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## Uncovering Teachers' Perceptions, Overcoming Barriers, and Introducing an Effective Framework for Incorporating and Evaluating 21st Century Skills in Classrooms

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**Abstract:** *This study explores the effectiveness of 21st-century soft skills, namely communication, collaboration, critical thinking, and creativity (4Cs) in education. The study adopts a narrative design and targets ten school leaders and teachers as the purposively sampled participants. The semi-structured interviews focused on assessing the effectiveness of the 4Cs and identifying barriers to their implementation. The findings indicated that the participating leaders and teachers recognize the significance of the 4Cs in educational settings. Critical thinking is identified as essential for problem-solving, effective communication as a two-way exchange of ideas, collaboration for teamwork and achieving common goals, and creativity for innovative thinking. However, challenges were identified, including time constraints, lack of professional development, and resistance to change among teachers. Students' lack of motivation and difficulties in assessing outcomes associated with the 4Cs were also recognized as barriers. To address these challenges, the study proposed a framework for incorporating and evaluating 21st-century skills.*

**Key Words:** 21st-Century Skills, 4Cs, Classroom Practice, School Education, Framework for 4Cs

### Introduction

There are many ways to think about the enormous educational issues of the twenty-first century (Amin et al., 2022). Employers are placing an emphasis on employees with new skill sets as a result of the pervasiveness of digital technology, the evolution of interpersonal communication, and the increase of global rivalry (Fox et al., 2018). As a result, educational systems struggle to deliver the

required constant training to students in order to develop these skill sets.

Students in the twenty-first century must be capable of not just good communication, but also the remaining Cs of the infamous "4Cs": critical thinking, collaboration, and creativity (Ford & Berrang-Ford, 2016). According to Kembara et al. (2019), the capacity to communicate and interact with others, regardless of origin or cultural customs, is a

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crucial talent in the linked and multicultural world of the twenty-first century. Many of the fastest-growing jobs and sectors rely on individuals' creative talents; hence, training children to think critically and creatively prepares them to think outside the box, question the masses, create new landscapes, and generate excellent work. Students' critical thinking and problem-solving abilities enable them to assess assertions presented by many sources, such as the internet, the media, parents, instructors, employers, and peers (Kembara et al., 2019). Students that possess these abilities are better able to critically assess and evaluate information, make educated judgments, and take constructive action. Furthermore, these abilities help pupils to recognize issues, suggest potential answers and courses of action, and assess alternate possibilities if one solution or tactic proves unproductive. These abilities prepare students for the rigours of higher education and the workplace, as well as lifelong success. Lastly, students' future preparation is considered the key emphasis of these abilities.

As per Hendy (2017), teachers have a huge effect on their students' development in a variety of ways. They not only set a positive example but also steer students in the correct way by offering sound guidance. Teachers must first analyse their students' existing ability levels in order to steer them toward the best practices. Furthermore, they teach

students skills including effective communication, empathy, planning, and public speaking. Teachers are the ones that push their students to grow in all areas and help them achieve their goals (Hendy, 2017).

Despite the fact that many national and international educational initiatives and institutions have explicitly included the development of new types of skills on their educational agendas, practical means of assessing such skills remain underdeveloped, impeding the valuation of these skills and the development of relevant pedagogy especially in the context of Pakistan (Anis, 2020).

Pakistan's existing educational system and curriculum are insufficient to satisfy the needs of today's students since the standards utilized to establish the curriculum are outdated and out of pace with the needs of the modern world. These outdated criteria, however, have grown obsolete as the labour market has developed. As a result, urgent educational reform is essential to better serve today's students and prepare them for tomorrow's jobs. Given this, the aim of this study was to learn about teachers' opinions on the 4Cs and the implementation issues they have faced in classroom practice. In addition, based on the challenges and possibilities indicated by teachers, a holistic framework for applying and assessing these 21st-century skills in Pakistan has been proposed by the researchers.

## Literature Review

### P21 Literacy Framework

Figure 1

*P12 Literacy Framework retrieved from (Partnership for 21st Century Skills, 2015)*



Figure 1 illustrates the "4C Skills" proposed in 2007 by the Partnership for 21<sup>st</sup> Century Skills Learning (P21). The "4C Skills" are a collection of competencies that are distinct from but complementary to subject matter knowledge and core topic learning, establishing a clear distinction between interdisciplinary themes and core topic learning (Partnership for 21st Century Skills, 2007). The Partnership for 21<sup>st</sup> Century Skills Learning (2015) asserts that the 4C skills can assist students not only in achieving academic success but also in adapting to a dynamic and uncertain society.

