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Exploring the Influence of 21st-Century Skills on Educational Practices: How Teaching Critical Thinking, Collaboration, and Digital Literacy is Shaping Modern Classrooms

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Abstract: This paper examines how critical thinking, collaboration, and digital literacy are being incorporated into the classroom contexts and how these necessary 21st-century competencies are being instructed, graded and viewed by teachers and learners. Observations were conducted in the classroom, interviews were held with the teachers, as well as the analysis of documents in two secondary schools, and the results could give us an idea about the challenge of integrating skills and the frequency and quality of the processes. The results are that, although digital literacy has the most integrated and well-received skills, critical thinking and collaboration have a lot of challenges associated with teacher preparedness, resource constraints and curriculum inflexibility. The activities most often implemented and the most satisfactory in terms of student engagement and their performance were those that concerned digital literacy. Conversely, critical thinking and collaboration were also not as often instructed, and teachers showed an intermediate level of confidence and acted more often in collaboration. The research paper reveals the necessity of working on specific professional growth, the change of curriculum, and the allocation of more resources towards the accommodations of the 21st-century skills in the classroom, such that the students would be ready to possess the competencies that would ensure their success in the rapidly transforming world.

Keywords: 21st-century Skills, Critical Thinking, Collaboration, Digital Literacy, Classroom Integration, Teacher Preparedness, Student Engagement, Educational Practices, Professional Development, Curriculum Reform

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Introduction

The 21st century has seen a radical shift in the frontiers of the education sector, which has been enabled by the enhanced resources of technology, globalisation, and the dynamics in the workforce requirements. When the traditional teaching (depending mostly on memorisation and content recollection) tends to become less and less sufficient to equip the students with future orientation, a renewed focus on 21st-century talents (Saavedra & Opfer, 2012) has arisen. The given skills are considered what students would need in order to succeed in the constantly evolving world, and it is regarded as an interface between the academic and practical capabilities (Partnership for 21st Century Learning [P21], 2019). Some of the most important of these skills include critical thinking, collaboration, and digital literacy, and they are all influencing the contemporary classroom and teaching process (Voogt et al., 2015).

A critical thinking concept means the thoughts provided under the ability to think in a reflective and autonomous manner, analyze information rationally and make rational judgments on the basis of information (Facione, 2015). The

development of critical thinking is a key objective in educational environments, and teachers aim to develop an atmosphere that would encourage the students to question, analyse, and evaluate information as opposed to memorising facts (Kuhn, 2015). Collaboration, in turn, lays stress on collaboration with other people, effective communication, and problem-solving jointly. It includes the ability to negotiate, embody a wide range of teams, and find functions in diversified ones, which are not only required in academic life but also in professional life (Johnson & Johnson, 2014). Teamwork has been noted to be among the most important skills that students should learn, and this facet goes hand in hand with the social and professional skills necessary in the world today (Saavedra & Opfer, 2012).

A digital literacy skill is probably the most radical of them all, as it directly influences the capacity of students to manoeuvre and manage the evolving technology-based world (Beetham & Sharpe, 2013). Literacy in the digital age goes beyond being able to read and write; it is being able to access, assess, and generate digital information, and being able to make use of technology that is both critical, ethical and productive (Livingstone, 2012). With the adoption of digital tools being a part of virtually every aspect of life in contemporary reality, digital literacy has become a core skill enabling students to be ready to seize future opportunities, in academia or employment (European Commission, 2018).

The role of these 21st-century skills has been acknowledged within educational systems worldwide, and efforts are underway to include these skills in the curricula. Nonetheless, the implementation of these skills in the classroom is highly diverse geographically, through the school system, or even within a single classroom (Voogt et al., 2015). Rarely is critical thinking, collaboration, and digital literacy taught comprehensively or extensively, as in most instances, teachers are not equipped with the resources, training, and support requisite to implement such skills in their teaching (Zhao, 2012). The discrepancy in implementation also brings up some pertinent questions regarding the effectiveness of the existing educational practices in training students to address the challenges of the future and the effectiveness of the process of integration of these skills.

Studies have identified various challenges to the successful teaching of 21st-century skills. There will be a lack of teacher professional development, integration of skills in assessments and extreme reliance on traditional content-based curricula (Saavedra & Opfer, 2012; Zhao, 2012). An example that can be provided is that whereas other schools have oriented on project-based learning and inquiry-based instruction as a means to teach critical thinking and collaboration, not many classrooms have yet adopted mobile student-directed learning due to their traditional orientations to teacher-centred teaching (Kuhn, 2015). Further, a fast change in technology is another challenge in the sense that most schools have difficulties trying to keep pace with the emerging digital tools and sites that are needed to develop digital literacy (Beetham & Sharpe, 2013).

Nevertheless, the issue of 21st-century skills redefining educational practice is still important despite these difficulties. It is stated that an educational model combining the ideas of critical thinking, teamwork, and digital literacy can better equip students with the challenges of the contemporary world (Johnson & Johnson, 2014; Facione, 2015). With the emphasis on these skills, teachers may provide students with the tools that would allow them to not only excel in their studies but also become responsible and active members of society. Nevertheless, attaining this vision involves systemic shifts in the manner in which schools handle teaching and learning activities, such as reform of curriculum, teacher education and development, and developing assessment systems that focus on the skills and not the memorisation of content (Zhao, 2012).

The paper presents the impact of teaching critical thinking, collaboration, and digital literacy on contemporary forms of teaching. It evaluates how these skills can be implemented in classrooms, the hurdles faced by teachers and the results achieved in those schools where these skills have been given priority. The paper intends to outline the significance of 21st-century skills in determining the future of education and also provide some insights into why educational systems can be better utilised in developing the necessary skills.

