to the Almighty Allah, thank you for the guidance, strength, power of mind and skills.

I dedicated my work to my Parents, Siblings, Supervisor and the Friends who motivate me to complete my work.

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ABSTRACT

21st century skills are the basic requirement for the Prospective Teachers to meet the requirements of the academic process. Prospective Teachers are struggling with different challenges in their academic process which are hindering in achieving 21st century skills. There are four basic 21st century skills i.e. learning skills, literacy skills, life skills and transferring skills which are associated with the prospective teachers, they have to acquire these skills. Prospective teachers' facing many challenges to acquire these skills. These challenges need to be overcome to meet the 21st century skills. This study was aimed 1) to identify the level of 21st century skills achieved by prospective teachers 2) to compare the 21st century skills among the prospective teachers at university level 3) to find out learning challenges hindering in achieving 21st century skills of prospective teachers. The study holds significance as it is beneficial for prospective teachers to enhance their knowledge and skill acquisition to meet the requirements of process of teaching and learning as it gives the comprehensive view about learning challenges which are hindering in achieving 21st century skills for prospective teachers which are the need of the teaching and learning process. The study was delimited to the Prospective Teachers enrolled in BS/B.Ed program at International Islamic University, Islamabad and National University of Modern Languages (NUML), Islamabad. The study was also delimited to the department of Teacher Education from IIUI and Department of Education from NUML. Population size was 550. Mixed method approach was used to study. Convergent parallel design was used to study because the researcher collects quantitative and qualitative data simultaneously. The researcher has been taken primary sources of data. The research study was descriptive. Random Sampling Technique was used to collect the sample. Sample was 226 Prospective Teachers from 6th, 7th and 8th semester studying in BS/B.Ed program. Data were collected from the prospective teachers studying in BS/B.Ed program during session Fall-2024 from specified universities. Self- developed questionnaire with five points rating scale was used as instrument to identify the level of 21st century skills achieved by prospective teachers. Open-ended questionnaire was used as instrument to identify learning challenges in achieving 21st century skills of prospective teachers. To check the validity of the instrument the researcher approached to the Professionals of faculty of Education from IIUI. Pilot test has been taken from the both universities i.e. IIUI and NUML. The sample size for the pilot test was 40 prospective teachers from both universities. Consent of the participants was taken that all the data will remain confidential and only use for research purpose. Cronbach Alpha was used to check the reliability of the scale. Data were collected through personal visit of the researcher to the specified universities. Data were analyzed through mean score, percentage, equal interval

and thematic analysis. Equal interval was performed for labelling low, medium and high level of 21st century skills. The t- test was applied for the comparison of level regarding 21st century skills achieved by prospective teachers of selected universities. Frequency, percentage and thematic analysis was applied for the qualitative data. Findings of the research shows that the most of the prospective teachers having medium level of learning skills. Individually, prospective teachers have high level of literacy skills. For the life skills, prospective teachers have medium level. For the transferring skills, prospective teachers have high level. There is no significant difference found between the learning skills, literacy skills and transferring skills of prospective teachers of both universities but there is a significant difference found in the life skills of prospective teachers of IIUI and NUML. Most of the prospective teachers have the challenge of low confidence in learning skills. The challenge in achieving literacy skills is the over burden because of doing other tasks. Similarly, in life skills, most of the prospective teachers have time management issue. Most of the prospective teachers have difficulty in explaining which are hindering in achieving transferring skills. For the prospective teachers, it is recommended to institutions that they may organize skill development workshop to targeted training on confidence-building, public speaking, vocabulary enhancement and idea generation and for time management issue, institutions may provide seminars and tools to help students plan, prioritize, and balance tasks effectively. Prospective teachers faced the challenge of burden of doing other tasks so, it is recommended to institutions that they may reduce non-essential workload to minimize excessive academic or administrative tasks that hinder literacy skill development. Prospective teachers facing the challenge of less confidence, it is recommended to the teacher educators that they may pair the less confident students with peers who excel in communication and leadership and they may incorporate field projects, school visits, and real-world teaching experiences to strengthen life and transferring skills. It is recommended that the study can be done in pure qualitative method to study about challenges. It will give the in-depth view of the study. It is recommended to do comparison between public and private institutions because this study having public institutions and could not find significant difference. It maybe because of same methods of teaching in public universities.

Keywords: *Learning Challenges, 21st Century Skills, Prospective Teachers*

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LIST OF ABBREVIATIONS

ATC21S	Assessment and Teaching of 21 st Century Skill Group
ICT	Information Communication Technology
IIUI	International Islamic University, Islamabad
NUML	National University of Modern Languages
OECD	Organization for Economic Co-operation and development
P21	Partnership for 21 st Century Skills
PBL	Project Based Learning
P.T	Prospective Teachers
UNESCO	United Nations Educational Scientific and Cultural Organizations
US	United States
WHO	World Health Organization
21st C.S	21 st Century Skills

CHAPTER 1

INTRODUCTION

21st century skills are referred as the basic requirement for the prospective teachers to meet the requirements of the academic process. Prospective Teachers are struggling with different challenges during their academic process which are hindering in achieving 21st century skills. There are four basic 21st century skills i.e. learning skills, literacy skills, life skills and transferring skills which are associated with the prospective teachers, they have to acquire these skills. Prospective teachers' facing many challenges to acquire these skills such as insufficient knowledge, inadequate facilities, issues in time management and burden of doing other tasks during learning. These challenges need to be overcome to meet the 21st century skills. In this regard the US based organization develop 4Cs of 21st century skills. which is framework for the 21st century skills that includes (Ability of thinking critically, collaborative learning, skills of communication and skills of creativity and skills of innovation). The 4Cs are mainly develop to meet with the needs and demands of the 21st century learning (Joynes et al., 2019).

There is another framework which is known as P21 framework, introduced in 2009. It gives the basic outcomes for 21st century education with four basic levels (December, 2009). Previously, the major challenges in achieving 21st century skills were lack of awareness, time constraints, inadequate knowledge, less facilities and burden of doing other tasks (Rusdin & Ali, 2018). According to the need of 21st century, every person must be able to learn fast and access knowledge and technology. So, the teachers should be master of 21st century skills for the better and progressive teaching and learning (Alhothali, 2021). ICT is also one of the major necessity for prospective teachers. They must know the innovations and advancements in technology and proper use of technology to meet the requirements of 21st century. So, the 21st century skills are the basic need in teaching and learning process. Teachers readiness is a main factor in achieving 21st century skills. some teachers are not ready to change their old method of teaching. So, there is a need to change the old mindset of teachers to achieve 21st century skills (Tyan, 2020).

1.1 Background of the Study

Previous researches found various studies on 21st century skills. In P21 Frame work created for 21st century skills, there are three basic skills are defined, which are further divided into different skills. Prospective teachers having the positive views about 21st century skills but

there is still need of improvement (Rusdin & Ali, 2018). Institutions are also struggling to achieve 21st century skills but there is still need to achieve 21st century skills to ensure quality education in their institutes. They may face different challenges in achieving 21st century skills because of different factors like diverse background of students or institutional diversity. These learning challenges hindering in achieving 21st century skills.

1.2 Statement of the Problem

Prospective teachers need to acquire the 21st century skills to fulfill the educational needs of their student's in future. So, 21st century skills are basic requirement for the prospective teachers. The institutions are providing the resources, environments and opportunities to prospective teachers for acquiring the 21st century skills but the studies and situations at schools showed the teachers are lacking in implementing 21st century skills. The reason may be that they are not aware of it. The lack of awareness may be because of the institutional environment or practices adopted during teaching and learning process. Prospective teachers from diverse background face different challenges during their academic process which are hindering in achieving 21st century skills. These challenges need to be identified or addressed.

1.3 Objectives of the Study

The research objectives of the research study were to:

1. Identify the level of 21st century skills achieved by prospective teachers.
2. Compare the level of 21st century skills among the prospective teachers at university level.
3. Find out learning challenges hindering in achieving 21st century skills of prospective teachers.

1.4 Research Questions

The research questions of the research study were:

1. What is the level of 21st century skills achieved by prospective teachers?
2. What is the difference of the level of 21st century skills among the prospective teachers of both universities?
3. What are the learning challenges hindering in achieving 21st century skills of prospective teachers?

1.5 Hypothesis

H₀: There is no significant difference between 21st century skills of prospective teachers from IIUI and NUML.

1.6 Significance of the Study

The study holds significance as it suggests viable options and suggestions for the learning challenges in achieving 21st century skills. It is beneficial for prospective teachers to enhance their knowledge and skill acquisition to meet the requirements of teaching and learning process as it gives the comprehensive view about learning challenges which are hindering in achieving 21st century skills for prospective teachers which are the need of the teaching and learning process. It is also beneficial for the in-service teachers so that they can make proper strategy and plan to train the prospective teachers according to the needs and demand of teaching and learning process.

1.7 Delimitations of the Study

The study was delimited to the:

1. Prospective Teachers from BS/B.Ed program
2. Department of Education from National University of Modern Languages (NUML), Islamabad.
3. Department of Teacher Education from International Islamic University (IIUI), Islamabad.
4. Semester 6th, 7th and 8th.
5. 21st century skills: Learning skills, literacy skills, life skills and transferring skills.

21st Century Skills

Learning skills	Literacy skills	Life skills	Transferring skills
<ul style="list-style-type: none">• Critical thinking and problem solving• Communication and collaboration• Creativity and innovation• Information and media literacy• Flexibility and adaptability• Initiative and self-direction• Productivity and accountability (Joynes et.al. ,2019)	<ul style="list-style-type: none">• Information and digital literacy• Media literacy• Technology literacy• Problem solving• Reading and writing (Joynes et.al. ,2019)	<ul style="list-style-type: none">• Self-awareness and self-management• Decision making and problem solving• Interpersonal and social skills• Empathy and team work• Stress management• Social responsibility• time management and organization• flexibility• productivity (Joynes et.al. ,2019)	<ul style="list-style-type: none">• Planning and organization• Leadership• Intrapersonal and interpersonal skills• Communication• Attention to deal (Joynes et.al. ,2019)

1.8 Operational Definitions

1.8.1 Learning Challenges

Learning challenges are those which are hindering in person's ability of learning and skill acquisition. It may include insufficient knowledge, lack of facilities, lack of resources and burden of doing other tasks.

1.8.2 21st Century Skills

21st century skills refer to the skills that are necessary to cope up with the emerging world of innovation and skills.

1.8.3 Learning Skills

Learning skills are referred to the cognitive skills. effective learning skills. It includes critical thinking, communication, collaboration and creativity.

1.8.4 Literacy Skills

Literacy skills are related to the skills of thinking critically and skills about digital literacy. It includes information literacy, technology and media literacy.

1.8.5 Life Skills

Life skills are the abilities essential for the successful life. It includes stress management, flexibility, productivity, social responsibility, interpersonal and social skills.