While there is considerable debate over what it means to have 21st-century skills, most agree that it refers to what students can accomplish with information and how they use what they learn in real-world circumstances (Khoiri et al., 2021). The following sections of the article discuss each "C" of the 4Cs in detail:

### Communication

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Strong communication skills imply the capacity to express yourself clearly in a number of circumstances, whether vocally, in writing, or via body language (Kyaw et al., 2019). Goal-directed motivation, as well as perceptual, cognitive, emotional, and behavioural activity, are required for effective communication (Kivunja, 2015). Empathy, understanding, and active listening are all components of effective communication, as is the capacity to examine and convey ideas and points of view in a warm, non-judgmental, and acceptable manner, as well as respect for the dignity, integrity, and autonomy of others (Limna et al., 2022; Saragih et al., 2021). This study hence explored perceptions of Pakistani teachers regarding what steps they take to incorporate and evaluate communication skills in classroom practice.

### Collaboration

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Collaborative learning is an educational technique in which students engage with one another and benefit from one another's knowledge, abilities, and views (Arthaud et al.,

2007). Collaboration, like assertiveness, responsibility, and empathy, is seen as a social skill (Limna et al., 2022; Saragih et al., 2021). Individual efforts must give way to collaborations, and autonomy must give way to the community in order to successfully solve crucial concerns (Lai et al., 2017). In order to confront the problems of the modern world and compete for educational and job possibilities, students must be able to communicate and share ideas and information. Hence, this study explored Pakistani teachers' perceptions about the incorporation and evaluation of collaboration skills in classroom practice.

### Critical Thinking

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Critical thinking is defined as the ability to weigh the merits of competing arguments or pieces of information before determining what to believe or do. It is a mental tool that assists pupils in critically investigating their own practises and preconceptions (Alsaleh, 2020; Behar-Horenstein & Niu, 2011). Students who practise metacognition (or "thinking about thinking") are more likely to have high-quality mental processes. Critical thinkers assess the consequences of their thinking, such as the merits of a suggested solution to a problem or the acceptability of a chosen choice (Imam et al., 2023). Critical thinking abilities are linked to a number of other significant student learning outcomes. These include metacognition, motivation, teamwork, and creativity. This implies the importance of incorporating and evaluating critical thinking skills in classroom practice. Hence, the study explores the perceptions of Pakistani teachers regarding 21<sup>st</sup>-century skills.

### Creativity

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Although scholars differ on what creativity is, the majority agree that it is a pleasurable experience for students and that it entails the development of something original or valuable in a certain social context (Henriksen et al., 2018; Urooj & Farooq, 2023). According to Zhou (2018), the end product of creative thinking might range from a tangible object to

a fresh perspective or style of thinking. Based on the reviewed literature the importance of creativity among the 21<sup>st</sup> century skills cannot be denied. Hence, the study explored the perceptions of Pakistani teachers regarding incorporating and evaluating creativity skills in classroom practice.

### Research Questions and Objectives

The research questions of this study are:

- 1) What are the perceptions of teachers about incorporating 4Cs in classroom practice?
- 2) What are the barriers that hinder teachers from incorporating 21<sup>st</sup>-century skills in classroom practice?
- 3) How can a framework be developed and implemented to effectively incorporate and evaluate 21st-century skills in classroom practice?

### Methods

The researchers conducted the study at a private school in Lahore, Pakistan with approximately 80 academic staff members and 650 students between the ages of five and sixteen. The academic staff included classroom and subject teachers, as well as the senior and middle leadership. The school has 10 academic staff members who hold leadership positions. The senior leadership team consists of the Principal, the Head of the junior school, the Head of the middle school, and the Head of the senior school, who oversee the administrative aspects of the school.

Purposive sampling was used to select participants based on their knowledge, position, and tenure at the school (Sim et al., 2018). A total of 10 participants were chosen (Male=5 and Female =5) as a sample of the study that belonged to two groups of leaders and teaching staff as mentioned earlier.