Literature Review

In recent years, the mainstream of research studies has been on the integration of 21st-century skills in educational practices, and both scholars and educators have largely stressed the need to equip students for a world that is becoming more and more complex and rapidly changing. Here, the literature review on three of the main 21st-century skills, such as critical thinking, collaboration and digital literacy, will be discussed and how they are being applied in modern educational practices.

Critical Thinking in Education

One of the skills that has been considered to be fundamental in working around the intricacies of modern life is critical thinking. Already in the 1940s, such scholars as Dewey (1933) highlighted the significance of reflective thinking in education, implying that the learning process should be an active, engaging activity in which students should be able to break down information, analyse it, and synthesise it. Critical thinking has been a cognitive ability applied in 21st-century education, but it is a vital part of intellectual and personal growth (Ennis, 2011). Due to the constantly growing and intricate issues of the global economies and societies, the ability to perceive critically is regarded as the basis of informed decision-making and problem-solving.

According to recent studies, even after the general recognition of the essential role, critical thinking is still not developed among most classrooms across the globe (Paul & Elder, 2014). A number of investigations have presented gaps in conceptualisations and teaching of critical thinking. In this case, Lipman (2003) provides the argument that educators tend to regard critical thinking as equivalent to lower-level skills (memorisation, recalling facts) instead of a higher plane of reasoning and questioning assumptions, analysing arguments, and formulating sound judgment. It is observed in a study by Abrami et al. (2008) that though most curricula include critical thinking, its use most of the time is superficial and it does not involve intensive thought in students.

Also, a number of obstacles continue to instil critical thinking in educational systems. Willingham, (2007) explains that students, in most cases, are not taught how exactly they should make critical thinking in order to develop critical thinking skills. To promote the elements of critical thinking, such as analysis, synthesis, and evaluation, teachers often do not have the pedagogical resources to create activities that promote the above-mentioned cognitive processes. Moreover, critical thinking has been an issue of concern since most assessment techniques emphasise content instead of the interaction of the students with the knowledge content (Aikenhead, 2006). Such a dissociative nature of instruction and assessment can be a barrier to critical thinking in learners.

Collaboration as a Key 21st-Century Skill

Teamwork is a necessary art in the modern globalised world, and employers are more focused on the core values of cooperation and interpersonal relationships in the new workplaces. Collaboration, as it is applied in the sphere of education, is viewed as the possibility to work together with others to complete common objectives. It encompasses not just social skills, which include: communication, negotiation and empathy, but also cognitive skills, which include: the ability to co-construct knowledge and to be able to solve problems together (Dillenbourg, 1999).

In the literature, it can be seen that collaboration is also becoming a part of present pedagogies, including project-based learning and inquiry-based teaching, where students are collaborating to learn about real-world problems. Research has established that team learning has the potential of enhancing problem-solving skills, promoting creativity and enhancing student involvement (Johnson & Johnson, 2009). Indicatively, research by Gillies (2016) led to the observation that cooperative learning patterns enhanced positive academic achievements and social bonds amongst the students.

But there are no challenges to implementing collaboration in the classrooms. Among the important obstacles, it is important to discuss the predisposition of the group work to become controlled by a certain number of more vocal group members, and others are going to be silent or inactive individuals (Slavin, 2014). When this happens, the positive impact of collaboration will be denied to its potential, and some students even report having lower motivation or self-esteem. To alleviate these problems, scholars like Webb (2009) have placed emphasis on the fact that collaboration

should be structured with roles being clearly distinguished, in which every student is expected to play a part towards the success of the group.

Additionally, although there is an increasing popularity of collaboration as a necessary skill, its successful implementation in the classroom is highly dependent on the experience of the teacher and the classroom conditions. As well as offering collaboration opportunities, teachers should offer information on how students can collaborate with one another. This needs particular teacher training, which will enable them to have the strategies to support and ensure that collaborative learning takes place and is also assessed in various classrooms.

Digital Literacy and the Changing Landscape of Education

Digital literacy in its broad concept, i.e. the capacity to access, analyse, judge and create information with the help of digital technologies, has become an essential competence of the 21st century. The role that technology is playing in influencing every aspect of life, including communication, business, and entertainment, is making digital literacy to be regarded as a basic requirement of personal and professional development (Hague & Payton, 2010). Social media and the emergence of the internet, and other digital means, have introduced a new and unparalleled demand on the individual to critically consume information in a digital space.

The digital literacy literature highlights that it has a part to play in academic performance and lifelong learning. The European Commission (2013) does not refer only to the knowledge of technology usage as digital literacy, but to the knowledge of manoeuvring around digital spaces, observing digital information critically, and utilising digital tools to collaborate and create. Digital literacy in education does not only involve the use of computers by the students to seek information, but it is the ability of students to make effective use of technology as active participants, as opposed to becoming passive consumers of technology (Leu et al., 2011).

The inclusion of digital literacy in curricula has been proven to improve the engagement of students, their motivation, and success. To illustrate, the research conducted by Tondeur et al. (2017) has proved that the integration of digital literacy programs in classrooms helped increase collaboration among students and the quality of their problem-solving. Nevertheless, even though it has these advantages, digital literacy has not been fully adopted in the education systems. According to Robinson & Stubberfield (2014), in research studies, it was argued that although a number of schools had been successful at the implementation of technology in teaching, a number of schools are still lagging behind because of such factors as lack of sufficient infrastructure, teacher training and reluctance to change.

The other problem that is mentioned in the literature is the expanding digital divide that has the potential to deepen disparities in educational performance. Warschauer (2011) states that in certain schools with under-resources, students might not have access to technologies and other digital tools that serve as a prerequisite for developing digital literacy. The difference brings up key questions regarding the ways that educational systems can provide equal opportunities to all students, irrespective of socioeconomic status, when it comes to accessing the opportunities of digital literacy.

