The Attributes of 21st-Century Teachers: A Case Study

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Abstract— Teachers must be equipped with the skills needed by the educational environment of the twenty-first century, and school administrators and stakeholders are crucial in this process. The study explored key attributes of 21st-century teachers in the Iligan City Division during the school year 2022-2023 using a case study design. Purposive sampling was used to select the fifteen participants for the study. In-depth face-to-face interviews were conducted with all the participants to gather information from the school heads, teachers, and students. Data analysis followed Yin's (2014) six-step method, revealing five core attributes of 21st-century teachers: digital literacy and technological proficiency, adaptability and flexibility, collaboration and communication skills, critical thinking and problem-solving, and global awareness and cultural competence. Furthermore, the study identified three key support areas for teachers in acquiring these attributes: integrating technology into classroom instruction, professional development, and policy alignment and recognition. A symbiotic relationship between teachers, school leaders, and stakeholders is vital for fostering a dynamic and adaptive educational environment in the 21st century. School leaders, education policymakers, and the broader community work together to support and empower teachers with the essential attributes required for 21st-century education.

Keywords— digital literacy, policy alignment, technological proficiency, school heads, stakeholders.

INTRODUCTION

In educational research, the characteristics of 21st-century teachers have drawn attention because of how quickly technology is evolving and the demands of the modern workforce. Teachers must possess specific qualities and skills to prepare education for future success. The 21st century is marked by rapid technological advancements that have significantly impacted the way people live, work, and learn. In order to get students ready for the requirements of the modern workforce, teachers must possess specific attributes and skills (Popkova & Gulzat, 2020). Therefore, understanding the attributes of 21st-century teachers is crucial for enhancing teacher effectiveness and student success, being competent as a teacher has the potential aid in expanding instructors' potential in keeping with the concepts of 21st century learning (PAK-21). The key to teachers' ability to raise standards is their skill set of instructing in accordance with recent advancements in schooling (Sulaiman & Ismail, 2020). Goals of this case study to investigate the attributes of 21st-century teachers and their impact on student success.

The attributes of 21st-century teachers include flexibility and adaptability, collaboration, creativity and innovation, lifelong learning, and pedagogical expertise. With these, teachers must be flexible to new technologies and varying student needs. They must work collaboratively with colleagues and other professionals to enhance student learning. They must be imaginative in their teaching tactics and incorporate innovative strategies to engage students. They have continuously learned and update their knowledge and skills to stay relevant in the profession. They need to possess strong pedagogical skills and knowledge to effectively deliver content to students (Erdem, 2019).

Teachers in the 21st century must possess attributes for instance flexibility, adaptability, collaboration, creativity and innovation, lifelong learning, and pedagogical expertise. These attributes are essential for enhancing teacher effectiveness and student success in the modern workforce (Baran-Łucarz & Klimas, 2020).). Effective 21st-century teachers must possess attributes such as technological competence, empathy, and cultural responsiveness. Additionally, digital competence plays an important factor in enhancing 21st-century teacher attributes (Purgason et al., 2019).

Another essential attribute for effective 21st-century teachers was teacher empathy which significantly predicts student academic achievement and engagement (Torrisi-Steele, 2020).). Teacher creativity significantly predicts student academic achievement, even after controlling for other variables such as technology use and pedagogical expertise. Hence, creativity is an essential attribute for effective 21st-century teachers in a technology-rich environment (Muhammad, 2019).). In addition, collaboration as an essential attribute for

effective 21st-century teachers in promoting student success (Hirsh-Pasek et al., 2020).

Additionally, the attributes of effective 21st-century teachers include technological competence, technology integration, and autonomy support as essential attributes for enhancing teacher effectiveness and promoting student success. The teacher technological pedagogical content knowledge significantly predicts student academic achievement, even after controlling for other variables such as teacher experience and student background. Thus, highlights the importance of technological competence as an essential attribute for effective 21st-century teachers (Shidiq & Yamtinah, 2019). Teacher technology integration significantly predicts student academic achievement, even after controlling for other variables such as student prior achievement and teacher experience. This emphasizes the importance of technology integration as an essential attribute for effective 21st-century teachers (Backfisch et al., 2021). Teacher autonomy support significantly predicts student academic achievement, even after controlling for other variables such as student prior achievement and teacher experience. It highlights the importance of autonomy support as an essential attribute for effective 21st-century teachers (Baru et al., 2020).