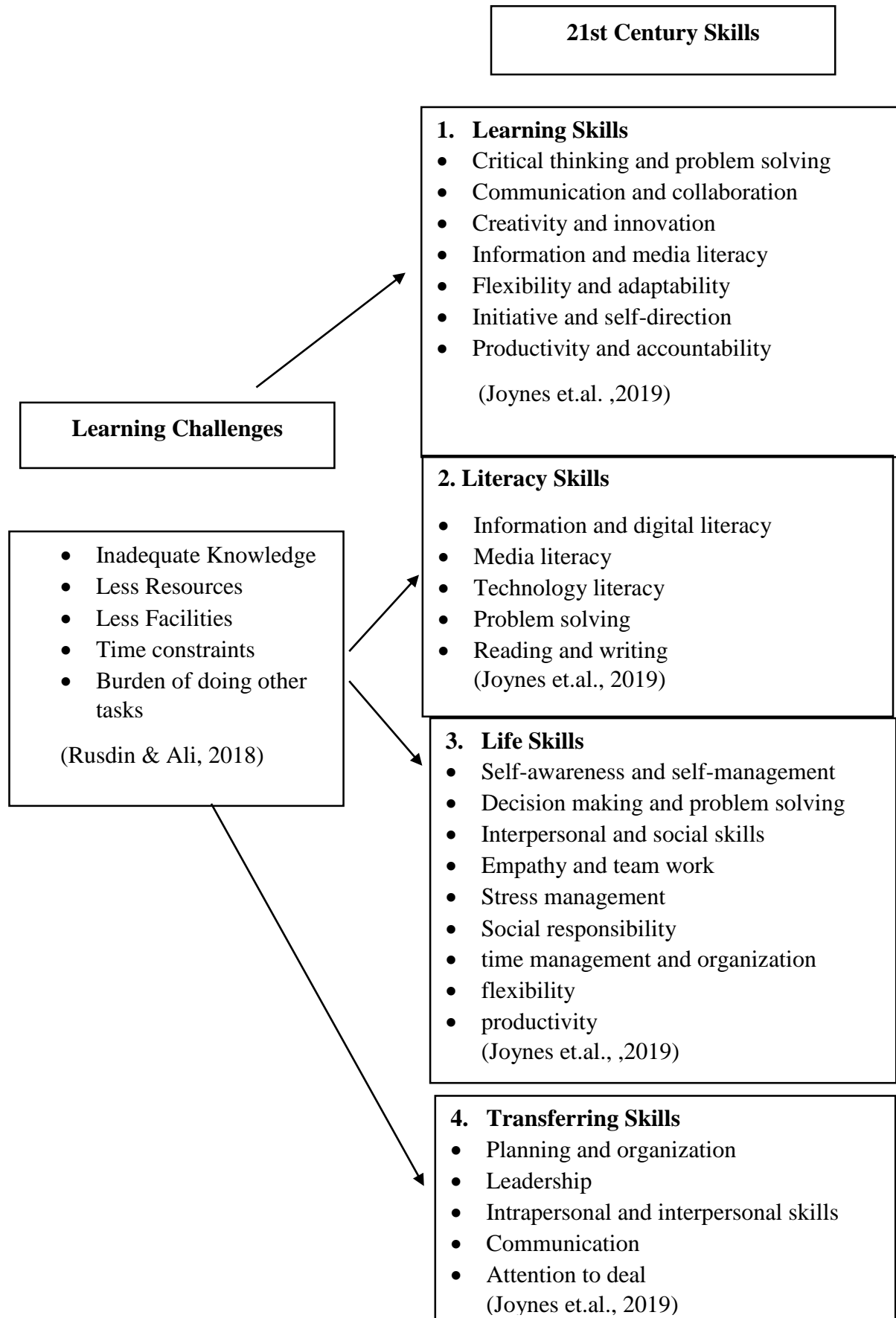
1.8.6 Transferring Skills

Transferring skills are referred to the ability to application of knowledge and skills in the different context or situations. It includes planning and organization, leadership, intrapersonal and interpersonal skills.

1.8.7 Prospective Teachers

Prospective teachers are those who are struggling to acquire knowledge and skills to become professional in the field of education.

1.9 Conceptual Framework



In the conceptual framework, learning challenges identified by (Rusdin & Ali,2018) which are inadequate knowledge, less resources, less facilities, time constraints and burden of doing other tasks which are hindering in achieving 21st century skills. the basic 21st C.S included learning skills, literacy skills, life skills and transferring skills which are further divided into subskills mentioned above.

CHAPTER 2

LITERATURE REVIEW

Prior there are so much researches can be seen about 21st century skills. Learning is the basic component in the life of every individual which could not end till the whole life. The basic component in the process of learning is teacher and the learner. A teacher is a role model for their pupils. So, it is necessary to have a skilled person as a whole. There are so many ethical or work skills that should be needed in teachers' personality and attitude. 21st C.S are mostly associated with the teachers that they have to achieve these skills for the good learning (Methew et al., 2019).

At higher education, there is a lot of expectations from teachers as well as students. 21st century skills now become the most integral part at higher education. (Methew et al., 2019). Digital learning is also becoming necessary in learning at higher education and challenging into the present era of the world. 21st C.S are needed for the pre-service teachers and in-service teachers as well. It is obvious that these skills should be integrated to prospective teachers so that they can serve better in future (Methew et al., 2019).

2.1 21st Century Skills

21st C.S are the overall concept of knowledge and skills which are necessary for the betterment of the society through knowledge and skill acquisition. (Voogt & Roblin, 2010), as cited in (Joynes et.al., 2019). 21st C.S are mainly linked with the four skills i.e. learning skills, literacy skills, life skills and transferring skills. learning skills included thinking critically and solving of problems, communication skills and collaboration skills while working, initiative and self-direction, skills of productivity and accountability. Literacy skills included information and digital literacy, media and technology literacy. Life skills included self-awareness and self-management, decision making and problem solving, interpersonal and social skills, empathy and team work, stress management, social responsibility, time management and organization, flexibility and productivity (Voogt & Roblin, 2010), as cited in (Joynes et.al., 2019).

In the same way transferring skills included planning and organization, leadership skills, intrapersonal and interpersonal skills, communication skills and attention to deal with the people. These all skills are the part of 21st century skills which are needed to integrate into curriculum of the prospective teacher, trainings of pre-service and in-service teachers. Some initiatives like P21 frame work, 4Cs and different types of approaches were defined from 2009 till now but there is still need of 21st C.S into our educational institution and training of

prospective teachers as well. Details of some researches and work that was done previously for the improvement of 21st century skills are discussed below (Voogt & Roblin, 2010), as cited in (Joynes et al., 2019).

2.1.1 Categories of 21st Century Skills

In the year 2019, a research has been done by the (Joynes et al., 2019), there are some categories has been identified for the 21st C.S. These categories are basics of 21st C.S The details of these categories of 21st C.S are as follow:

2.1.2 Personal Skills

Personal skills are the individual's basic skills which are necessary to make individual a good person which is able to live in the society. Personal skills are also those skills which an individual adopt according to the different situations in his life and to cope up with the difficulties in their life effectively. It includes self-development skills, creativity, problem solving skills and critical thinking skills. It also includes: adaptability, agility, managing complexity and taking risks as the personal's own in the life situations (Joynes et al., 2019). Personal skills are the basic part of 21st C.S as it deals with the individual's personality and personal development which are effectively supports teaching and learning process (Joynes et al., 2019).

2.1.3 Social Skills

Social skills are mainly deals with those skills which can help an individual to live in a society. It includes communication skills which helps to communicate in a better way like verbal or non-verbal communication skills, collaboration with others, awareness about culture and knowing of different cultures and respect of other cultures and global awareness about new innovations and leadership skills (Joynes et al., 2019).

2.1.3.1 Knowledge and information

Knowledge and information basically deals about the knowledge by itself. It includes information management like information literacy, application of knowledge to the new situations etc. Through these skills a layman can able to gain different types of knowledge and skills. He/she can gather information and apply this information to the new problem or situation to solve the specific problem in effective manners. So that they can get rid from different problems in their lives. (Joynes et al., 2019).

2.1.3.2 Digital Literacy

Digital literacy is about the literacy of digital media to live with the world of innovations. According to Chalkiadaki;s examination, computerized education is known as

digital literacy like different types of blogs, wiki, podcasts, and working through computer or other digital devices for the academic or non-academic purpose (investigation, study, assessment, and creation). Digital literacy is the basic need of present era. A person should know about the different type of applications innovations in technology and advancement in the technology. A person should know the proper use of digital media and to pick the relevant content and material for their improvement in skill acquisition (Chalkiadaki, 2018).

2.2 Critical Skills

Critical skills are five in numbers which are mainly considered to increase the chance of success, which includes both specific skills and desirable behaviors. It means that these skills are necessary to every person to become socialize and to work in workplace. These critical skills are somehow related to the 21st C.S. Through these critical skills an individual can achieve the capacity for respectful behavior, people can resolute their conflicts and they also can choose appropriate behavior in a specific situation. Critical skills include communication skills, higher order thinking skills, ability of self-control and the self-concept. These skills are discussed as follow (Lippman et al., 2014).

2.2.1 Communication Skills

These skills are associated with the communication. It may be verbal or non-verbal. It may include everyday communication or in official or institutional level. It includes soft skills of communication which includes verbal, non-verbal and writing properly. Verbal communication is talking with someone directly or face to face communication. Non-verbal communication includes talk with gestures like gesture of high five, good luck etc. Prospective teachers use both ways of communication in their daily life. So, they need to be master in their communication. 21st C.S emphasize on communication skills that's why it is necessary for the prospective teachers to be skilled (Joynes et al., 2019).

2.2.2 Higher Order Skills of Thinking

A teacher should be a person who can take the immediate decisions because teacher may need to handle some situation at any time. So, they need to have these skills in their personality. They need to have thinking skills at higher level to solve the problems immediately (Joynes et.al.,2019).

2.2.3 Self-Control

An intrapersonal capacity which grants a victory decision-making, struggle choice and coherent communication. To control the youngest one to control their-selves in any situation. A prospective teacher may need to handle a situation or conflicts between students or maybe in

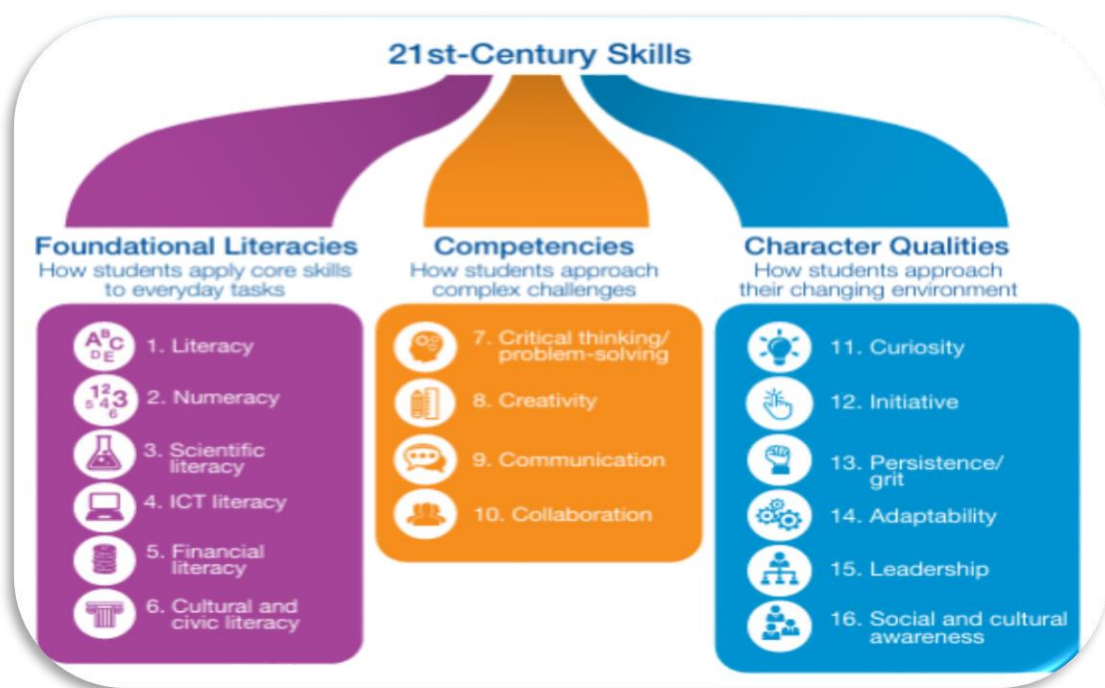
their colleagues. So, they should be trained or master in all these skills. In fact, self-control is not just related to the prospective teachers they are also related to a layman to become an able person to live in a society (Joynes et.al., 2019).

2.2.4 Self-Concept

According to Joynes et al., self-concept is related to self-abilities which motivate a person to do any task or work. It includes self-confidence, self-efficacy, self-attention, self-esteem, and encounter of prosperity. A prospective teacher is a future teacher he/she should know what they are or what they should be. So, self-concept is the best thing for the prospective teachers to know what they are and they can be improvised in a specific skill. Lack of confidence is the biggest problem of today's student's if the prospective teachers are trained or skilled, they are master in 21st century skill, then they can teach properly (Joynes et al., 2019).

Figure 2.2

21st century skills



World Economic Forum, New Vision for Education (2015) (Copied 30-12-2024).

The figure 2.2. shows the 21st century skills and which skills are needed for the students to improve their learning and way of life that how students apply core skills into everyday life. Then, how students approach to the complex challenges after that how students approach their

changing environment. The above mentioned figure through the light on the points on the answers of these questions which can be a helping hand for the prospective teachers.