Table 1

Demographic Profile of Participants

Participant	Gender	Position	Qualification	Experience in (Years)
P1	Male	Math Teacher, Head of Middle School	Master of Science in Mathematics	5
P2	Male	Urdu Teacher	MA Urdu	18
P3	Female	Principal	MPhil Biochemistry	25
P4	Female	Head of Junior School	Master of Education	13
P5	Male	Science Coordinator	Master of Science	13
P6	Female	Physics Teacher	BSc Physics	13
P7	Male	Chemistry Teacher	BSc Physics	13
P8	Male	Exams Coordinator	Master of Commerce	17
P9	Female	Arts Coordinator	Master of Arts	12
P10	Female	Mathematics Teacher	Master of Science in Mathematics	10

The interview consisted of semi-structured questions with probing questions aimed at eliciting more detailed responses during the interview discussion. These questions were organized into themes related to the implementation of 4Cs in the classroom and the challenges and barriers that hinder the integration of 4Cs in classroom practice.

Before the interview, the participants were given a brief overview of the study and its procedures. They were also given the chance to ask clarifying questions. The leaders' and teachers' thoughts on their role in advancing 21st-century skills were gathered using an interview technique that provided insights into the effectiveness of the 4Cs.

The study was augmented by the researchers' in-depth interviews, which covered a wide range of issues. The goal was to make sure the participant interviews were suitable and provided a range of responses. During the interviews, the researchers made thorough notes in order to recall all that was stated. The researcher diligently sifted through all transcripts to discover common threads for the inductive theme analysis. The researcher used inductive coding in addition to deductive coding to obtain theory-driven codes that were compatible with the existing literature. In the meanwhile, the codes have been examined to verify that the data is consistent and correct.

## Results

The purpose of this study was to examine

teachers' perceptions of the importance of teaching their students the 4C skills (Communication, Collaboration, Critical Thinking, and Creativity). A content analysis of the transcripts of ten semi-structured and closed-ended interviews with teachers yielded the collected data. Teachers' identities are concealed by using participant identifiers (P1, P2, P3, P4, P5, P6, P7, P8, P9, and P10). In this investigation, researchers examined qualitative data using interview transcripts and thematic analysis. Tables 1 and 2 organise and analyse the major themes and subthemes of the study in light of its research questions.

**RQ1:** What are the perceptions of teachers about the challenges of incorporating 4Cs in classroom practice?

**Table 1**

*Alignment of themes and sub-themes with RQ1*

S. No	Themes	Sub-Themes
1.	Awareness of 4cs	i. Critical Thinking ii. Communication iii. Collaboration iv. Creativity
2.	Challenges Related to Teachers	i. Time Constraints ii. Lack of Professional Development iii. Teachers' resistance to change
3.	Challenges Related to Students	i. Lack of Student Motivation ii. Difficulty to assess student outcome

### Awareness of 4Cs

The 4Cs were highlighted in this theme: critical thinking, collaboration, communication, and creativity. The transcripts show that the participants were able to independently define the 4Cs and explain their personal experiences with the 4Cs. According to P6, all modern-day teachers must be skilled in the 4Cs. P9 concurred and stated, "*The 4Cs are something I'm familiar with and really believe in.*" (P9). Individual views on the 4Cs are discussed in the following sub-themes:

#### Critical Thinking

This sub-theme focuses on teachers' perceptions of critical thinking. Critical

thinking has long been recognised as an essential skill in education. Teachers are now asked to go above and beyond what they have historically done in the classroom, as underlined by national education systems, in order to assist their pupils acquire the critical thinking abilities they will need throughout their careers. As a result, before adopting the strategy with kids, teachers must thoroughly comprehend it. The first level of critical thinking is self-interrogation. Teachers must be capable of rigorous research and critical thinking in order to progress the subjects they teach. The majority of those who used this phrase defined critical thinking as a set of abilities for overcoming obstacles.



According to P3, critical thinking is important to find better solutions as *"Teachers who have improved their critical thinking abilities will be better able to deal with classroom issues. This will allow teachers to thoroughly evaluate any possible difficulties. Critical thinking will also help teachers spot issues. They are perceptive enough to recognise issues, reasonable in their requests for solutions, resourceful enough to gather facts for problem management, eloquent enough to explain and interpret, and decisive enough to act."* (P3)

Also, P8 has similar opinions. *"The goal of critical thinking is to find a new solution to an old problem. He went on to define teachers as problem-solving facilitators in the classroom, saying that "teachers "meet the needs of the teaching aims and should be able to stimulate the thinking level and eventually act as a facilitator to answer the uncertainties."* (P8)

According to all responders, critical thinking is the ability to seek and accept alternatives to one's own methods of thinking and problem-solving.