Challenges in Implementing 21st-Century Skills in Education

Although it can be readily agreed that teaching critical thinking, collaboration, and being digitally literate is essential, the literature also demonstrates a number of issues associated with introducing the skills successfully in the classroom. Tension between the traditional content-based curricula and skills-based curricula demanded by 21st-century learning is one of the major problems. Since most educational systems are still focused on standardised testing and covering of the content, little time or space is usually left to develop critical thinking, teamwork and digital literacy (Zhao, 2012).

Besides, the preparedness of the teacher is also a major obstacle. Research has been conducted to find out that a lack of training and professional growth makes many teachers feel unready to impart skills that are relevant in the 21st century (Saavedra & Opfer, 2012). The lack of adequate support means that the teachers will be unable to apply new innovative pedagogies and incorporate new skills into the teaching process. This is further aggravated by a shortage of resources, including access to technology, which is vital in educating about digital literacy (Beetham & Sharpe, 2013).

Lastly, is the assessment practice another challenge? Multiple choice tests and other traditional types of assessment are not very useful in requiring critical thinking, collaboration and digital literacy. Researchers have also demanded that new assessment instruments should be developed with a better quality of capturing students in terms of their capacity to think at a higher level, work collaboratively, and effectively utilise digital tools (Hattie & Timperley, 2007).

The literature review can demonstrate that critical thinking, collaboration, and digital literacy contributed greatly to the development of contemporary educational practice. Although most people recognise their significance, the aspect of teaching these skills in the classroom is a tricky and arduous issue. Its successful implementation needs a change of strategies to the use of traditional methods of teaching and taking the initiative to engage in professional development of the teachers, reforms in the curriculum and providing enabling environments in learning. In addition, the assessment systems have to be changed to reflect more accurately the acquisition of these sets of skills by students. With the current transformation in the educational environment, it has been evident that developing 21st-century skills is paramount in equipping students to cope with the future changing environment.

Methodology

This study adopted a qualitative research design to examine how skills of the 21st century, such as critical thinking, collaboration and digital literacy, impact twenty-first-century learning processes. The major objective was to know how these abilities are being infused into the classroom instruction and the ways teachers are modifying their instructional approaches in order to promote these capabilities in students. The study was held in a real-life educational situation, and both the teachers and students were interacting and reacting to the changing pedagogical practices. The research design integrates observational studies, interviews with teachers and document reviews to come up with in-depth knowledge on the practices and the difficulties surrounding the teaching of such 21st-century skills.

Research Design and Context

It was conducted in two phases, but it was carried out over a period of six months in two secondary schools in an urban setting. The chosen schools have a diverse representation of students and various degrees of technological integration; it will make it possible to learn more about the application of 21st-century skills in different educational conditions. Classroom observations were the initial stage of the research, as the researcher was present in several classes (English, Science, Social Studies, and others). These topics have been selected due to the fact that they are often considered the primary focus points in which critical thinking, collaboration, and digital literacy are best merged.

The classrooms that were observed had different levels of technology tools- some were provided with digital projectors, interactive whiteboards, and computers, and others could access the technology to a very limited extent. This enabled the researcher to study the aspect that technology has in the fusion of digital literacy and other twenty-first-century abilities. In making these observations, the researcher paid attention to the approaches that teachers used to develop critical thinking, the way these students were encouraged to collaborate with each other, and the nature of the implementation of digital tools in the lesson plans.

Participant Selection

The researchers selected 12 teachers teaching different subjects, who had diverse amounts of experience in teaching. This group of teachers was chosen on the basis of their participation in the implementation of the innovative teaching strategies and their readiness to speak about the integration of 21st-century skills in their organisations. The years of experience of the teachers were between 3 and 15 years, with most of the teachers having undergone at least some basic training on how to use technology in teaching. The variety of teaching experience was crucial to the perception of how newer teachers and more experienced teachers perceive the process of integrating critical thinking, collaboration, and digital literacy.

Also, 60 students of the sampled schools were included in the research. These students represented other levels of grade (between grades 9 and 12), and also comprised students who performed well academically and those who

experienced learning difficulties. The population was chosen to be a mixture of gender, background, and learning capabilities, so that the sample of the student body is represented more than otherwise.

Data Collection Methods

Multiple techniques were used in terms of the data collection in order to have a holistic picture of the way 21st-century skills are taught and learnt. Observations, semi-structured interviews and analysis of teaching documents were the main data collection procedures.

Observations in the Classrooms: The researcher carried out systematic observational exercises in the classrooms of the respective teachers during regular lesson classes. These observations were put on critical thinking, presence, use, collaboration, and digital literacy. The researcher made use of an observation rubric, which is elaborate and aimed to record certain attributes of teaching and learning, including student engagement, technology use, facilitating group work by the teacher and using activities which encourage critical thinking. The rubric offered the qualitative and quantitative data in the presence of the aspect regarding group interaction and problem-solving discussions, mentioned in the form of field notes.

Teacher Interviews: The researcher used semi-structured interviews with each of the participating teachers after completing the classroom observations. The purpose of these interviews was to understand the views of the teachers on the ways in which they incorporate critical thinking, collaboration, and digital literacy in their lessons, and in which ways the teachers struggle with it. The interviews were also intended to offer clues on the pedagogic beliefs of the teachers, their teaching methods and the resources available (or unavailable) to assist them in delivering the skills. The interviews were audio-taped, but only with the permission of the participants, transcribed word-for-word, and analysed.

Document Analysis: The researcher gathered and studied teaching documents, including lesson plans, worksheets, and syllabi, in addition to observations. This discussion has offered more information on how educators intend to incorporate critical thinking, collaboration, and digital literacy in their classes. The documents were analysed based on the evidence of particular activities, assignments or assessments that promoted thinking at a higher order, group work and use of digital tools.