2.3 '4Cs' of 21st Century Skills

The US based organization develop P21 framework for the 21st century. This framework gives a view about the '4Cs' (Basic considering, Communication, Collaboration and Imagination), and other special qualities that it suggests that it should be developed within the context of coaching center situation ranges. The '4Cs' adaptation is essentially predicated on the claim that the demands of the twenty-first century will necessitate a massive set of competencies, with a focus on an individual's abilities in center circumstance competencies, dialect proficiency, and mastery of the financial and political strengths that influence social orders. Following are the '4Cs' which are based on Scott's analysis (Joynes et.al., 2019).

2.3.1 Communication Skills

Communication skills are the not only necessity for the academic purpose but it also a need for the life. Communication skills are the ability to express personal thoughts of the person to the others. Through good communication a person can impress the others. It is also a best way to motivate others through the good skill of communication. A person can positively convey his/her message through the proper use of speech. It maybe verbal or in written form, the way of communication is meaningful. Communication competences are also embedded in data, media and ICT competences. Despite in the administrative core and public life, it's said that trade competencies are highly-productive, nevertheless, it really being made using present day and quantifying knowledge. This is where proper verbal exchange abilities which can help to keep away from misunderstandings and misconception's (Joynes et al., 2019).

2.3.2 Collaboration Skills

Collaboration is basically to involve people in the working or interaction with the people, especially networked collaborations, in which a person is separated from colleagues and far away from their colleagues. In the 21st C.S where a lot of technology and skills are need to work in workplace and effective use of ICT and technology is needed for the overall development of community. In the 4C's collaboration is given the more importance in 21st C.S to solve the different challenges in the modern age of technology and advancement (Joynes et al., 2019).

2.3.3 Critical Thinking Ability

It basically includes analyzing, synthesizing some information, which considered as basic to begin with the learning of 21st C.S. (Gardner et al. 2008) as cited by (Scott, 2015),

as cited by (Joynes et al., 2019). Critical thinking skill is also a basic need of 21st century as Pakistan is a developing country; we have a lot of responsibilities for the development of country as well as critical thinking is necessary for the personal development. In 4C's for the 21st C.S critical thinking skills placed in basics of 21st C.S (Joynes et al., 2019).

2.3.4 Creativity Skills

Creativity is realized in the means of the ability for creating new thoughts or solutions, invent new ways of thinking (Gardner, 2008; Sternberg, 2007) each cited by (Scott, 2015). In global environment of limitation, character competencies for creativity and imagination are progressively considered to be prerequisites for expert and personal success. In view of 21st C.S, creative skills or creative thinking skills plays most important part. For the world of digitalization and technology creativity is the basic thing which should be included in the personality development. Creativity in imagination or in work both are need in the minds of people of developing countries like Pakistan. Many of the countries giving proper trainings to the prospective teachers about 21st C.S but it still needs to train the prospective teachers. (Gardner, 2008; Sternberg, 2007) each cited by (Scott, 2015).

Figure 2.3

4C's of 21st century skills



Four C's of 21st Century Learning with Icons in an Infographic template for business presentation. (August, 2022) (Copied 30-12-2024).

Figure 2.3. represents the 4C's of 21st C.S which are critical thinking skills, skills of collaboration, communication skills and skills of creativity and innovation.

2.4 Soft Skills

Soft expertise is a character, behaviors or mindset that will let you navigate your environment, paintings well with others, carry out properly and gain your goals. These associative sections are appropriate over plots, and supplement the getting of various types of abilities too, similar to scholarly and specialized abilities (Joynes et al., 2019). Soft skills include the followings. Positive behavior: Emotional attitude by which an individual encourages others for having positive mindset for others (Lippman et al., 2015) as cited by (Gates et al., 2016). Responsibility: The capacity of a person to do any task within their given time or with the perfection in a sense of responsibility (Joynes et.al., 2019). Goal orientation: The capacity of a person to make a plan and get motivated to achieve their goal. (Lippman et al., 2014) mentioned in (Gates et al., 2016). Empathy: Affection of a person to feel someone else feeling, like sadness happiness or sorrow (Joynes et al., 2019).

Communication: The capacity of a person to listen others talk patiently as well as to communicate in a better way it may be formal or non-formal communication (Lippman et al., 2015). Social competencies: A cluster of competencies basic to urge nearby pleasantly with others, counting: regarding and communicating appreciation for others, illustrating context-suitable behavior and the capacity to act in keeping with social standards, the utilize of assortment of competencies or strategies pointed at settling struggle. Soft skills that mentioned above are the proposed in various studies that it is important for the prospective teachers having soft skills for the students learning as well as teachers own learning. Soft skills are need to be utilize in transfer of knowledge to their students (Lippman et al., 2015).

2.5 Life Skills

Life skills are the basics rule to live the life. It is about to live a life with responsibilities as a good citizen. According to the findings of an examination about life skills investigate field by WHO, it proposes ten abilities for the life skills:

1. Making of decisions
2. Solving of problems
3. Think creatively
4. Think critically
5. Communicate effectively
6. Interpersonal abilities
7. Awareness of your own self
8. Empathy

9. Feelings

2.6 Challenges regarding 21st Century Skills

Teachers now a days aware about the advantages of 21st century learning, but there are still need to practice more and difficult to implement due to some challenges in education sector. Inadequate knowledge, less facilities, less resources and burden of unrelated task influence their teaching practice. Some of the challenges are discussed here. Lack of resources: There are very less resources in our institutions to ensure 21st century skills that is a biggest challenge in achieving 21st century skills. Time constraints: Students have less time for studies because some extra-curricular activities or group activities needs more time so it makes obstacle in achieving 21st century skills. Inadequate knowledge: Knowledge and skills are the main part of teaching learning process so teachers should be master in this inadequate knowledge of teachers lead towards the biggest obstacle in achieving 21st century skills (Rusdin & Ali, 2018).

2.7 Implementation of 21st Century Skills

The research study found that teachers are unable to implement 21st century learning, due to burden by other tasks beside teaching and learning and time constraint is the major factor that influence their teaching practice. (Abdullah, 2017) as cited in (Rusdin, 2018). A research done by (Motshidisi and Mmankoko, 2013) describes that teachers faced different challenges in planning of their classes because of limited resources and infrastructure.

Educators are fully aware of the advantages of 21st century skills. They know the demanding situations of the need of 21st century skills. Knowledge, facilities, assets and burden of unrelated mission have an effect on education system. (Abdullah, 2017) as cited in (Rusdin, 2018) in his studies observed that teachers have could not implement 21st century skills because of burden through different responsibilities beside coaching and gaining knowledge of and time constraint is the most important component that have an effect on their coaching exercise. A studies performed through Motshidisi & Mmankoko (2013) has mentioned that instructors confronted demanding situations in making plans training because of constrained assets, infrastructure and overcrowding (Abdullah, 2017) as cited in (Rusdin, 2018).

2.8 Barriers in Learning 21st Century Skills

The dominant technique can be used to transmit knowledge is transmitting technique, through which instructors transmit authentic understanding to the students through lectures and textbook. Students can record the lectures, think creatively and analyze the lecture carefully. Therefore, it isn't the only way to train the students about twenty first century skills. A second barrier to students' development of 21st C.S is that they should be taught by explicit method.

These skills are not taught separately like thinking. A third barrier is that 21st C.S are more difficult to assess than factual retention. When they are not measured on assessments that have accountability or certification high stakes, teachers may reduce their classroom prioritization (Abdullah, 2017) as cited in (Rusdin, 2018)

2.9 21st Century Skills in Teacher Education Programs

In view of the need of 21st century, every person must be able to learn fast and access knowledge and technology, innovation and creativity (AlHariri, 2019) as cited in (Alhothali, 2021). Education systems are required to meet the social-economic nature and they are required the high quality education systems (Honfy, 2015 as cited in Alhothali, 2021). Teachers must be master of 21st century skills because of the difficulties raised (Zanartn et al., 2015) as cited in (Alhothali, 2021).

2.10 Challenges of 21st Century Education

In global perspective, things are changing dramatically, very quickly, the world is becoming less stable technology is alternating our relationship to information and technology. The major challenges including un-satisfaction of youth, discipline, unemployment, political unwillingness etc. Un-satisfaction of youth: Youth is not satisfied with their teacher's knowledge teachers are not adopting authentic teaching methods according to the level of the students so that youth is unsatisfied with the performance of their teachers. Discipline: The other reason is discipline in institutes because of some leaders and contractors who instigates time to time for their own benefits. Unemployment: Unemployment is also a challenge for 21st century education. When an educator looks his brother or sister unemployed after having a degree this leads towards the revolt (Shah, 2013).

Poverty: Poverty is one of the basic challenge. Many of the students could not afford the expenses of their studies this may leads to leftover the institutions. **Political unwillingness:** Political leaders kept the matter of education on side and did not take any responsibility that make a biggest obstacle in education system. **Corruption:** Because of corruption funds did not reach to the institutions which leads to the challenge in 21st century. **Privatizing of education:** Government teachers taking high salaries other than private which leads to the challenge in education system in 21st century. **Unawareness of teachers:** Teachers are unaware about the different models of teaching which is demand of the institutions (Shah, 2013).

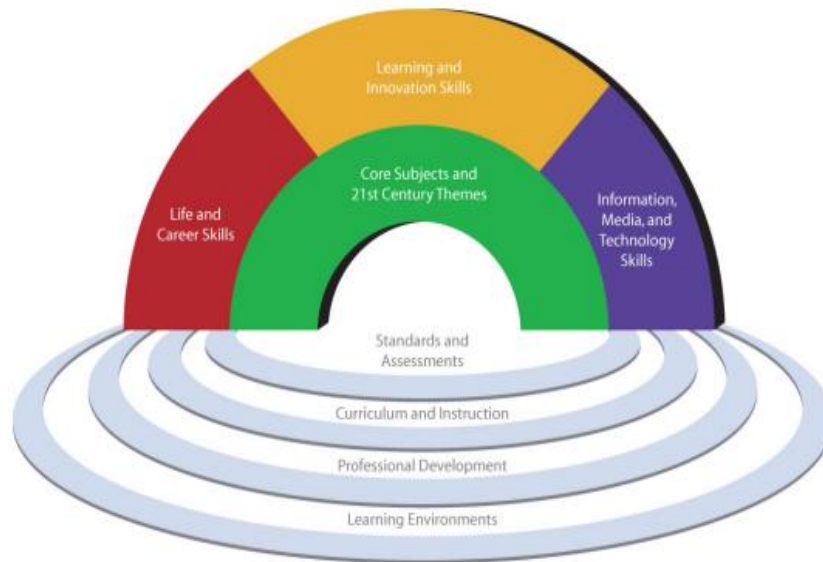
2.11 P21 Framework for the 21st Century Skills

For the integration of 21st C.S into the teaching and learning process the partnership has developed, a framework for the 21st century skills. It describes the skills, knowledge, literacies

etc. to succeed the students in their work and life. For the implementation of 21st C.S, P21 Framework refers the integration of core subjects into the syllabus. Students should also learn core knowledge instructions like collaboration communication and critical thinking. A graphic represents all the elements clearly. According to the partnership, each element has interconnected with each other.

Figure 2.11

21st century student outcomes and support system



Partnership for 21st century skills. (December, 2009). P21 framework definitions. (Copied 30-12-2024).

The figure 2.11. represent the 21st century outcome and support system for the integration of 21st century skills. It represents the core subjects and the themes of 21st century and it divided the skills into categories which can be shown in the figure.

2.12 Outcomes of the 21st Century Students

Following are the outcomes of the 21st century students:

2.12.1 Knowledge of Core Subjects

Core subjects for the mastery in 21st century skills are:

- English, reading or language arts
- World languages
- Arts
- Math
- Economics

- Science
- Geography
- History
- Government and civics (Partnership for 21st century skills, 2009).

According to the P21 framework followings skills are needed for the teaching and learning of 21st century. Awareness of the global world: It includes understanding of global issues, work collaboratively with the diverse cultures, understanding of other nations and cultures and use of different languages other than English. Civic literacy: It includes rights and obligation to live in a state or country and understanding of global civics. Health literacy: It includes understanding national and international public health and safety issues, basic physical and mental health measures like proper diet schedule etc. Environmental literacy: It includes knowledge of climate change, air land energy, water and ecosystem. It also includes impacts of society on the natural world like population growth and development (Partnership for 21st century skills, 2009).