## Communication

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This sub-theme is mostly concerned with teachers' communication skills and interactions with pupils. Communication is a type of sharing in which educators share their thoughts, concerns, ideas, and potential solutions about the information presented in their classes. The twenty-first-century educator is generally seen as a skilled communicator. He or she is capable of confidently expressing their thoughts in front of groups, sharing information with others, and being adept with the required tools and technologies.

All participants perceived that communication is a two-way street in which information is exchanged. Writing, symbols, sounds, and persuasive speech are all examples of modes of communication. Only when both sides listen and accept the information flow from the other, communication takes place between teachers and students.

According to P2,

*"What I consider to be communication is the exchange of ideas between two or more people. In order to exchange ideas, resources, and strategies for enhancing education, teachers must communicate with one another."* (P2)

This statement was supported by P8 when he defined communication,

*"A procedure in which two people or a group of people share their ideas and views in order to complete a task or achieve a goal."* (P8)

## Collaboration

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This sub-theme is mostly concerned with teachers' skills to collaborate and induce collaboration among students. It is the responsibility of teachers to promote teamwork in the classrooms as shared by the participants. Teachers must be open to cooperation and exhibit friendliness, encouragement, and competitiveness. As a result, teachers who can successfully collaborate with their colleagues and students to achieve a common objective are critical to the success of any educational establishment.

According to P5,

*"Both teachers and students must be able to interact, communicate, and complete tasks efficiently."* (P5)

Many respondents expressed about collaboration as working together.

*"Collaboration is defined as working together as a team to complete a task. Everyone on the crew is treated with the utmost respect."* (P7)

The overall perception of participants was that when members of a group work together, they are all pulling in the same direction. When teachers and students work together, they have a common vision and goal for what the group can accomplish.

## Creativity

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The emphasis of this sub-theme is on teachers' individuality and innovation. The teachers come up with fresh, inventive ideas, go above and beyond what is expected of them, and motivate their students to do the same. The

activities associated with mastery of this skill must be consistent in schools according to the participants. Teachers improve both their own talents and their students' learning by developing their capacity for creative thought. To build anything, one must use their imagination or invent novel notions. Some participants gave generic responses to the question of inventiveness. It entails thinking, creating, and producing something in novel ways.

P8 said, *"One needs to look at things from a different angle in order to be creative."* (P8)

P5, another participant, provided a narrative that was nearly identical to P8. He said, *"Being creative means coming up with fresh approaches to solve old problems."* (P5)

Participants in the study agreed that creativity is a distinct talent exhibited by the formation of innovative views, the formation of previously unconnected connections, and the invention of novel solutions to problems.

## Challenges of Teachers

This theme addressed the challenges that teachers have when seeking to instil the 4Cs in the classroom. The 4Cs have been shown to have a significant impact on classroom performance. However, it can be difficult to incorporate these talents into a system or approach right away. Despite its success, all thirteen panellists agreed that there are a number of barriers to adopting the 4Cs. Potential explanations can be classified into the following categories.

## Time Constraints

This sub-theme focuses on the participants' assessment of the most difficult aspect of applying the 4Cs. A teacher is responsible for many things, including keeping their subject matter current to meet the needs of their students, correcting their materials, effectively presenting their content, planning and leading field trips, and introducing innovative methods to meet the needs of the current educational climate. Teachers struggle to balance their

many responsibilities due to the little time allotted for class preparation.

According to P8, it is difficult to fully leverage their skills because they are already stretched thin and overloaded with work. This makes it difficult to fully exploit their skills.

This was also described by P1, He revealed, *"Due to my many other responsibilities, there are times when I cannot implement the 4Cs in my classroom."* (P1)

Furthermore, P4 added her perception in this regard as,

*"There is not enough time in teachers' schedules to adequately integrate 4C-developing activities and projects."* (P4)

According to this study's participants, a lack of time to implement the 4Cs is perhaps the greatest obstacle associated with its implementation.