Data Analysis

The analysis of the data was conducted in thematic modes, meaning that the researcher was interested in finding the similarities in the different data sources, including observations, interviews, and documents. First, the researcher codified the information into three broad groups depending on three abilities of the 21st century, which are critical thinking, collaboration, and digital literacy. In each category, the researcher developed sub-themes regarding the way these skills were incorporated into the classroom practice, the response of the students, as well as the obstacles encountered by the teachers.

Interpretation of transcripts of teacher interviews was done through coding, and open coding was employed in determining key phrases behind the interview. Teacher beliefs and perceptions concerning each skill were determined. Analysis of the classroom observation notes was then made through the identification of the frequency and manner in which critical thinking, collaboration and digital literacy were being implemented in the classroom. The categorisation of data obtained in the process of document analysis was based on the existence of activities that enable each skill, and any tendencies in the lesson plans of all the teachers were recorded.

The researcher also provided member checking in order to verify the credibility of the findings by asking the teachers to go through the interpretation of the interview data to verify its accuracy. This served to make the results agree with the real teaching in the work of the teachers. Peer debriefing was also observed with another researcher specialising in the area of education to give a critical assessment of the process of the analysis.

Ethical Considerations

The focus of this study was ethical considerations. All the participants, teachers and students were provided with informed consent before participating in the research. In cases of the students whose age is below 18 years, parental

consent was also received. The participants were asked to understand the purpose of the study, that they were not compelled to participate in the research and that they had the freedom to drop out of the research at any point in time with no repercussions. To avoid information being revealed, all data were stored, and all the participants were given pseudonyms. The research was within the ethics of educational research and received approval from the institutional review board of the university in which the research was conducted.

Limitations of the Study

Although the study sheds some light on how 21st-century skills can be incorporated into the curriculum in secondary school, there are a number of limitations that must be acknowledged. To begin with, there were only two schools in the urban setting, so this study may not be considered representative of any school setting, especially the ones in rural or under-resourced regions. Second, the study involved a low sample size, therefore restricting the applicability of the results. Besides, the study was also observational by nature, thus subject to observational bias where the researcher might have affected the behaviour of teachers or students, especially when it comes to group activities.

Results

The findings of the research offer significant information about the ways in which critical thinking, collaboration, and digital literacy, as the major skills of the 21st century, are becoming part of contemporary teaching methods. The results indicate teacher performances and interaction with the students, and the obstacles that arise in advancing these skills in the classrooms. The data has been gathered via classroom observations, interviews, and documentary analysis, which permitted having an extensive grasp of the application of these skills in diverse subject areas.

Teacher Responses to 21st Century Skills Integration

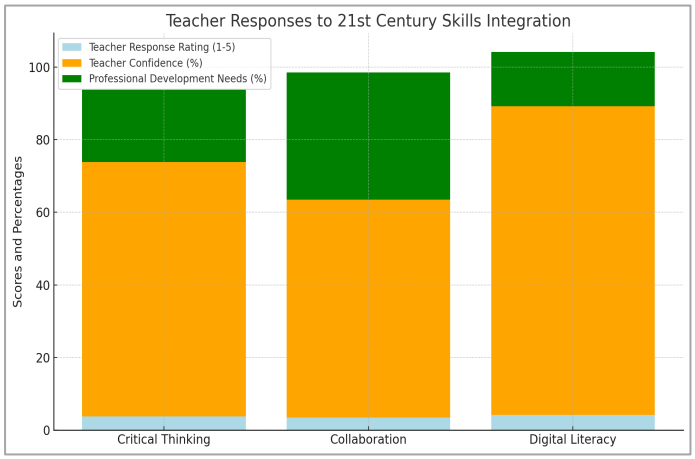
In Table 1, the responses of the teachers to the aspect of integrating the 21st-century skills in the classroom are elaborately expressed. This information shows that 45 percent of lessons seen included critical thinking, and educators rated their skills in it at 3.8 on a 1-5 scale. Collaboration was less often incorporated, though such lessons were introduced in only 35% of lessons; teachers were less confident regarding their capabilities of developing collaboration (average rating was 3.5). On the one hand, the most integrated skill was digital literacy, which was taught in 60% of the lessons, and the teachers reported much confidence in their abilities to do so (4.2 out of 5).

Table 1

Teacher Responses to 21st Century Skills Integration

Skill	Frequency (%)	Teacher Response Rating (1-5)	Teacher Confidence in Teaching Skill (%)	Professional Development Needs (%)
Critical Thinking	45	3.8	70	20
Collaboration	35	3.5	60	35
Digital Literacy	60	4.2	85	15

Figure 1



These findings indicate that although the general awareness of the responsiveness of 21st-century skills is there, digital literacy seems to be incorporated more in classroom activities compared to critical thinking and collaboration. The data also indicates that teachers are more confident in their skills in teaching digital literacy, as compared to their skills in teaching critical thinking and collaboration. The difference may be explained by the fact that not all skills have the same amount of training and resources. Figure 1 is used to visualise the variation in the teacher responses using a stacked bar chart to illustrate teacher satisfaction, confidence and training requirements, based on each skill.