2.12.2 Skills Learning and Innovation Skills

Learning and innovation skills are the second part of 21st century student outcomes and support system of P21 framework. Learning and innovation skills are discussed here: Creativity and innovation: It includes creative thinking, creatively working with others and implantation of these ideas to make innovations. Critical thinking and problem solving: It includes the use of inductive and deductive reasoning, use systematic thinking to make judgments and suggest possible solutions to solve problems. Communication and collaboration: It includes clear communication of for effective ideas i.e. oral, written or non-verbal communication skills, effective communication with diverse cultures. It also includes effective and respectful collaboration with others (Partnership for 21st century skills, 2009).

2.12.3 Information, Media and Technology Skills

This is the age of modernization and digitalization. Institutions are fully or partially rely on the technology. So, these skills are necessary for the teaching and learning process. Information literacy: It includes assess of information efficiently and evaluate this information critically, use and manage of information gathered and application of this information legally. Media literacy: It includes analysis of media and then interpret it with diverse environments ethically (Partnership for 21st century skills, 2009).

2.12.4 Life and Career Skills

Skills that are necessary to cope up with the life situations. It may involve problem solving ability and decision making ability.it is necessary to take immediate decisions as a teacher or as a leader of any team or group. These skills are as follow: Flexibility and

adaptability: It includes adaptation to work effectively it also includes to be flexible in dealing, cooperation to reach workable solutions. Initiative and self-directive: It includes time management according to goals, work independently and be a self-directed learner for the future progress. Social and cross-cultural skills: It includes good interactions with others and also work effectively with diverse team or diverse cultures. Productivity and accountability: It includes project management to set and meet the goals and production of effective results. Leadership and responsibility: It includes effective guide and lead of others and responsibility to deal with others (Partnership for 21st century skills, 2009).

2.13 21st Century Support Systems

The factors which are necessary to make sure student capability of 21st C.S. According to 21st century support system, the 21st century standards, proper method of assessments, curriculum, instruction, professional development and learning environments must be aligned to produce a support system that produces 21st century outcomes for today's students (Partnership for 21st century skills, 2009).

Teachers are the major part of teaching learning process. They can possess a key role in developing 21st C.S in learners. Curriculum, school environment, assessment, pedagogy are the key factors in development of 21st C.S. classroom is the best environment for skill development and skill acquisition where teacher can create the environment to learn the specific skills and the student can easily adopt it. It can be a basic part in developing 21st C. S (Kim et al., 2019). Teachers feedback is a key to continuous professional development (Arbour et.al., 2015) (Yoshikawa et al., 2015) as cited in (Kim et al, 2019). For the development of 21st C.S. in learners it must be developed in teachers through pre service and in service teacher training programs for the professional and skill development of teachers as well as learners (Kim et al., 2019). For pre-service teachers three dimensions has been discussed in their research. The results indicate clear gap between actual and preferred perceptions of 21st C.S (Haviz et al., 2020).

2.14 Thinking, Acting and Living as a 21st Century Skills Competencies

Thinking is a process to able individuals to develop problem solving skills and importance of thinking. (Unver, 2015) as cited in (Haviz et al., 2020). Critical thinking is term of thinking about a specific subject, content or problem (Elder, 2007) as cited in (Haviz et al., 2020). There are 5 elements of critical thinking skills for the senior high school has been identified which are elementary clarification, basic support, inference, advance clarification, strategies and tactics (Haviz et al., 2020).

Problem solving is a process of identifying problems, considering operations and solving through understanding of problems (Geenstein, 2012) as cited in (Haviz, et al., 2020). Creativity is also very important for pre service teachers because it is a process related to experience and habits to solve and understanding of a problem (Haviz et al., 2020).

2.15 Educational System Approaches that Aim to Develop 21st Century Skills

There are many initiatives taken by the several governments to develop 21st C.S. These approaches try to work time to time but there is a still need to develop different types of training sessions to ensure quality education. The overview of these approaches are as follows:

2.15.1 Partnership for 21st Century Skills P21

This approach initiates in 2015 for the development of 21st C.S. It gives several important details about assessment and measurement. It recognizes knowledge and skills for success of interconnected world, digitally and globally (P21, 2015-Framework definitions) as cited in (Pacheco, 2020).

2.15.2 OECD Approach

This approach also initiates in 2015 for the development of 21st C.S. It is a collaborative problem solving framework which shows interactions with other approaches. It emphasizes on collaboration of world from different locations through technology (OECD, 2013) as cited in (Pacheco, 2020).

2.15.3 ATC21S Approach

This approach initiates in 2012 for the 21st C.S. The approach Assessment and Teaching of 21st century skill group. This approach defined ten skills into four categories. It is based on analysis of curriculum and assessment framework for 21st century skills. it gives the description of knowledge, skills, attitudes, values and ethics (Binkley et al. 2012) as cited in (Pacheco, 2020).

2.15.4 European Commission

The European commission initiates in 2009. It created a document to lifelong learners defining key competencies with connections of 21st C.S. it provides a comparative overview of policy and practice (Gordon, et al. 2009) as cited in (Pacheco, 2020).

2.15.5 UNESCO Approach

This is the first approach to development of 21st C.S which initiates in 1996. It is document related to education and 21st C.S which dines four pillars of education i.e. learning to know, learning to do, learning to be and learning to live together (Delors, et al. 1996) as cited in (Pacheco, 2020).

Following table shows the five approaches to 21st century skills and compares them (Care & Griffin, 2014).

Figure 2.15

Comparison of 21st century skills approaches based on Care and Griffin (2014)

P21 (2015)	LEARNING AND INNOVATION: Creativity; Critical thinking; Problem solving	Communication; Collaboration	INFORMATION, MEDIA AND TECHNOLOGY: Literacy: Information; Media; ICT	LIFE AND CAREER: Flexibility and Adaptability; Initiative and Self-direction; Social and Cross-cultural Skills; Productivity and Accountability; Leadership and Responsibility.
OECD (2015)		INTERACT IN HETEROGENEOUS GROUPS: Relate Well to Others; Co-operate; Work in Teams, Manage and Solve Conflicts	USE TOOLS INTERACTIVELY: Interactively: Use Language, Symbols and Texts; Use Knowledge, Information and Technology	ACT AUTONOMOUSLY: Act within the Big Picture; Form and Conduct Life Plans and Personal Projects; Defend and Assert Rights, Interests, Limits and Needs.
ATC21S (Binkley et al., 2012)	WAYS OF THINKING: Creativity and Innovation; Critical Thinking; Problem Solving; Decision Making; Learning to Learn; Metacognition	WAYS TO WORK: Communication; Collaboration	TOOLS TO WORK: Information and ICT Literacy	LIVING IN THE WORLD: Citizenship (local/global); Life and Career; Responsibility (social/personal); Including Cultural (awareness/competence)
European Commission (Gordon et al., 2009)	LEARNING TO LEARN:	Communication in Mother tongue and Foreign Languages	Mathematical, Science, Technology and Digital Competences	Social and Civic Competences; Initiative and Entrepreneurship; Cultural Awareness and Expression
UNESCO (Delors et al., 1996)	LEARNING TO KNOW	LEARNING TO DO	LEARNING TO DO	LEARNING TO BE AND TO LIVE TOGETHER

Pacheco, L.H.M, et.al., (2020). Improvements in Bases21: 21st century skills assessment model to K12. (copied 31-12-2024)

2.16 Development of 21st Skills through Project Based Learning (PBL)

Project based learning is a new challenge in achieving 21st century skills. Project Based learning (PBL) is very important in the present era. Project based learning can also be developed through group activity so that students could be master in communication skills. As a student, it can be developed in a group to strengthen their ability of critical think and the ability to work in a team but as a teacher it is a level based activity, teacher should adopt the strategy of project based learning (PBL) according to the level of students before implementing in the class (Fatmawati, 2018).

2.17 Teachers' readiness for 21st Century Learning

21st century learning is a student-centered learning and a sum of multiple skills. This may include high order skills like digital information skills, critical thinking skills and project based learning. The appropriate strategy of teaching is very important in developing 21st century skills into learners. Therefore, teacher preparation for knowledge and skills are very important. Many studies have shown the moderate level of readiness for 21st century skills into teachers but some of the studies showed positive attitude of teachers towards 21st century skills learning (Tyan, 2020).

2.18 Strategies for 21st Century Learning Skills

The world is growing rapidly. We are living in the era of 21st century, it is age of digital learning and globalization. So, we need to develop 21st century skills to live with the world of information and technology. The components are: innovation and learning skills, information skills like media and technology, life and career skills. there is a need to foster all these skills in 21st century skills (Tyan, 2020).

2.19 21st Century Skills need in Education

The development of technology is increasing day by day, not just in education its usage is rapidly increasing in industry and business. Problem arises with the variety of technological skills or life skills to meet the global requirement of the society. The life is becoming difficult to ensure the skills to live in the 21st century. Teachers, students and authorities put forward a number of skills for the student's future. According to Emiliana Vegas a successful education system is only attached with problem solving and information and technology (Wrahatnolo & Munoto, 2018).

Digital literacy is also a very important skill in today world especially in education, we have a lot of hurdles and problems to ensure a quality education. some students are very good in using technology for their education but some of them are still need to acquire these type of skills to become a perfect to live in the world of innovations (Wrahatnolo & Munoto, 2018).

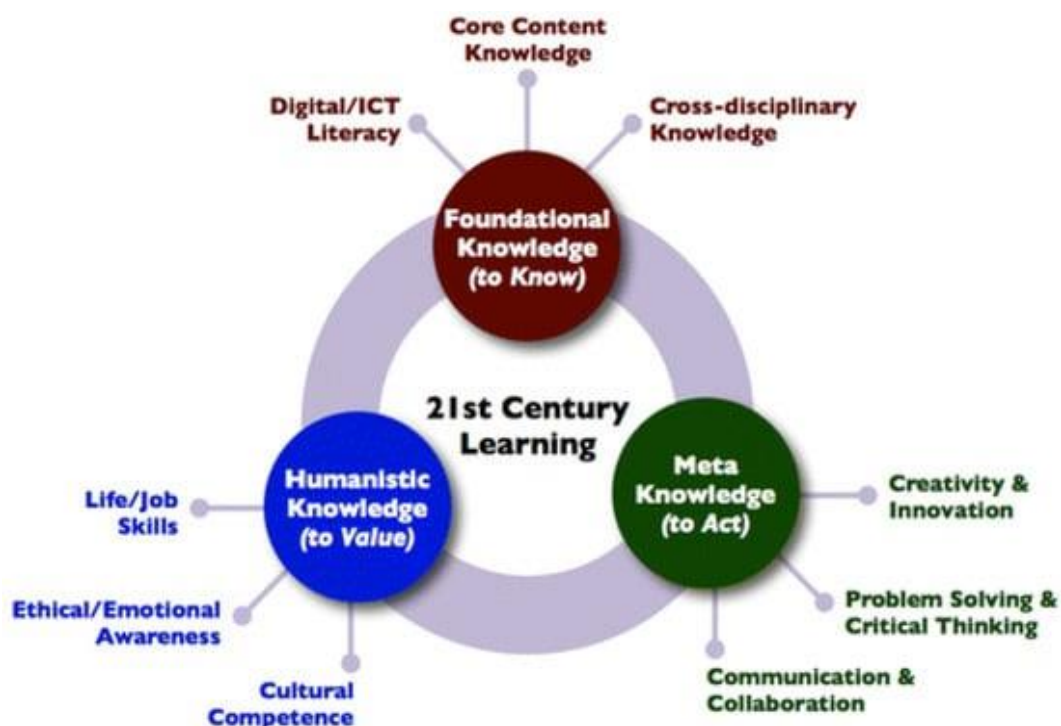
2.20 Framework for 21st Century learning

Through the understanding of various studies, we can say that the 21st century skills are the most important for the globalization. Digital learning and different types of skills are the foremost steps for the 21st century students. Critical analysis skill, creative skill etc. should must be foster in students' syllabus and course to foster 21st century skills (Wrahatnolo & Munoto, 2018). Digital learning is the most important step to foster 21st century skills in students' lives. Secondly, critical thinking ability should be developed. Problem solving skill, creative thinking

ability, life skills, digital literacy and innovative thinking skills, communication and soft skills should must be gained by students. So, it must be included in students' coursework or syllabus. 21st century learning frame work can be understood through following figure.