## Lack of Professional Development

When teachers were asked about the problems they have had adopting the 4Cs, a lack of professional development appeared as a sub-theme. After time restrictions, participants reported a lack of professional growth, training, and education on the 4Cs as the second most common challenge.

The participant P9 described,

*"...I blame a lack of training for teachers and administrators at all levels for the failure to foster students' critical thinking and creative problem-solving."* (P9)

When asked what they think is preventing teachers from implementing the 4Cs, several responses echoed P9's sentiments, saying things like,

*"... Maybe they just don't know enough about the situation or don't have the chops to make a call. They need to be reassured all the time that they are making the right decisions."* (P6)

Participants cited a lack of both training and education as a barrier; however, leaders should evaluate candidates' critical thinking skills, capacity to see beyond appearances,

creativity under pressure, and situational awareness before making any hiring decisions.

### Teachers' Resistance to Change

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"Resistance to Change" was mentioned by teachers as a typical issue when asked about barriers to improving students' 4Cs capabilities, such as their outward presentation and application in the classroom.

According to P2,

*"People appear to prefer isolation over forced socialisation, particularly in the field of education. Consequently, you will see a large number of individuals hanging out alone. They have no desire to cultivate an environment of mutual respect and cooperation." (P2)*

P7 also describe the resistance to change similar to P10,

*"Teachers do not evolve over time. They would rather remain in their comfort zone." (P10)*

According to the participants, one of the behaviours that considerably slow down the implementation of any educational reform is teachers' and other staff members' resistance to change. This could be one of the greatest barriers to the successful implementation of the 4Cs.

### Challenges Related to Students

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This theme concentrates on the challenges teachers face when attempting to implement the 4Cs (critical thinking, communication, collaboration, and creativity) with their students. The 4Cs are advantageous to students. If they are unable to produce something of value, they will have no interest in them. Participants reported that students frequently impede the implementation of the 4Cs. The subsequent subthemes investigate how students present an obstacle or hindrance to using the 4Cs.

### Lack of Student Motivation

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The challenges that students provide to the effective use of the 4Cs are the subject of this sub-theme. If students are not intrinsically

driven to learn, it doesn't matter how qualified the teacher is, how engaging the content is, or how well-equipped the classroom is, as other participants have pointed out.

P3 investigated the negative impacts of low student motivation on 4Cs adoption,

*"If you want to think critically about anything, you have to care about it. If you don't give a damn, you won't bother putting in the work." (P3)*

P1 also agreed with P5 in the following words,

*"The benefits of 4Cs may not be readily apparent to students, particularly if they are unrelated to academic criteria such as grades." (P1)*

Furthermore, disinterested students can alienate other students from academics, which can have a negative effect on the classroom or institution as a whole.

### Difficulty in Assess Student Outcome

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The difficulty of measuring the impact of the 4Cs on student learning is central to this sub-theme. Participants cited as primary purposes of evaluation, assessing students' knowledge and skills, encouraging their development, and empowering them to make informed educational decisions.

P7 explained that these objectives do not align with 4Cs, making it challenging to measure 4Cs,

*"Focusing on these underlying goals may make assessing students' usage of the four Cs challenging for teachers. For example it is very hard to interpret as which C was attained by which objective" (P7)*

P9 agreed with P7 and explained this in the following way,

*"In order to succeed in today's environment, students must acquire new abilities. The education system in Pakistan would need a major overhaul to incorporate values like these." (P9)*

Participants also discussed the challenges they have encountered with assessment-based learning, such as evaluating student progress, resolving low engagement, identifying curricular overlap, leading classroom



discussions, and overcoming a general sense of anxiety regarding inquiry-based instruction.

**RQ2:** What are the barriers that hinder teachers from incorporating 21<sup>st</sup>-century skills in classroom practice?

**Table 2**

*Alignment of themes and sub-themes with RQ2*

4 Cs	Themes	Sub-Themes
a. Critical Thinking	1. Completion of Tasks on Time	i. Problem-Solving Mindset
b. Communication	2. Transparency	i. Student Feedback ii. Relating to each other
c. Collaboration	3. Teamwork	i. Learning from colleagues ii. Building cordial relations with others
d. Creativity	4. Innovation	i. Thinking outside of the box

### Critical Thinking

One of the most important aspects of critical thinking is the development of the capacity to examine and identify one's own biases and preconceptions. Assessing claims, identifying objections, and coming up with workable counterarguments, all while effectively communicating one's own ideas and reasoning, are all necessary skills.