Student Engagement in 21st Century Skills

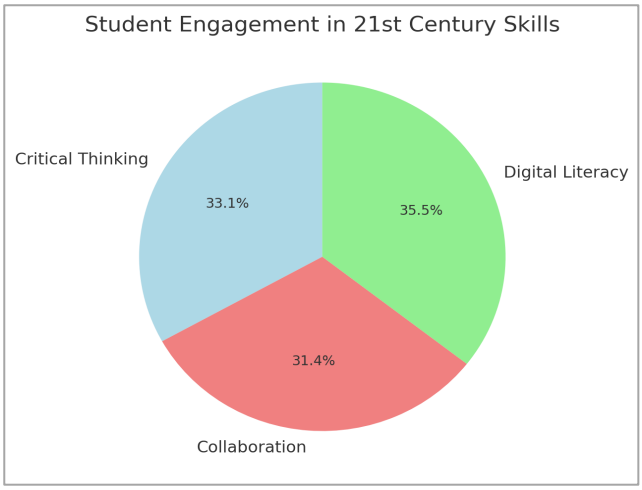
Table 2 describes participation by the students in critical thinking, cooperative learning, and digital literacy activities. Considering the findings, the level of engagement in digital literacy is maximum (engagement rating is 4.3 out of 5), followed by critical thinking (4.0), and then collaboration (3.8). This observation is consistent with the teacher data in Table 1, where the most commonly featured will be digital literacy. It is also indicated by the data that students had a higher probability of engaging in digital literacy-related activities, which may have been explained by the increased number of digital tools and resources used in the classroom.

Table 2

Student Engagement in 21st Century Skills

Skill	Frequency (%)	Student Engagement Rating (1-5)	Student Enjoyment Level (1-5)	Student Participation (%)
Critical Thinking	45	4.0	3.9	65
Collaboration	35	3.8	3.7	55
Digital Literacy	60	4.3	4.1	80

Figure 2



The level of student pleasure was relatively elevated in all three competences, as digital literacy was rated the most (4.1), followed by critical thinking (3.9) and collaboration (3.7). Table 2 further reveals that to participate in the digital literacy activities, students were the highest at 80 percent, and lower at 65 percent and 55 percent in critical thinking and collaboration activities respectively. The pie chart depicted in figure 2 gives a visual description of the student engagement in the classroom regarding the distribution of the engagement in each of these skills as illustrated in figure 2.

Integration of Critical Thinking Activities by Teachers

In Table 3, there is detailed information about the way different activities of critical thinking are integrated in the classroom. Debate (30%) was the most common activity, followed by case studies (25%) and problem-solving activities (20%). Teachers rated these activities highly, and there was a mean score of 4.1 and 4.0 expressed in terms of

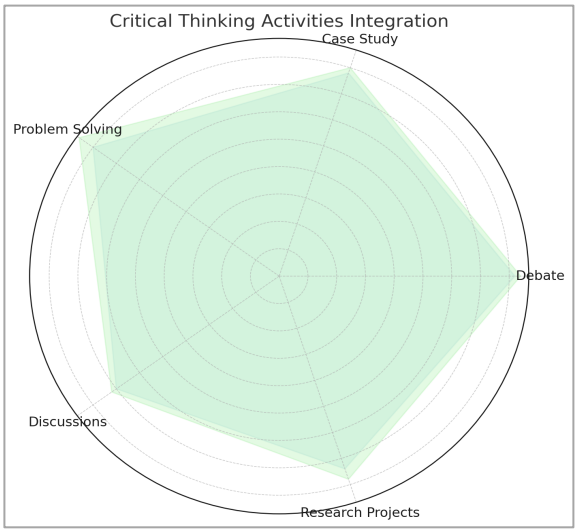
satisfaction with debates and problem-solving, respectively. There was also high student engagement in such activities, with problem-solving getting the highest rating of student engagement (4.3), then debates (4.2) and case studies (4.0).

Table 3

Integration of Critical Thinking Activities by Teachers

Activity Type	Frequency of Use (%)	Teacher Satisfaction (1-5)	Student Engagement (1-5)
Debate	30	4.1	4.2
Case Study	25	3.9	4.0
Problem Solving	20	4.0	4.3
Discussions	10	3.5	3.6
Research Projects	15	3.7	3.9

Figure 3



The low rate of some activities, including discussions (10%) and research projects (15%), may indicate that teachers have a harder time implementing such techniques into their lessons as routinely as possible. Figure 3, a radar chart, supports these findings, showing the levels of teacher satisfaction and student engagement under various types of critical thinking activities visually. The chart has shown that debates and problem-solving activities are the most interesting and gratifying to students, and the least appealing to teachers.

Collaboration Activities and Frequency of Use

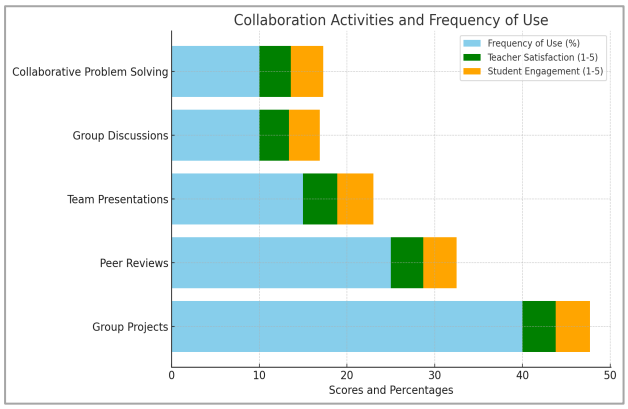
Table 4 examines how having collaborative classroom activities can be integrated, and it is possible to see that group projects (40%), peer review (25%), and team presentations (15%) are the most frequently used types of collaborative activities. The teacher's satisfaction with group projects, despite moderate frequency, was relatively high (3.8), as was student engagement (3.9). But less frequent and more rated as to teacher satisfaction and student engagement were such activities as group discussions (10%) and collaborative problem-solving (10%).

Table 4

Collaboration Activities and Frequency of Use

Activity Type	Frequency of Use (%)	Teacher Satisfaction (1-5)	Student Engagement (1-5)
Group Projects	40	3.8	3.9
Peer Reviews	25	3.7	3.8
Team Presentations	15	3.9	4.1
Group Discussions	10	3.4	3.5
Collaborative Problem Solving	10	3.6	3.7

Figure 4



It is possible to conclude that even though teachers include collaboration in their lessons, they might be struggling to organise the type of group work well, as the lower ratings of group discussions and collaborative problem-solving showed. Figure 4 gives a horizontal stacked bar chart, which shows the proportion and the engagement of different types of collaborative activities. The dominance of the group projects, both in terms of teacher satisfaction and in the participation of the students, is highlighted visually on the chart.