Figure 2.20

Framework for 21st century learning



(Khahro & Javed, 2022). Key Challenges in 21st century learning: A way forward towards sustainable higher educational institutions (Copied 14-1-2025).

In the figure 2.20. there are three major key areas are identified to improve teaching and learning in 21st century. First is foundational knowledge which is very important and help learners to improve in the field of knowledge. Second is meta-knowledge which includes creative thinking, problem solving and collaboration. Third is humanistic stage in which jobs, ethical responsibilities and cultural values for learners. So, it is very important to improve all these skills. Institutes are facing challenges in using different types of technology to improve educational process. They are using various ways that how can institutes used technology to improve teaching and learning (Khahro & Javed, 2022).

2.21 21st Century Educational Challenges

In the 21st century education, where technology plays a biggest role in teaching and learning process. The institutes, teachers and students also face different challenges in 21st

century education. A research study by (Khahro & Javed, 2022) discussed the 21st century educational challenges. 21st century educational challenges are discussed below:

Declining of student enrollment: The percentage of schools' enrollment is decreased by 42% in recent years. In Covid-19 there was a tragic drop in students' achievement. Pandemic decreases the students' achievement which is a biggest challenge. **Financial difficulties:** During the recent years, the higher education institutions facing a tragic financial issues. Those who are facing financial difficulties suffer from depression, anxiety and other psychological issues. **Changes in curriculum:** Curriculum changes effect the 21st century learning. The curriculum should be developed according to the need of the learners (Khahro & Javed, 2022). Education in 21st century faced many challenges that making obstacle in its development. Following figure can better explain the challenges of 21st century education.

Figure 2.21.

Key challenges in 21st century education



Khahro & Javed, (2022). Key Challenges in 21st century learning: A way forward towards sustainable higher educational institutions (Copied 14-1-2025).

2.22 Solutions to the challenges of 21st century education

Followings are the possible solutions to the challenges of 21st century education. **Incentives in learning:** For the learning purpose, there are two types of incentives can be considered in general, which are inducement and supplement reward. Incentives are the good

way to motivate the students towards different activities and learning.so, it can be a solution for the challenges of 21st century education.

Globally recognized and acceptable: It is a challenge that, traditionally, online learning and social-media based learning is not acceptable. So that the courses and certification should be globally introduced. Student's attitude should be changed towards technology so that, they can make choices with freedom for their better learning. It would be a solution to change the attitude towards the technology-based education in 21st century. Connectivity of online learning with globalization: Online learning was very useful during Covid-19 so it would be globalized to ensure quality education in the 21st century education. Updated curriculum: Curriculum should be updated for the 21st century education which is according to the needs and level of the students which can properly facilitates teachers and students in teaching and learning process. Innovative and continuous process: There is a need of innovation in teaching and learning process. The proper technique of assessment should be developed to ensure quality education for the students in the 21st century education.

Technology-based learning: Technology is the basic of 21st century education. we cannot ignore the advantages of technology for the education. In 21st century, students are more addict to the smart phones and different types of technology. So, it is more reliable to integrate technology into 21st century learning. Equity in learning: In the 21st century, it is hard for every student to go far off places to learn or get education. Through technology-based learning we can make the learning access-able for all the students equally.

Critical thinking: 21st century education is responsible to develop different types of skills in students. So the critical thinking skills should must be developed in students to overcome the challenges in their lives. Communication skills: In the 21st century everyone is addicted with technology and doing all the works digitally so there should be a platform for the students to interact with different cultures so that they can speak and understand different languages. Collaborative learning: Students work in small projects or assignments in a group and in a collaborative way. Through the collaborative learning, they are able to work independently.so, the collaborative learning is most important in the 21st century education. Personalized learning: When students receive personalized learning, they are more succeed academically.

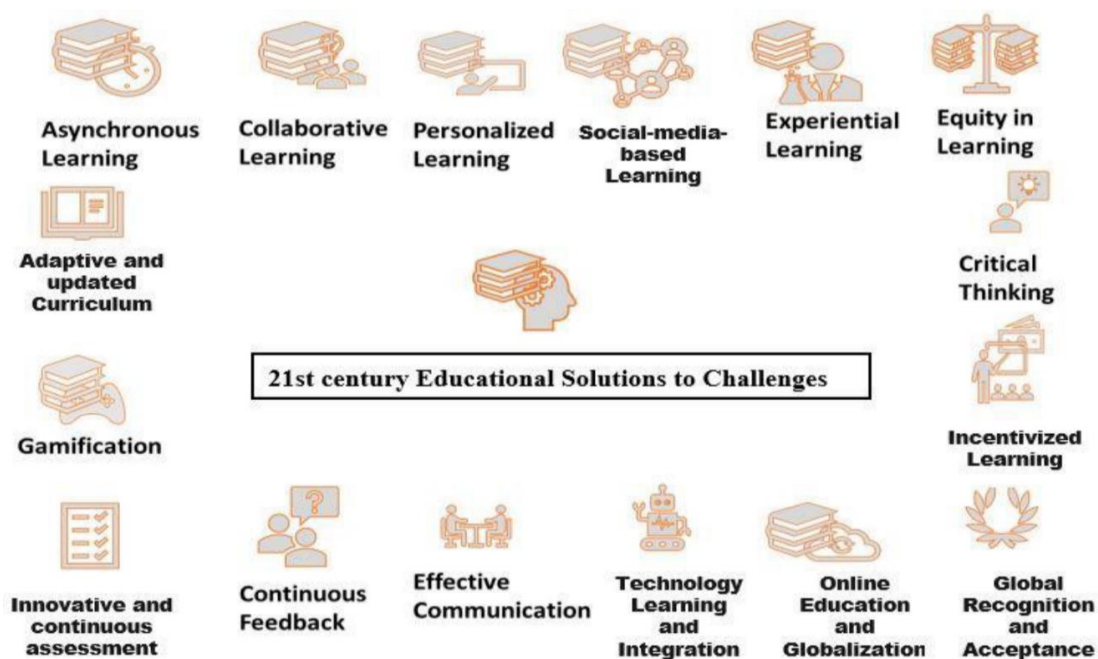
Personalized learning allows the student to achieve their goal in a better manner. In the result of personalized learning we can see the engagement of student, actionable and memorable learning (Khahro, & Javed, 2022).

Social media based learning: It is believed that social media can enhance teaching and learning. Students can gather a variety of data for their assignments or projects. Social media also used as communication purpose. The most common social media platforms include what's app and messenger. These platforms mostly used on smartphones, tablets or computers to make phone calls or see videos etc. social media based learning (SMBL) is the use of social media like twitter, google, you tube and face book for the academic purpose. Social media makes the learning attractive for students. It makes collaborative and interactive learning for students. The social media kept the ability to enhance students learning in 21st century.

Experiential learning: Experienced learning refers to the learning by doing. To apply ideas and experiences into the real life situations. It boosts the student's self-esteem and motivate them to learn. Gamification learning: Through the game based learning, students can work collaboratively and test their knowledge and ability with different aspects and also with different techniques which can help them to enhance their skills of 21st century. Continuous feedback: Learning must be continuously assessed time to time to track the achievement of learning objectives. It also helps students to track their progress in a specific time period (Khahro & Javed, 2022). All the suggested remedies are shown in the figure given below.

Figure 2.22

Remedies to challenges in the 21st century



(Khahro & Javed, 2022). Key Challenges in 21st century learning: A way forward towards sustainable higher educational institutions (Copied 14-1-2025).

Figure 2.22. represents the solutions to the challenges of 21st century education in effective manners.

2.23 Training Effect on Teacher's Ability to Implement 21st Century Learning

21st century is known as the era of knowledge. knowledge is the foremost priority in 21st century. It is also called as the era of technology and ICT. To implement 21st C.S into 21st century learning needs proper training of pre-service and in-service teachers. 4C training was held for prospective teachers previously. The previous data collected shows that the 60% of teachers attend the 4C teachers training. According to Teachers there are two main obstacles in implementing 21st century learning, there is a lack of capacity and infrastructure for lower or middle level. The data of the research showed that the students critical thinking skills was medium level. However, creativity and communication skills were at high level. (Hasbi, 2022). The four components should be added into curriculum to integrate 21st C.S. first is the creative thinking ability, being innovative or solving problems. Second is learning and innovation skills. Third one is life skills. Fourth one is mastering tool to develop these skills, which includes media, technology and different ICT tools (Hasbi, 2022).

2.24 Pre-service Teachers' Perception about 21st Century Skills

The study showed that the prospective teachers should have three types of skills basically which are, learning skills, literacy skills and life skills. it also includes communication skills, digital literacy, critical thinking, collaboration, creativity and so on (Osiesi & Blignaut, 2025). The major challenges that found in the study were academic workload, lack of digital resources and ICT competencies and inadequate assessments (Osiesi & Blignaut, 2025).

2.25 Integration of 21st Century Skills into the Curriculum of Education

4C's skills are recognized as the US based partnership for 21st century skills. these are the most important to have in any country's curriculum. 21st century skills are most important in the present era of education. it should be integrated into the curriculum of education. According to the (Herlinawati, 2024) the familiarity of teachers with 4C's skills depends upon some factors like teaching trainings, teaching experience, professional development opportunities and research activities (Herlinawati, 2024).

2.26 Problems in Integration of 4C's Skills

The major challenges found in the research by (Herlinawati, H, 2024) are as follows:

- Time constraints
- Lack of resources
- Classroom management

- Lack of training and support

According to the (Herlinawati, 2024) prospective teachers have not yet reached at the high level of 4C's skills.

2.27 Level of 21st Century Skills of Prospective Teachers

According to research by (Yanel & Selcuk, 2024). It is found that the level of 21st century skills competency is high in Turkey. Most of the prospective teachers having high level in technology advancement and ICT related skills. the teachers who assume themselves sufficient in the field of knowledge have more successful in their teachings and proficient in using of technology. This study implies the importance of 21st century skills for the prospective teachers. The study was having gender variable and found the female teachers are more competent than male teachers. As well as the graduates who studied specific curriculum are more competent in 21st century skills. This study suggests the continuous trainings for the professional development of prospective teachers (Yanel & Selcuk, 2024).

2.28 Critical Summary

Several aspects are at play when it comes to 21st century learning performance. The issues include teachers' expertise, facilities, resources, time constraints, and the workload from other jobs that don't seem to be regarding teaching and learning. It is necessary to make efforts to overcome in order to guarantee that educators will attain the highest caliber of instruction possible in classrooms of the twenty-first century. It is necessary to employ fresh, engaging, and topical teaching methods with the right tools, enough space, and ICT equipment. There should be regular professional development opportunities for educators that include all of the teachers. The course material should motivate instructors to enhance their methods of instruction. The courses have to include as many instructional strategies as possible.

However, a lot of teachers find that attending professional development courses is insufficient to help them become better teachers. By offering a teaching module, other problems with time constraints, ignorance, and the pressure of completing extra work unrelated to teaching and learning may be resolved. Teachers' ability to construct engaging, effective, and creative lessons that satisfy the demands of 21st-century learning has been hampered by all these problems.

4C's skills and P21 framework have been given the very good structure and structure that could not be deniable. In fact, they are the most important to have in our educational systems it may be in Pakistan or other countries in the world. Besides, different approaches from 1996 till

now are doing great for the development of 21st century skills but there is still need for the development of 21st century skills. Teachers are the basic fundamental of future generations. So, a teacher should be trained or skilled in all aspects so that the quality teaching and learning process could be achieved. The prospective teachers face many challenges in achieving 21st century skills. The prospective teachers are lack of adequate knowledge. So, their proper and regular professional training is needed. Some other challenges include lack of facilities, lack of confidence and many other that are mentioned in the literature.

CHAPTER 3

RESEARCH METHODOLOGY

In this chapter overall methodology of the research was discussed. This chapter includes research design, population of the study, sample and sampling technique, instruments, procedure (validity, reliability and pilot testing), data collection and data analysis.

3.1 Research Design

Mixed method approach was used to study. Convergent parallel design was focused to conduct the study because the researcher collects quantitative and qualitative data simultaneously. The researcher has taken the primary source of data.