*"So, are they willing to step in and provide a hand in resolving the issue?" (P9)*

### Communication

In order to be successful in the digital age, today's educators must be skilled communicators. The extent to which students can effectively apply what they have learned is one criterion for evaluating their communication skills. This indicates the ability to express ideas and concepts politely and responsibly, interpret and comprehend ideas and information in verbal or nonverbal formats, and take into account the perspectives, emotions, and experiences of others while seeking common ground.

### Completion of Tasks

Participants agreed that on-time assignment completion was the most important factor to consider when assessing teachers' and students' critical thinking skills. This is indicative of one's level of self-control.

P4 talked about the importance of discipline in the completion of tasks as,

*"... Our lack of regularity and discipline in getting things done is indicative of the quality of our critical thinking." (P4)*

P3 stated, *"Teachers and students must communicate. If teachers and students cannot collaborate and reinforce their lessons, it may cause classroom issues. Then what? If students don't understand themes or feel they can't discuss them, teachers may face unsatisfied students, difficult student-teacher interactions, and even interpersonal hatred." (P3)*

### Problem-solving mind set

This sub-theme emphasised the significance of "critical thinking" skills for creating a safe and supportive learning environment through the problem-solving mindset.

Teachers emphasised the importance of developing students' critical and innovative problem-solving skills. In answer to a question on how students might develop their critical thinking skills, P9 asked a question.

### Transparency

One constant thread running across the discussions was the need of being open and honest while having conversations with others. Participants stressed the importance of teachers and students talking openly and clearly to one another.

P6 elaborated on the connection of transparency with communication as,

"I also think it has something to do with being open and honest about what's going on in the classroom without violating any professional boundaries." (P6)

The participants defined transparency in teaching and learning as "a set of teaching strategies aimed at making clear to students how and why they are learning and engaging with course content in specific ways," and they emphasised the significance of open communication channels in fostering this type of environment.

## Student Feedback

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Participants believed that obtaining student feedback in the middle of the term is preferable to waiting until the end of the term in order to assess how things are going and make any necessary adjustments to instruction while students are still learning from it.

P8 stated in his interview that student feedback is essential for the development of communication skills.

*"I believe the best method to make someone feel heard is to actively attend to and address their concerns."* (P8)

Similarly, when discussing student input, P4 suggested that designated time be allocated for student comments,

*"...Allow students some time in class to complete evaluations."*(P4)

The majority of participants believed that teachers should convey to their students how much they value sincere and constructive feedback and how they use it to improve their courses. When possible, teachers should provide examples of how they have modified courses in response to student feedback.

## Relating to Others

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The capacity to interact with others and cultivate a welcoming classroom environment was a recurring theme in the instructors' survey transcripts. Teachers believe it is crucial to create a secure environment in the classroom in which students and teachers can readily express their opinions.

P7 explained this as,

*"The most valuable thing I have learnt is the importance of understanding how we are all connected and how we communicate with one another."* (P7)

P2 agreed with P7 by saying,

*"You almost need to have a lot of empathy and understanding of the human psyche to interact with others properly. Having such an understanding with your kids is crucial."* (P2)

The participants in the 4Cs discussion concurred that communication is the discussion's overarching theme and the means by which teachers interact with one another and find solutions to problems. Participants reported that conversing with more people, bringing more expertise, and being able to incorporate a great deal more data to make better-informed decisions has resulted in increased openness and critical thinking.

## Collaboration

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Future and present teachers must be able to work well with others. In this study, we looked at how well people collaborate to achieve a common goal, how well they trust one another, how well they respect and understand diverse cultures, audiences, and/or contexts, and how well they respect and value the input, accessibility, and compromise of others to foster productive working relationships.

## Teamwork

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This theme became apparent when discussing "collaboration" and "ability to work together" as essential components of the 4Cs. Participants emphasised that it will be difficult to establish a comprehensive and functional team environment and culture in schools without "creating teams."