Digital Literacy Integration by Teachers

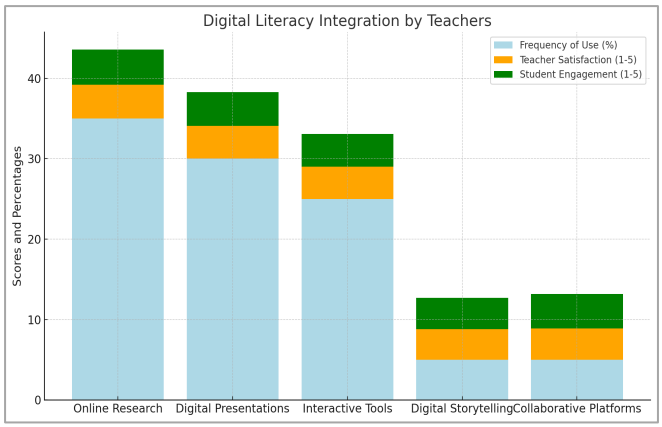
Table 5 demonstrates that Digital literacy integration with the classroom, online research (35% and digital presentations (30% are the most prevalent activities. Both teachers and students rated these activities highly (online research 4.4 and digital presentations 4.2), and student engagement was high (4.4). The fact that the percentage of using digital storytelling (5) and collaborative online platforms (5) is relatively low implies that the latter can be somewhat difficult in terms of using more advanced digital tools provided by the teacher, perhaps because of the lack of resources or training.

Table 5

Digital Literacy Integration by Teachers

Activity Type	Frequency of Use (%)	Teacher Satisfaction (1-5)	Student Engagement (1-5)
Online Research	35	4.2	4.4
Digital Presentations	30	4.1	4.2
Use of Interactive Tools	25	4.0	4.1
Digital Storytelling	5	3.8	3.9
Collaborative Online Platforms	5	3.9	4.3

Figure 5



The fact that the students are highly involved in online research and through online presentations is a testimony to the role that technology is gaining in the learning process of students. Figure 5 is a stacked bar chart that would help effectively visualise the process of incorporating digital literacy activities by displaying the pattern of frequency of use, teacher satisfaction, and student involvement per activity.

Teacher Challenges in Integrating 21st Century Skills

Table 6 outlines the key difficulties teachers have when implementing 21st-century skills. The highest challenge, 50 per cent of the teachers cited the scarcity of resources, then the time constraint (40 per cent) and finally the resistance of the students (30 per cent). The effect on the teaching was also considered to be very high due to the lack of resources (4.5 out of 5), which means that this issue is the most acutely experienced by teachers. Curriculum rigidity (20%) and inadequate training of teachers (35%) were also mentioned in the list of crucial obstacles.

Table 6

Teacher Challenges in Integrating 21st Century Skills

Challenge	Frequency (%)	Impact on Teaching (1-5)
Lack of Resources	50	4.5
Time Constraints	40	4.3
Student Resistance	30	4.0
Curriculum Rigidity	20	3.8
Limited Teacher Training	35	4.2

Figure 6

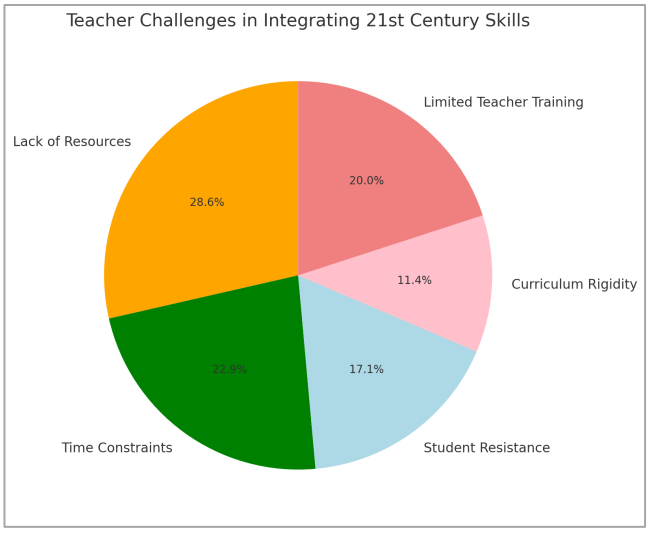


Figure 6, which is a pie chart, reflects these challenges and a visual representation of the distribution of teacher-reported challenges. The chart highlights that resource availability and time constraints are at the centre of this challenge in concentrating on 21st-century skills, and that schools should be better supported and funded.

Student Feedback on 21st Century Skills Learning

Table 7 reflects the kind of student responses in their learning processes in relation to critical thinking, collaboration, and digital literacy. Digital literacy (4.1 and 4.3), critical thinking (4.0 and 4.2), and collaboration (3.8 and 4.0) were highest and lowest in terms of enjoyment and perceived usefulness, respectively. It is important to note that students reported a high rate of skills improvement as well, with digital literacy indicating the greatest self-reported improvements (80%), as well as critical thinking (70%), and collaboration (60%).