3.2 Population of the Study

The population of the research was the prospective teachers studying in the semester 6th, 7th and 8th from BS/B.Ed Program. The data were collected during session Fall (2024) from two universities of Islamabad which are: International Islamic University, Islamabad and National University of Modern Languages (NUML), Islamabad. Population size were 550. Information about the population of the study has been taken from the coordinator of Department of Education from NUML and the coordinator of Department of Teacher Education from IIUI.

Sr.no	Institute	Department	Program	No. of P.T
1.	IIUI	Teacher Education	BS/B.Ed	220
2.	NUML	Education	B.Ed	330
Total population				550

3.3 Sample and Sampling Technique

Simple Random Sampling Technique was used to collect the data. Sample was 226 prospective teachers studying in semester 6th, 7th and 8th from BS/B.Ed Program. 113 prospective teachers from IIUI in which 20 prospective teachers has been taken from B.Ed program and 93 prospective teachers has been taken from BS program. 113 prospective teachers studying in semester 6th, 7th and 8th from B.Ed program from NUML was taken as a sample.

Sr.no	Institute	Department	Program	No. of students
1.	IIUI	Teacher Education	BS/B.Ed	113
2.	NUML	Education	B.Ed	113
Sample size				226

3.4 Instruments

Self-developed questionnaire with five points rating-scale and 48 statements from which, 20 statements for learning skills, 12 statements for literacy skills, 7 statements for life skills and 9 statements for transferring skills was used to identify 21st century skills achieved by prospective teachers. The levels were measured according to the cut point of scores responded by P.T. Equal intervals were used for labelling low, medium and high level of 21st century skills. Open ended questionnaire with 2 demographic questions and 5 open-ended questions related to 21st century skills were used to find out challenges faced by prospective teachers in achieving 21st century skills.

3.5 Procedure (Validity, Pilot testing and Reliability)

3.5.1 Validity of the instrument

To check the validity of the instrument the researcher approached to the Professionals of Department of Education from International Islamic University, Islamabad. They suggested to improve some statements and also suggest to remove some statements. They also suggest to improve grammatical mistakes. The researcher incorporates all the suggestions.

3.5.2 Pilot Testing

Pilot test was conducted from the students of 5th semester from both International Islamic University, Islamabad and National University of Modern Languages (NUML), Islamabad. The sample size for the pilot test was 40 prospective teachers from both universities.

3.5.3 Reliability of the Instrument

Cronbach Alpha was used to check the reliability of the scale. Indicators of the instrument were learning skills, literacy skills, transferring skills and life skills. The reliability of the instrument was .83

Reliability Statistics	
Cronbach's Alpha	N of Items
.83	52

3.6 Data Collection

Data were collected from the prospective teachers studying in the semester 6th, 7th and 8th from BS/B.Ed program. Data were collected during the session Fall-2024 from International Islamic University, Islamabad and National University of Modern Languages (NUML), Islamabad. Two months has been spent by the researcher for data collection from the selected universities. Data was collected through the personal visit to the specified universities. Quantitative and qualitative data were collected simultaneously.

3.7 Data Analysis

Data were analyzed through equal interval, mean score and percentage. Frequency, percentage and thematic analysis was applied to identify challenges about the 21st century skills. The t- test was applied for the comparison of level of 21st century skills among prospective teachers of both universities.

3.8 Ethical Consideration

Consent was clearly address to the participants that all the data will remain confidential and only use for research purpose.

CHAPTER 4

DATA ANALYSIS AND INTERPRETATIONS

This chapter includes the analysis of data and interpretation. Data were analyzed through equal interval, mean score and percentage. Frequency and percentage was applied to identify challenges about the 21st century skills. The t- test was applied for the comparison of level of 21st century skills among prospective teachers of both universities.

Objective 1

Identify the level of 21st century skills achieved by prospective teachers.

Table 4.1

Level of Learning skills achieved by prospective teachers from IIUI and NUML

The maximum achieved score of prospective teachers was 100 and the minimum was 29. The range of prospective teachers' response was divided with the 3 equal intervals with the cut point of 23. The intervals were elaborated in following table.

Level	Intervals	Frequency	Percentage
Low	29-52	22	10%
Medium	53-76	118	52%
High	77-100	86	38%

The values of table 4.1 shows that the majority of the students (52%) have medium level of learning skills. Very few students (10%) were at low level. One third of the sample (38%) was at the high level of learning skills which means that majority of the P.T from both universities having medium level of learning skills of 21st century skills.

Table 4.2

level of Literacy Skills achieved by prospective teachers from IIUI and NUML

The maximum achieved score was 60 and the minimum was 13. The range of prospective teachers' response was divided with the 3 equal intervals with the cut point of 15. The intervals were elaborated in following table.

Level	Intervals	Frequency	Percentage
Low	13-28	18	8%
Medium	29-44	98	43%
High	45-60	110	49%

The values in this table shows that the majority of the students (49%) have high level of literacy skills. Very few students (8%) were at low level. One fourth of the sample (43%) was at the medium level of literacy skills which means that majority of the P.T from both universities having high level of literacy skills of 21st century skills.

Table 4.3

Level of Life Skills achieved by prospective teachers from IIUI and NUML

The maximum achieved score was 35 and the minimum was 9. The range of prospective teachers' response was divided with the 3 equal intervals with the cut point of 8. The intervals were elaborated in following table.

Level	Intervals	Frequency	Percentage
Low	9-17	21	9%
Medium	18-26	113	50%
High	27-35	92	41%

The values in this table shows that the majority of the students (50%) have medium level of life skills. Very few students (9%) were at low level. One fourth of the sample (41%) was at the high level of life skills which means that majority of the P.T from both universities having medium level of life skills of 21st century skills.

Table 4.4

Level of Transferring Skills achieved by prospective teachers from IIUI and NUML

The maximum achieved score was 45 and the minimum was 10. The range of prospective teachers' response was divided with the 3 equal intervals with the cut point of 11. The intervals were elaborated in following table.

Level	Cut Points	Frequency	Percentage
Low	10-21	24	11%
Medium	22-33	93	41%
High	34-45	109	48%

The values in this table shows that the majority of the students (48%) have high level of transferring skills. Very few students (11%) were at low level. One fourth of the sample (41%) was at the medium level of transferring skills which means that majority of the P.T from both universities having high level of transferring skills of 21st century skills.

Objective 2

Compare the level of 21st century skills among the prospective teachers of both universities.

Table 4.5

Comparison of learning skills of prospective teachers from IIUI and NUML

Group	N	Mean	t	Df	p
IIUI	113	71.28			
			.521	223.26	.603
NUML	113	72.25			

Table 4.5 shows that the p-value was (.603) and the t-value was (.52), which was greater than the significant level (0.05), which indicates that there is no significant difference between the learning skills of IIUI and NUML. The mean score of prospective teachers from IIUI was 71.28 and the mean score of prospective teachers from NUML was 72.25.

Table 4.6

Comparison of literacy skills of prospective teachers from IIUI and NUML

Group	N	Mean	t	Df	p
IIUI	113	42.06			
			.841	223.75	.401
NUML	113	43.19			

Table 4.6 shows that the p-value was (.401) and the t-value was (.841), which was greater than the significant level (0.05), which indicates that there is no significant difference between the literacy skills of IIUI and NUML. The mean score of prospective teachers from IIUI was 42.06 and the mean score of prospective teachers from NUML was 43.19.

Table 4.7*Comparison of life skills of prospective teachers from IIUI and NUML*

Group	N	Mean	t	Df	p
IIUI	113	24.38			
			2.05	223.34	.042
NUML	113	25.82			

Table 4.7 shows that the p-value was (.042) and the t-value was (2.05), which was less than the significant level (0.05), which indicates that there is significant difference between the life skills of IIUI and NUML. This difference is because of prospective teachers from NUML as their mean score (25.82) is greater than the mean score (24.38) of prospective teachers from IIUI.

Table 4.8*Comparison of transferring skills of prospective teachers from IIUI and NUML*

Group	N	Mean	t	Df	p
IIUI	113	31.69			
			1.28	219.62	.199
NUML	113	32.96			

Table 4.8 shows that the p-value was (.199) and the t-value was (1.28), which was greater than the significant level (0.05), which indicates that there is no significant difference between the transferring skills of IIUI and NUML. The mean score of IIUI was 31.69 and the mean score of NUML was 32.96.

Table 4.9*Comparison of mean scores of 21st century skills of P.T of IIUI and NUML*

	IIUI	NUML
Learning skills	3.56	3.6
Literacy skills	3.5	3.6
Life skills	3.48	3.68
Transferring skills	3.52	3.66

The values in this table showed that the prospective teachers from NUML has high mean score on all skills that are learning skills, literacy skills, life skills and transferring skills as compared to prospective teachers from IIUI. Although the difference is small but the mean score of prospective teachers from NUML is higher.

Comparison of levels of 21st century skills of prospective teachers from IIUI and NUML

Table 4.10*Comparison of level of Learning Skills of prospective teachers from IIUI and NUML*

Institute	Level	Intervals	Frequency	Percentage
IIUI	Low	31-54	17	15%
NUML	Low	29-52	11	10%
IIUI	Medium	54-77	60	53%
NUML	Medium	53-76	57	50%
IIUI	High	77-100	36	32%
NUML	High	77-100	45	40%

The values in the table shows that the more prospective teachers (40%) from NUML have high level of learning skills as compared to prospective teachers (32%) from IIUI.

Table 4.11*Comparison of level of Literacy Skills of prospective teachers from IIUI and NUML*

Institute	Level	Intervals	Frequency	Percentage
IIUI	Low	12-28	9	8%
NUML	Low	12-28	9	8%
IIUI	Medium	29-45	58	51%
NUML	Medium	29-45	46	40%
IIUI	High	44-60	46	40%
NUML	High	44-60	58	51%

The values in the table shows that the more prospective teachers (51%) from NUML have high level of literacy skills as compared to prospective teachers (40%) from IIUI.

Table 4.12*Comparison of level of Life Skills of prospective teachers from IIUI and NUML*

Institute	Level	Intervals	Frequency	Percentage
IIUI	Low	8-16	9	8%
NUML	Low	8-16	6	7%
IIUI	Medium	17-25	54	47%
NUML	Medium	17-25	43	38%
IIUI	High	27-35	48	42%
NUML	High	27-35	64	56%

The values in the table shows that the more prospective teachers (56%) from NUML have high level of life skills as compared to prospective teachers (42%) from IIUI.

Table 4.13

Comparison of level of transferring Skills of prospective teachers from IIUI and NUML

Institute	Level	Cut Points	Frequency	Percentage
IIUI	Low	9-21	15	13%
NUML	Low	13-24	15	13%
IIUI	Medium	22-33	48	42%
NUML	Medium	25-35	52	46%
IIUI	High	34-45	50	44%
NUML	High	36-45	46	40%

The values in the table shows that the more prospective teachers (44%) from IIUI have high level of transferring skills as compared to prospective teachers (40%) from NUML.

Objective 3

Find out learning challenges hindering in achieving 21st century skills of prospective teachers.

Table 4.14

Challenges hindering in achieving learning skills of P.T

Challenges	Frequency	Percentage
Low confidence	65	29%
Low vocabulary	58	26%
Less concentration on learning	54	24%
Less facilities	28	12%
Lack of ideas	21	9%

Table 4.14. shows that the 29% prospective teachers have low confidence that are hinder in achieving learning skills. 26% prospective teachers have low vocabulary as a learning challenge. 24% prospective teachers have less concentration on learning. 12% faced the challenge of less facilities. 9% prospective teachers have lack of ideas. It means that most of the prospective teachers have low confidence which are hinders in achieving learning skills.

Table 4.15*Challenges hindering in achieving literacy skills of P.T*

Challenges	Frequency	Percentage
Burden of doing other tasks	68	30%
Inadequate knowledge	47	21%
Time constraints	44	19%
Lack of resources	40	18%
Less facilities	27	12%

Table 4.15. shows that the 30% prospective teachers have burden of doing other tasks which hinder in achieving literacy skills. 21% prospective teachers have inadequate knowledge. 19% prospective teachers have time constraints challenge. 18% prospective teachers facing the challenge of lack of resources. 12% prospective teachers faced the challenge of less facilities. It means that most of the prospective teachers facing the challenge of burden of doing other tasks which are hinders in achieving literacy skills.