P5 related collaboration to the team in the following words,

*"It is the team; collaboration is honesty."* (P5)

Furthermore, P3 explained teamwork among teachers in the following words,

*"You may understand teachers' perspectives on education without putting too much emphasis*

on your own by working in a collaborative environment with them." (P3)

Participants agreed that while cooperation is essential for team growth, true collaboration requires paying attention to and acting on the ideas of all team members.

### Learning from Colleagues

It became apparent via the data gathering and interview procedure that one of the features of collaboration is learning from one's peers and co-workers. Observing and learning from other teachers is the only way to improve one's own practice.

In this regards P10 shared that,

*"Educators need to be open to working with and learning from other experts in their fields. (P10)*

In the words of P4, *"In my experience, schools fail when faculty members fail to communicate with one another and make no attempt to close knowledge gaps, such as those between teachers and administration."*

Participants also stressed teamwork and communication. Communication was recognized as the cornerstone of all healthy relationships, and it was accepted that it is the source of collaboration. As a result, do teachers embrace students from varied backgrounds? Are they able to work with and listen to teachers from other cultural backgrounds? Those interviewed had similar worries.

### Building Cordial Relations with students

Another subtheme is the significance of developing strong and fruitful relationships with the people who contribute the most to the success of an educational institution: the students. Participants emphasized the need of developing positive contact with youngsters in order to implant the 4Cs in them.

It was revealed by P7 that teachers' collaboration should be different with students as compared to their relations with colleagues. This was seconded by P11 as,

*"... Someone who is adept at working with others would have more in-depth talks with the*

*children. This would be distinct from inter-team communication or internal cooperation." (P11)*

Participants also stressed the need of developing caring relationships with students in order to inspire them to practice the 4Cs of critical thinking, creative problem solving, collaborative learning, and effective communication.

### Creativity

The fourth C, creativity, and how well it is prepared for use in 21st-century classrooms are the primary issues of this research. More freedom of expression and expression in the classroom, according to survey findings, benefits both students and teachers. Participants described that creativity can be implemented in a school culture with the efforts of principals.

### Innovation

Being imaginative is a natural outcome of creative activity. This theme arose as a result of the interest and desire of teachers to see their students utilizing their creativity in classes.

P1 expressed in this regard,

*"Hence, in my opinion, the higher the necessity for innovation, the more difficult the task..." (P1)*

One of the participants said that there have to be new approaches to education in order to improve student learning. *"I describe innovation as the investigation and development of fresh teaching methods that we give. Taking into account what our students desire and the greatest manner for them to learn." (P13)*

### Thinking outside of the box

Teachers need to use their imagination. Three of the participants told the researchers that they use their imagination and think outside of the box for problem-solving.

*"Critical thinking is assessing a topic from an alternate viewpoint or perspective, or even "thinking beyond the box." (P2)*

*"Thinking outside the box is a key component of creativity" (P4)*

Another respondent explained it as “Critical thinking is only one component of creativity. It is true that it is not about answering questions. Outside of the test, it is equally important to present reasonable or inventive arguments.” (P6)

Numerous participants concur that teachers may develop students' creative thinking by pushing them to "think beyond the box" with an "everything is possible" attitude.