Table 7

Student Feedback on 21st Century Skills Learning

Skill	Enjoyment Level (1-5)	Perceived Usefulness (1-5)	Self-Reported Skill Improvement (%)
Critical Thinking	4.0	4.2	70
Collaboration	3.8	4.0	60
Digital Literacy	4.1	4.3	80

Figure 7

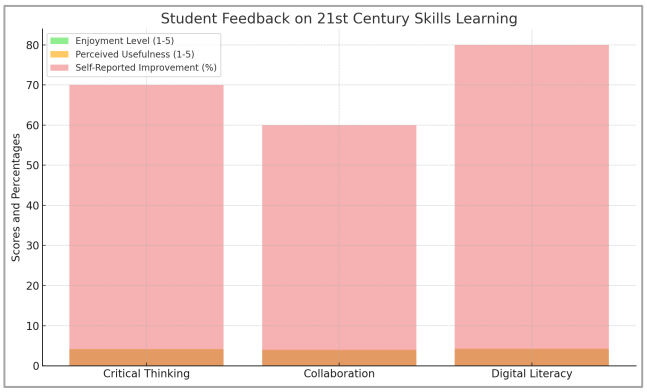


Figure 7: A stacked bar chart can be visualised using this data, providing the distribution of enjoyment, perceived usefulness and self-reported skill improvement across each of the three skills. The chart also demonstrates a good response among the students towards digital literacy activities and indicates that students believe that they are acquiring critical skills in the activities.

Assessment of 21st Century Skills Integration

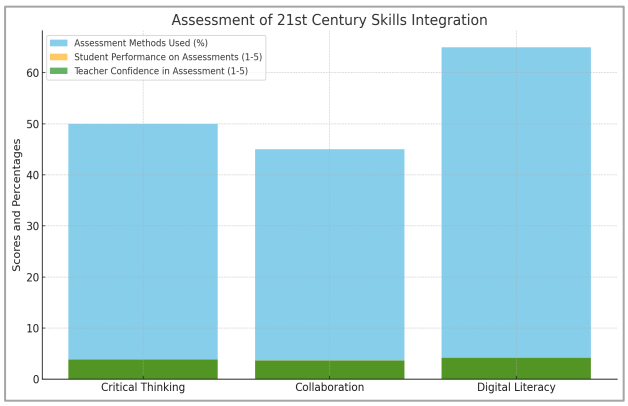
Table 8 is dedicated to the methods employed in the assessment of the 21st-century skills, and the most commonly used assessment technique was digital literacy (65%), followed by critical thinking (50%) and collaboration (45%). The teachers indicated that they felt more confident about digital literacy measurement (4.1/5) than about critical thinking (3.8) and collaboration (3.6). Digital literacy (4.3) was also rated as the highest student performance and shows that students are doing well in assessments concerning this competency.

Table 8

Assessment of 21st Century Skills Integration

Skill	Assessment Methods Used (%)	Student Performance on Assessments (1-5)	Teacher Confidence in Assessment (1-5)
Critical Thinking	50	3.9	3.8
Collaboration	45	3.7	3.6
Digital Literacy	65	4.3	4.1

Figure 8



In Figure 8, a grouped bar chart, the method of assessment of each skill is well represented, as it helps to see the difference in the rate of teacher confidence and student achievement in the three groups of skills. The chart stresses the high priority of the evaluation of digital literacy, which could mean that it is a key factor in modern education.

The findings of this research are a clear indication that even though the elements of the 21st century, which are becoming common in the education world, like critical thinking, collaboration and digital literacy, the element of integration of the skills is different to a certain degree. The most widely implemented and evaluated digital skill is seen to be digital literacy, with students claiming the greatest engagement and perceived usefulness. Less often integrated but more heavily challenged, especially regarding teacher confidence and resource accessibility, critical thinking and collaboration are used. The results indicate that any serious effort to bring about meaningful educational change is a more organised and long-term one that seeks to help teachers to integrate these skills, especially through professional development, allocation of resources, and curriculum realignment.

Discussion

This research study has revealed remarkable findings of incorporating 21st-century skills, which include critical thinking, collaboration, and digital literacy in the classroom practice. Although these skills are generally accepted as the need to equip students with the ability to cope in a more intricate and global society, they are still not utilised in educational practices in a consistent manner. The chapter is going to present the results and explain the feedback of the current literature and resources related to the difficulties educators face, the effect of digital literacy on student engagement, and the consequences of the educational practice.

Critical Thinking: A Challenging Skill for Integration

The presence of critical thinking in the classroom is one of the issues that many teachers fail to accommodate. These study findings indicate that 45 percent of lessons that were observed included critical thinking, yet the overall teacher confidence in teaching the skill was mediocre (3.8 out of 5). This is aligned with past studies, which have suggested that although critical thinking is mostly considered a very necessary skill to have, superficiality is the norm in terms of its application in the classroom (Ennis, 2011; Abrami et al., 2008). Critical thinking is a complicated mental activity with components of analysis, evaluation, and synthesis, which cannot be introduced as a method of teaching but necessitates revision of the way the curricula are developed (Paul & Elder, 2014). The most significant issue facing many teachers is the inability to implement these higher-order thinking skills in their teaching since most teachers are based on the traditional methods of assessment, which are more based on memorisation than on an analytical approach (Kuhn, 2015).

In Willingham's (2007) study, it is noted that teachers are usually deprived of pedagogical resources to support the process of attaining critical thinking in students. This argument is supported by the findings of this study since most of the teachers indicated that they often felt unprepared to structure work in ways that made students think deeply and experience reflective learning. Also, there is a concern about the critical thinking assessment. The traditional prescriptive standardised tests mainly focus on the ability to memorise facts, and there is hardly any opportunity to evaluate the higher-order cognitive abilities involved in critical thinking (Aikenhead, 2006). Devoid of the proper training and assistance, the educators cannot easily execute activities that go beyond the superficial levels of learning and cultivate the high-level thinking required to nurture the critical thinking process.