Table 4.16*Challenges hindering in achieving life skills of prospective teachers*

Challenges	Frequency	Percentage
Time management issue	79	35%
Unable to balance tasks	54	24%
No critical analysis ability	40	18%
Short temperedness	27	12%
Less confidence	26	11%

Table 4.16. shows that the 35% prospective teachers faced time management issues. 24 % prospective teachers are unable to balance tasks in their lives. 18% prospective teachers have no critical analysis ability which hinder in achieving life skills. 12% prospective teachers have short temperedness and 11% prospective teachers have less confidence. It means that most of the prospective teachers faced time management issues which are hindering in achieving life skills.

Table 4.17*Challenges hindering in achieving transferring skills of P.T*

Challenges	Frequency	Percentage
Difficulty in explaining	74	33%
Unable to handle diverse students	47	21%
Lack of ideas	46	20%
Unable to communicate in a group	35	15%
Less knowledge of subject	24	11%

Table 4.17. shows that the 33% prospective teachers have difficulty in explaining. 21% prospective teachers are unable to handle diverse students which are hindering in achieving transferring skills. 20% prospective teachers have lack of ideas which hinder in achieving transferring skills. 15% prospective teachers unable to communicate in a group. 11% prospective teachers have less knowledge of subject. It means that most of the prospective teachers have difficulty in explaining to the students which hinder in achieving transferring skills of prospective teachers.

Thematic Analysis

Major themes of Learning Skills

1. Low confidence
2. Low vocabulary
3. Less concentration
4. Less facilities
5. Lack of ideas

Major themes of Literacy Skills

1. Burden of doing other tasks
2. Inadequate knowledge
3. Time constraints
4. Lack of resources
5. Less facilities

Major themes of Life Skills

1. Time management issues
2. Low confidence
3. No critical analysis ability
4. Short temperedness
5. Less confidence

Major themes of Transferring Skills

1. Difficulty in explaining
2. Unable to handle diverse students
3. Lack of ideas
4. Unable to communicate in group
5. Less knowledge of subject

1. Learning Skills

Prospective teachers enlist different type of challenges to achieve learning skills. majority of the prospective teachers stated that they have *low confidence* while teaching the students because of this they are uncomfortable to teach. Some of the P.T stated that they have *low vocabulary* and feeling difficulty in teaching some subjects. One third of the P.T stated that they have *less concentration* of learning.

Some P.T said that they have less facilities while teaching which effects the level of their learning skills.

Few of the P.T stated that they have *lack of ideas* to teach the students in an innovative way of learning which also effects the learning skills of P.T.

6. Literacy Skills

Most of the Prospective teachers stated that they have a lot of *burden of doing other tasks* which hinders in achieving literacy skills of P.T. Some of the P.T stated that they have *inadequate knowledge* about literacy skills.

Some of the P.T said they have time constraints issues, they have too much tasks to do in a very specific time period which are unable to handle.

Some P.T stated that they have *lack of resources* which hinders in achieving literacy skills. Few of the P.T stated that they have *less facilities* to increase the level of literacy skills of the P.T.

7. Life Skills

Majority of the P.T stated that they are facing *time management issues* in achieving life skills. *They said that they have a lot of tasks and work to do in limited time which hinders in*

achieving life skills. Half of the P.T stated that they are unable to balance tasks and they think that this is the basic thing which can help in achieving life skills.

One third of the P.T said that they have *no critical analysis ability* which hinders in achieving life skills. Some of the P.T said that they are *short-tempered* which hinders in achieving life skills and some of the P.T have *low confidence* which hinders in achieving life skills.

8. Transferring Skills

Most of the prospective teachers face *difficulty in explaining* of lesson they said that they have unable to think that how to explain long lessons in effective manners. Some of the P.T stated that they are *unable to handle diverse students* during teaching which hinders in achieving transferring skills.

Some of the P.T said that they have lack of ideas while teaching which are necessary to teach effectively.

Some of the P.T said that they are *unable to communicate in a group* and some of the P.T stated that they have *less knowledge of subject matter* which hinders in achieving transferring skills.

Students Suggestions to Overcome the Challenges of 21st Century Skills

On the question about to give some suggestions to overcome the challenges of 21st century skills P.T suggested following suggestions to overcome the challenges of 21st century skills.

1. Through strong work ethics.
2. By conveying ideas to each other.
3. Through proper learning tools like technological resources and financial help.
4. Through patient in life they can achieve life skills.
5. Through developing emotional intelligence.
6. By cultivating self-awareness.
7. By practicing self-reflection: regularly assess your strength, weakness and areas of improvement.
8. Through professional development of teachers and giving them regular professional opportunities to know about new methods of teaching and technology advancement.
9. Through integrated learning.
10. By setting goals, identify the ideas for the skills which you need to improve.
11. Through seeking feedback.
12. Through project based learning to develop critical thinking, problem solving and collaboration.
13. Through proper management of skills: balance entertainment with skill acquisition.
14. Through free courses which should be assessable and flexible.

CHAPTER 5

SUMMARY, FINDINGS, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

In this chapter the researcher has discussed about the details of the work in the form of summary. The researcher has also discussed about the findings with reference of the table numbers. The researcher has also discussed about the findings with link to the previous studies. The researcher has also drawn the suitable conclusions of the research and give recommendations for the future studies.

5.1 Summary

21st century skills become a contradictory from 2019 till now. It is an important topic that should be raised or discussed and make possible solutions to achieve the 21st century skills in every field of life. Teaching and learning is the basic of every profession but they are still not able to gain 21st century skills. there are some challenges that are hindering in achieving 21st century skills of prospective teachers.

The objectives of this study were to identify the level of 21st century skills achieved by prospective teachers and to compare the level of 21st century skills among the prospective teachers at university level and also to find out learning challenges hindering in achieving 21st century skills of P.T. The researcher identifies the level of 21st century skills of prospective teachers through the equal interval. Moreover, the researcher compares the level of 21st century skills of prospective teachers. The study was delimited to the two public sector universities located in Islamabad which are International Islamic University, Islamabad (IIUI) and National University of Modern Languages, Islamabad (NUML). The researcher also delimits the department of Education from the NUML and department of Teacher Education from IIUI. The researcher also delimits the students of BS and B.Ed from both universities. The researcher has been taken four basic skills for the study which are further divided into sub-skills i.e. learning skills, literacy skills, life skills and transferring skills which are necessary for the prospective teachers to achieve educational goals of their students.

Mixed method approach was used to study. Convergent parallel design was used to conduct the study. Two instruments were used to study, one is self-developed five-point rating scale consist of 48 statements related to 21st century skills and second is open ended questionnaire consist of 2 demographic questions and five open-ended questions. The validity of the instruments was checked by the expert's opinion. Data were collected from the

prospective teachers studying in 6th 7th and 8th semester from BS/B.Ed program from the session Fall-2024. Data were analyzed through the equal interval, mean score and percentage analysis. The t-test was applied for the comparison of level of 21st century skills of P.T. Thematic analysis was applied to identify the learning challenges about 21st century skills of P.T.

5.2 Findings

The following findings were drawn from the collected and analyzed data of the study:

1. Majority of the prospective teachers which are 52% prospective teachers having medium level of learning skills (related to the learning and innovation skills from P21 framework) and 38% prospective teachers having high level of learning skills while 10% prospective teachers having low level of leaning skills which means that most of the prospective teachers having medium level of learning skills. (Table 4.1)
2. Majority of the prospective teachers which are 49% prospective teachers having high level of literacy skills (related to information, media and technology skills from P21 framework) and 43% prospective teachers having medium level of literacy skills while 8% prospective teachers having low level of literacy skills which means that most of the prospective teachers having high level of literacy skills. (Table 4.2).
3. Majority of the prospective teachers which are 50% prospective teachers having medium level of life skills (related to life and career skill from P21 framework) and 41% prospective teachers having high level of life skills while 9% prospective teachers having low level of life skills which means that most of the prospective teachers having medium level of life skills. (Table 4.3).
4. Majority of the prospective teachers which are 48% prospective teachers having high level of transferring skills (related to learning and innovative skills from P21 framework) and 41% prospective teachers having medium level of transferring skills while 11% prospective teachers having low level of transferring skills which means that most of the prospective teachers having high level of transferring skills. (Table 4.4).
5. The null hypothesis is accepted that there is no significant difference between the 21st century skills of P.T.
6. There is no significant difference between the mean score of prospective teachers on learning skills from IIUI and NUML as the p value (.60) is higher than the level of significance (.05) and t value is (.52) (Table 4.5).
7. There is no significant difference between the mean score of prospective teachers on literacy skills from IIUI and NUML as the p value (.40) is higher than the level of significance (.05) and t value is (.84) (Table 4.6).

8. There is significant difference between the mean score of prospective teachers on life skills from IIUI and NUML as the p value (.04) is less than the level of significance (.05) and t value is (2.05) (Table 4.7).
9. There is no significant difference between the mean score of prospective teachers on learning skills from IIUI and NUML as the p value (.19) is higher than the level of significance (.05) and t value is (1.28) (Table 4.8).
10. The mean score of learning skills of prospective teachers of IIUI was 3.56 while the mean score of NUML was 3.6. It means that learning skills of NUML are little bit higher than the IIUI (Table 4.9).
11. The mean score of literacy skills of prospective teachers of IIUI was 3.5 while the mean score of NUML was 3.6. It means that learning skills of NUML are little bit higher than the IIUI (Table 4.9).
12. The mean score of life skills of prospective teachers of IIUI was 3.48 while the mean score of NUML was 3.68. It means that learning skills of NUML are little bit higher than the IIUI (Table 4.9).
13. The mean score of transferring skills of prospective teachers of IIUI was 3.52 while the mean score of NUML was 3.66. It means that learning skills of NUML are little bit higher than the IIUI (Table 4.9).
14. 32% prospective teachers from IIUI having high level of learning skills while 40% prospective teachers from NUML having high level of learning skills. 53% prospective teachers from IIUI having medium level of learning skills while 50% prospective teachers from NUML having medium level of learning skills. 15% prospective teachers from IIUI having low level of learning skills while 10% prospective teachers from NUML having low level of learning skills. It means that most of the prospective teachers having medium level of learning skills from both universities (Table 4.10).
15. 40% prospective teachers from IIUI having high level of literacy skills while 51% prospective teachers from NUML having high level of learning skills. 51% prospective teachers from IIUI having medium level of literacy skills while 40% prospective teachers from NUML having medium level of literacy skills. 8% prospective teachers from both universities having low level of literacy skills. It means that most of the prospective teachers from IIUI having medium level of literacy skills and most of the prospective teachers from NUML having high level of literacy skills (Table 4.11).
16. 42% prospective teachers from IIUI having high level of life skills while 56% prospective teachers from NUML having high level of life skills. 47% prospective teachers from IIUI having medium level of life skills while 38% prospective teachers from NUML having medium

level of life skills. 8% prospective teachers from IIUI having low level of life skills while 7% prospective teachers from NUML having low level of life skills. It means that most of the prospective teachers from IIUI having medium level of life skills while most of the prospective teachers from NUML having high level of life skills (Table 4.12).

17. 44% prospective teachers from IIUI having high level of transferring skills while 40% prospective teachers from NUML having high level of transferring skills. 42% prospective teachers from IIUI having medium level of transferring skills while 46% prospective teachers from NUML having medium level of transferring skills. 13% prospective teachers from both universities having low level of transferring skills. It means that most of the prospective teachers from IIUI having high level of transferring skills while most of the prospective teachers from NUML having medium level of transferring skills (Table 4.13).

18. 29% prospective teachers having low confidence which are hindering in achieving learning skills. 26% prospective teachers having low vocabulary as a learning challenge. 24% prospective teachers having less concentration on learning. 12% faced the challenge of less facilities. 9% prospective teachers having lack of ideas. It means that most of the prospective teachers having low confidence which are hindering in achieving learning skills (Table 4.14).

19. 30% prospective teachers having burden of doing other tasks. 21% prospective teachers having inadequate knowledge which are hindering in achieving literacy skills. 19% prospective teachers having time constraints challenge. 18% prospective teachers faced the challenge of lack of resources. 12% prospective teachers faced the challenge of less facilities. It means that most of the prospective teachers facing the challenge of burden of doing other tasks which are hindering in achieving literacy skills (Table 4.15).