**RQ3:** How can a framework be developed and implemented to effectively

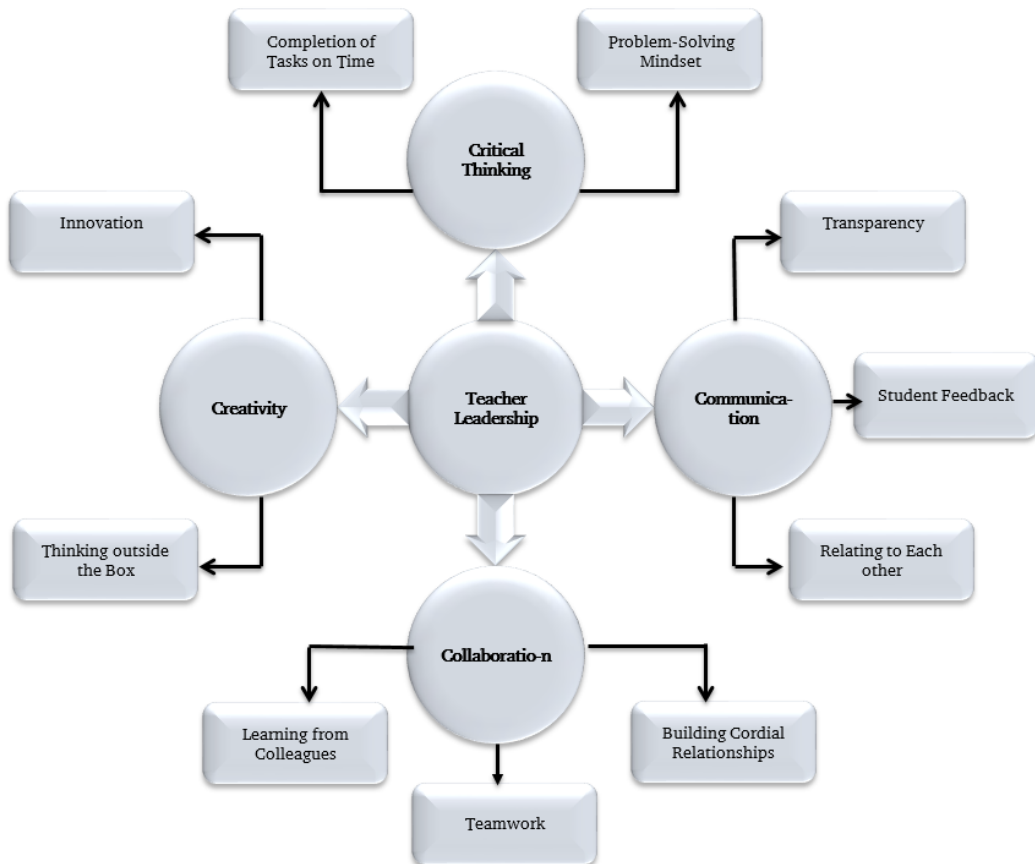
incorporate and evaluate 21st-century skills in classroom practice?

### Framework for Teachers to Incorporate and Evaluate 21<sup>st</sup> Century Skills in Classrooms

Based on the themes and sub-themes identified above following framework (Figure 2) has been recommended to Pakistani teachers in order to incorporate and evaluate 21<sup>st</sup>-century skills in classroom practice.

**Figure 2**

Framework for incorporating and evaluating 21<sup>st</sup>-century skills



#### Critical Thinking

##### Problem-Solving Mind-set

Encourages students to approach challenges with a solutions-focused mentality and the

ability to analyse problems from multiple perspectives.

##### Timely Completion of Tasks

Emphasizes the importance of effective time

Management and prioritization skills to meet deadlines and achieve goals.

### **Communication**

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#### **Transparency**

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Promotes open dialogue and sharing of information between students, teachers, and other stakeholders to create a supportive learning environment.

### **Student Feedback**

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Encourages active participation and input from students to improve the educational experience and foster a sense of ownership.

### **Relating to Each Other**

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Emphasizes empathy, active listening, and understanding to establish meaningful connections between students and educators.

### **Collaboration**

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#### **Building Cordial Relationships**

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Fosters a positive learning environment that supports interpersonal relationships and mutual respect among students and educators.

### **Teamwork**

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Encourages group efforts and shared responsibilities to accomplish tasks, harnessing the unique strengths of each individual.

### **Learning from Colleagues**

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Supports peer-to-peer learning and the exchange of knowledge, ideas, and experiences to enrich the educational process.

### **Creativity**

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#### **Innovation**

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Inspires students to explore new ideas, think critically, and generate original solutions to problems.

### **Thinking outside the Box**

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Encourages students to challenge conventional wisdom, question assumptions, and develop unconventional approaches to problems.

### **Conclusion**

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In conclusion, this research study provides insights into teachers' perceptions of the importance of teaching 21st-century skills, specifically the 4C skills. The findings highlight the challenges faced by teachers in incorporating the 4Cs and propose strategies to address these challenges.

This research has practical implications. Educational institutions should prioritize meaningful professional development programs for teachers, equipping them to integrate the 4Cs effectively. Stakeholders should recognize the importance of integrating the 4Cs into the curriculum, supported by clear objectives and guidelines.

By addressing these challenges and implementing the proposed strategies, educators can create learning environments that cultivate 21st-century skills. Students will develop critical thinking, communication, collaboration, and creativity abilities necessary for success in a complex world. This research contributes to the ongoing conversation on 21st-century skills, informing educators, policymakers, and researchers striving to enhance teaching and learning practices.



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