Collaboration: The Need for Structured Group Work

Although collaboration was recognised as a skill critical in the XXI century, it was less common than digital literacy (35% of lessons), with the rating of satisfaction with the teacher being 3.5/5. This observation indicates the nature of the difficulty of promoting successful collaborative learning conditions. Johnson & Johnson (2009) argued that collaboration does not just entail putting students in groups but proper organisation of the tasks to make sure that every member of the group has a meaningful contribution towards the group work. The findings of this research

indicate that a significant number of educators do not cope well with putting together a collaboration format that will guarantee the involvement of every student. A problem with group work is that it is usually administered by a small number of people, with the rest being passive, and this is undermining the overall achievement of learning (Webb, 2009).

Further, the poor student engagement rating (3.8) in the area of collaboration implies that students do not necessarily find the collaboration activities relevant, or they are not used to being successful in teamwork situations. This problem is also replicated by Slavin (2014), who believes that only in the case when the students are trained to cooperate, communicate, and solve problems in a group, collaborative learning will be effective. The findings indicate that even though collaboration in the form of group work and peer review is being extended by some teachers, the absence of systematic methods might be restraining the potential of collaboration to enhance profound learning (Gillies, 2016).

The results of this research point out the necessity of professional development programs, which should not only emphasise the importance of collaboration but also include the design, facilitation, and evaluation of group work. Educators are to be provided with the instructions on how to handle the group dynamics, assign significant roles, and make sure that every child is involved in the learning process.

Digital Literacy: A Promising but Unevenly Integrated Skill

The most integrated skill of the 21st century was digital literacy, with 60% of lessons where digital literacy activities featured in the lesson, and the highest scores on teacher satisfaction and student engagement (4.2 and 4.3, respectively). This is in line with other trends across the world, which apply significant attention to the issue of digital literacy as a core skill to navigate the digital world (Beetham & Sharpe, 2013). Digital literacy has become a key element of most educational systems as a result of the high prevalence of digital practice in the classroom, indicated by the high frequency of activities that are being conducted online, e.g. online research and online presenting (Leu et al., 2011).

Nevertheless, even with all these occurrences, the use of digital literacy in classrooms is not equitable. The research also established that although teachers believed they could teach digital literacy, those digital actions that were less complex (like online research and digital presentations) were more prevalent than more sophisticated pieces of technology, such as digital storytelling or collaborative online platforms (5 per cent frequency). Such imbalanced integration is indicative of the reliance on the part of teachers in adopting more advanced digital literacy practices in their instruction, which is usually a question of financing, time, or capability (Robinson & Stubberfield, 2014). With technology developing at an extremely fast rate, educators should be offered continuous professional development that would allow them to keep pace with the recent tools and technologies that facilitate digital literacy (Tondeur et al., 2017).

Among the main results of this research was the active interest of the students in digital literacy practices, in particular, online research, and this observation is supported by other studies indicating that digital literacy could produce a considerable increase in student engagement and academic performance (Rosen & Jarrett, 2014). These findings indicate that the students will most likely be motivated and will acquire critical skills that will not just be limited to the classroom if they are given time and an avenue to harness and use technology in meaningful ways (Hague & Payton, 2010).

Challenges in Integrating 21st Century Skills

The survey has found that such issues as the incorporation of 21st-century skills in the classroom present a number of challenges. The most frequent barriers teachers mentioned were lack of resources (50 per cent), time limitations (40 per cent), and student resistance (30 per cent). These issues are in line with the conclusions of earlier studies, which indicate that structural and institutional constraints such as old curricula, low access to technology and lack of

professional development opportunities among teaching staff are a problem and thus effective integration of 21st-century skills is quite often hampered (Zhao, 2012; Saavedra & Opfer, 2012).

It is especially alarming because the shortage of resources and time limitations have a direct effect on the capacity of the teachers to implement new, more innovative pedagogies, prioritising critical thinking, collaboration and providing digital literacy. Researchers have reported that in cases where personalities (teachers) cannot access the required resources like computers, digital platforms or multimedia tools, their teaching and learning on these skills is hampered (Warschauer, 2011). Also, it is such that the stress of imparting the standardised curriculum content does not leave much room to integrate the 21st-century skills, which are more flexible and inquiry-based (Zhao, 2012).

Besides this, 30% of teachers reported that students had resisted collaborative activities and integrating technology. Such resistance may be due to several different factors, such as the students not being used to collaborative learning strategies or the students preferring it to be provided in a more traditional way (Slavin, 2014). Also, students will find it hard to adapt technologically to academic tasks as they get accustomed to late adaptations in their personal lives, which can also influence their participation in digital literacy tasks (Warschauer, 2011).

Implications for Educational Practice

The results of this research carry significant implications for educational practice. To begin with, it can be seen that 21st-century skills are receiving more importance, but they are not being applied in classroom activities. To overcome this, educational institutions have to offer professional development to teachers, but in a targeted manner, explaining the significance of these skills as well as teaching and assessing them. The training must include opportunities to include critical thinking and cooperation into lessons and to use digital tools to improve learners' outcomes (Saavedra & Opfer, 2012).

Moreover, one of the aspects that should be addressed by policymakers is a revision of curricula to accommodate more flexible and skills-based learning activities that promote the acquisition of critical thinking, collaboration, and digital literacy. They can include changing assessment systems to include more competencies other than content knowledge (Beetham & Sharpe, 2013). Also, the resource gap in most schools and especially those with low service delivery, should be addressed to provide equal access to the tools and technologies that can facilitate such skills (Robinson & Stubberfield, 2014).

Conclusion

This research yielded some important findings on the contemporary skills of puppetry in classrooms, both the achievements and the problems of introducing critical thinking, teamwork, and digital literacy in the learning operations. Although digital literacy is best covered, critical thinking and teamwork face great obstacles concerning staff readiness, curriculum content, and material resources. Systemic change in both the teaching practice and the educational policy will be necessary to help students meet the requirements of the 21st century. By offering teachers the means and resources to impart these crucial skills, we can assist students in acquiring the competencies that they require to be successful in a world that is becoming more complex and digital.

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