20. 35% prospective teachers faced time management issues. 24 % students are unable to balance tasks in their lives. 18% prospective teachers having no critical analysis ability which are hindering in achieving life skills. 12% prospective teachers having short temperedness and 11% prospective teachers having less confidence. It means that most of the prospective teachers faced time management issues which are hindering in achieving life skills (Table 4.16).

21. 33% prospective teachers having difficulty in explaining. 21% prospective teachers are unable to handle diverse students. 20% prospective teachers having lack of ideas which are hindering in achieving transferring skills. 15% prospective teachers unable to communicate in a group. 11% prospective teachers having less knowledge of subject which are hindering in achieving transferring skills. It means that most of the prospective teachers have difficulty in explaining the concepts. (Table 4.17).

5.3 Discussion

According to the findings of the study, prospective teachers from IIUI and NUML having medium level of learning skills which should be improvised. Prospective teachers from IIUI having medium level of literacy skills while prospective teachers from NUML having high level of literacy skills. So, the prospective teachers from IIUI need to be improvised their literacy skills. In the same way, prospective teachers from IIUI having medium level of life skills while prospective teachers from NUML having high level of life skills. So, the prospective teachers from IIUI need to be improvised their life skills. Prospective teachers from IIUI having high level of transferring skills while prospective teachers from NUML having medium level of transferring skills. So, the prospective teachers from NUML need to be improvised their transferring skills.

There are so many researches about 21st century skills but these universities have not been studied specifically. Previously, level of 21st century skills of prospective teachers has been studied, the study implies the importance of 21st century skills of prospective teachers with gender variables and found the female teachers are more competent than the male teachers about 21st century skills. The study suggests the continuous trainings for the professional development of Prospective teachers. According to this study, most of the prospective teachers have high level of 21st C.S (Yanel & Selucuk,2024).

In addition, the responses from open-ended questionnaire shows that the most of the prospective teachers having low confidence so that they are facing difficulty to achieve learning skills. so, their confidence level should be improvised. Most of the prospective teachers having too much burden of doing other tasks which is hindering in achieving literacy skills. most of the prospective teachers facing time management issues which is hindering in achieving life skills for them. Most of the prospective teachers are unable to handle diverse students. So, they should be improvised to achieve transferring skills. In the previous research, the obstacles that teachers face in implementing 21st century skills are related to their low level of understanding 21st century learning because there are still teachers who: Never attend the 21st century learning training. Some of the teachers Do not understand 21st century learning. Schools do not provide facilitation and assistance to implement 21st century learning. Teachers have overloaded with multiple tasks (Hasbi, 2022). The present study are totally different findings from them. In the same way, according to the research of (Khahro, & Javed, 2022), having totally different findings from the present study. They enlisted the challenges, i.e. declining of students' enrollment, technology addiction, financial difficulties etc. According to the study of (Rusdin

& Ali, 2018), the challenges regarding 21st century skills were lack of resources, time constraints and inadequate knowledge.

According to the research study by (Herlinawati, 2024), 4C's skills should be implemented in curriculum but there are some problems in integration of 4C's skills i.e. time constraints, lack of resources, class room management and lack of training and support. The present study implies the overall challenges which hinder in achieving 21st C.S of P.T. Major variable of the study was P.T and the main focus of the study was to know the challenges which hinders in achieving 21st C.S of P.T so that the level of 21st C.S of P.T can be improvised. In the same way, according to the research study by (Shah,2013), the challenges of 21st century education were unemployment, poverty, political unwillingness, corruption and unawareness of teachers. The findings of the present study are different from previous because most of the studies only focus on 21st century skills and some studies focus on learning challenges. So, the focus of this study was to find the challenges which are hindering in achieving 21st century skills of prospective teachers.

5.4 Conclusions

Following conclusions were drawn according to the findings of study:

1. It is concluded that most prospective teachers demonstrated medium-level learning skills and life skills, indicating moderate proficiency in critical thinking, collaboration, and self-management and literacy skills and transferring skills were generally high, showing strong competence in information handling, media use, technology, and application of knowledge in new contexts.
2. It is concluded that there were no significant differences between IIUI and NUML in learning, literacy and transferring skills but the significant difference was found in life skills, NUML students scoring higher.
3. It is concluded that most of the prospective teachers have low confidence which are hindering in achieving learning skills. Most of the prospective teachers having over burden because of doing other tasks which are hindering in achieving literacy skills, most of the prospective teachers have time management issues which are hindering in achieving life skills and most of the prospective teachers having difficulty in explaining which are hindering in achieving transferring skills.

5.5 Recommendations

According to the findings of the study, following recommendations were given:

1. For the prospective teachers, it is recommended to institutions that they may organize skill development workshop to targeted training on confidence-building, public speaking, vocabulary enhancement and idea generation and for time management issue, institutions may provide seminars and tools to help students plan, prioritize, and balance tasks effectively.
2. Prospective teachers faced the challenge of burden of doing other tasks so, it is recommended to institutions that they may reduce non-essential workload to minimize excessive academic or administrative tasks that hinder literacy skill development.
3. Prospective teachers facing the challenge of less confidence, it is recommended to the teacher educators that they may pair the less confident students with peers who excel in communication and leadership and they may incorporate field projects, school visits, and real-world teaching experiences to strengthen life and transferring skills.

5.6 Recommendations for Future Studies

1. It is recommended that the study can be done in pure qualitative method to study about challenges. It will give the in-depth view of the study.
2. It is recommended to do comparison between public and private institutions because this study having public institutions and could not find significant difference. It maybe because of same methods of teaching in public universities.

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Learning Challenges in Achieving 21st Century Skills of Prospective Teachers

Questionnaire

I am the students of MS (Teacher Education) conducting the research on a topic Analysis of Learning Challenges in Achieving 21st Century Skills of Prospective Teachers. Please take a few minutes to complete this survey. I guaranteed that your specific answer will be kept confidential. Please note that your honest responses are very important for this research.

Demographic information:

Name(Optional): _____ Gender: _____ Institute: _____

Scoring key:

Strongly Disagree (SDA)= 1 Disagree (DA)= 2 Neutral (N)=3 Agree (A)=4

Strongly Agree (SA)=5

1. Learning skills

Sr. no	Statements	S.D.A	D.A	N	A	S.A
1.	I can create a task list.					
2.	I am helpful for the team in solving problems.					
3.	I can provide useful feedback.					
4.	I am helpful in resolving issues.					
5.	I always respect other's perspectives.					
6.	I can involve others in the task.					
7.	I can use time wisely.					
8.	I am able to work effectively with minimal supervision					
9.	I can change ideas and justify it.					

10.	I can evaluate my own reasoning.					
11.	I am able to understand difficult questions.					
12.	I can find relevant source of information.					
13.	I can use imagination to create new things.					
14.	I can create unique and different outputs.					
15.	I can employ brainstorming to generate original and unique ideas.					
16.	I speak professionally on different topics.					
17.	I create a clear and interesting discussion.					
18.	I can present all information clearly.					
19.	I can answer the questions logically.					
20.	I adapt a communication style appropriate to different situations.					

2. Literacy skills

21.	I have strong computer skill of using Microsoft Office.					
22.	I can use the internet resources wisely.					
23.	I can use digital media to create my own texts.					

24.	I can save, store and reuse information using ICT.					
25.	I can create slides, spreadsheet, documents and other important ICT tools.					
26.	I can use the various forms of educational technology effectively.					
27.	I am fully aware of teaching trends on digital media.					
28.	I can convey ideas by using a variety of methods.					
29.	Social media enhanced my literacy skills.					
30.	I am creative in developing solutions to problems.					
31.	I can work collaboratively with the team on any project.					
32.	I find difficulty in searching material for academic purpose.					

3. Life skills

33.	I can work well under pressure					
34.	I am able to cooperate with others.					
35.	I critically analyze the situation before acting upon it.					
36.	I am able to initiate conversation with others.					
37.	I can accept others' ideas.					
38.	I am able to make friends easily.					
39.	I can control temper in conflict situations.					

1. Transferring skills

40.	I can effectively manage operations like supervising the students.					
41.	I can demonstrate diplomacy and patience in dealing.					
42.	I collaborate in a team endeavor.					
43.	I am having strong work ethics.					
44.	I am skill negotiator; able to resolve differences in ideas.					
45.	I can transfer my knowledge and skills with students through my teachings.					
46.	I can manage people and resources.					
47.	I can easily resolve conflicts when working in a group.					
48.	I have the ability to make strategic plan.					

Learning Challenges in Achieving 21st Century Skills of Prospective Teachers**Interview Questions**

I am the students of MS (Teacher Education) conducting the research on a topic Learning Challenges in Achieving 21st Century Skills of Prospective Teachers. Please take a few minutes to answer interview questions. We guaranteed that your specific answer will be kept confidential. Please note that your honest responses are very important for this research.

Demographic Questions:

Q1. Name: _____(Optional)

Q2. Institution: _____

Questions:

Q1. What are the challenges that you are facing in achieving learning skills?

Q2. What are the challenges that you are facing in achieving literacy skills?

Q3. What are the challenges that you are facing in achieving life skills?

Q4. What are the challenges that you are facing in achieving transferring skills?

Q5. Give some suggestions to overcome the challenges that are hindering in achieving 21st century skills?

CERTIFICATE OF VALIDATION

Research Title: "Learning Challenges in Achieving 21st Century Skills of Prospective Teachers"

By Mehwish Bashir, MS Scholar

This is to certify that the attached research instruments developed by Mehwish Bashir, MS scholar in Teacher Education from International Islamic University, Islamabad, have undergone thorough validation by me. It is affirmed that the instruments, designed in alignment with the research objectives, meet the standards for adequate face and content validity. The research instruments, which include:

1. Close-ended Questionnaire for Prospective Teacher (quantitative tool)
2. Open Ended Questionnaire for Prospective Teacher (qualitative tool)

The above tools have successfully passed the examination and have proven substantially helpful for her thesis.

CERTIFIED BY:

Name: Dr. Humaira Akram

Designation: Assistant Professor

Institution: Teacher Education IIU

Department: _____

Signature: 

Date: 04-11-2024

CERTIFICATE OF VALIDATION

Research Title: "Learning Challenges in Achieving 21st Century Skills of Prospective Teachers"

By Mehwish Bashir, MS Scholar

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1. Close-ended Questionnaire for Prospective Teacher (quantitative tool)
2. *Open Ended* Questionnaire for Prospective Teacher (qualitative tool)

The above tools have successfully passed the examination and have proven substantially helpful for her thesis.

CERTIFIED BY:

Name: Dr Fauzia Ahmad

Designation: Assistant Professor

Institution: IIU

Department: Teacher Education

Signature: *[Signature]*

Date: 15/11/2024

CERTIFICATE OF VALIDATION

Research Title: "Learning Challenges in Achieving 21st Century Skills of Prospective Teachers"

By Mehwish Bashir, MS Scholar

This is to certify that the attached research instruments developed by Mehwish Bashir, MS scholar in Teacher Education from International Islamic University, Islamabad, have undergone thorough validation by me. It is affirmed that the instruments, designed in alignment with the research objectives, meet the standards for adequate face and content validity. The research instruments, which include:

1. ~~Close-ended~~ Questionnaire for Prospective Teacher (quantitative tool)
2. *Open Ended* Questionnaire for Prospective Teacher (qualitative tool)

The above tools have successfully passed the examination and have proven substantially helpful for her thesis.

CERTIFIED BY:

Name: Dr. Fatima Majeed
Designation: AP
Institution: IUI
Department: ELM
Signature: [Signature]
Date: 18/12/24

CERTIFICATE OF VALIDATION

Research Title: "Learning Challenges in Achieving 21st Century Skills of Prospective Teachers"

By Mehwish Bashir, MS Scholar

This is to certify that the attached research instruments developed by Mehwish Bashir, MS scholar in Teacher Education from International Islamic University, Islamabad, have undergone thorough validation by me. It is affirmed that the instruments, designed in alignment with the research objectives, meet the standards for adequate face and content validity. The research instruments, which include:

1. Close-ended Questionnaire for Prospective Teacher (quantitative tool)
2. *Open Ended* Questionnaire for Prospective Teacher (qualitative tool)

The above tools have successfully passed the examination and have proven substantially helpful for her thesis.

CERTIFIED BY:

Name: Dr. Fatima Bateel

Designation: AP (TE)

Institution: IIU

Department: Teacher Education

Signature: *(Signature)*

Date: 19/12/2024