21st-century teacher attributes include cultural competency, communication skills, and problem-solving skills, through a case study of teachers (Astuti et al., 2019). Intercultural competence is a critical attribute for 21st-century teachers, as it enables them to understand and connect with students from diverse backgrounds and to create inclusive learning environments (Chaka, 2020). Learning agility of teachers highlights the meaning of adaptability, continuous learning, and flexibility as necessary attributes for 21st-century teachers (Bakay, 2022).).

Teachers' affective aspect and understanding stand out to be attributes of 21st century teachers. Their emotional intelligence plays an important role in teaching (Nithyanantham et al., 2019). They also reflect and learn continuously so as to improve oneself (Kim et al., 2019). One very important skills was teacher resilience. It is a key attribute for effective 21st-century teachers, as it enables teachers to deal with the challenges then stress the teaching career and to provide a creating a favorable learning environment for their students (Bascopé et al, 2019).

Global competence is an essential attribute for 21st-century teachers, as it enables them to prepare students for a globalized world and to foster cross-cultural understanding and communication skills (Qadir et al., 2020). Teacher leadership practices also significantly predict student academic achievement, which emphasizes the importance of leadership skills and practices as an essential attribute for effective 21st-century teachers (Howard et al., 2019).

While there is increasing frame of study that identifies key attributes that teachers need in the 21st century, there may be limited empirical evidence on the application of these attributes in their classrooms. Many professional development programs aim to equip teachers with 21st-century skills and knowledge, perhaps technology integration, critical thinking, creativity, and cultural competency, but the extent to which these programs are effective in enhancing teachers' capabilities in these areas may require further investigation (Staufer, 2022).

By investigating the effectiveness and application of teachers' acquisition of 21st-century attributes, this research could provide valuable insights for education policymakers, administrators, and practitioners on how to better support teachers in preparing the needs of 21st-century learners. It could contribute to the existing literature on teacher professional development and 21st-century education, addressing potential gaps in knowledge and informing evidence-based practices in teacher preparation and training.

Understanding the 21st-century attributes of teachers is essential for preparing educators to come across the evolving needs of students in the modern era, promoting equity and inclusion in education, and informing policy and practice. Conducting case studies on 21st century skills of teachers can help identify key competencies, challenges, and effective strategies for preparing teachers to fulfill the requirements of students and ultimately raise the standard of education in the 21st century (Garcia, 2019).

Statement of the Problem

This study explored the attributes of 21st century teachers in a secondary school of Iligan City. It sought answers to the following questions:

1. What are the key attributes of 21st century teachers relevant for teacher education, professional

development, and policy initiatives aimed at enhancing teaching practices in the 21st century?

2. How can school heads and other stakeholders help teachers acquire the key attributes of 21st century teachers?

METHODS

Research Design

This study used a qualitative approach using Yin (2014) case study design. This design was deemed appropriate for this study since it generates an in-depth, multi-faceted understanding of a complex issue in its real-life context which in this study was the attributes of the 21st Century teacher. Yin's case study design emphasizes a thorough investigation of a specific case or a small number of cases to gain a comprehensive understanding of the research problem. Case study research is particularly useful when the researcher aims to explore complex and contextual phenomena within real-life settings. Also, this study hinged upon the researcher's skill to investigate the issue that could be of relevance to the skills needed in the 21st Century teaching and learning.

Setting

The research was conducted in a secondary school of Iligan City, Lanao del Norte. The school offers quality, fair, culture-based and complete basic education to produce graduates who are intellectually and technologically competent. The school implements a K-12 Basic Education program that offers junior and senior high school. The students' population of the school year 2022-2023 are seven thousand five hundred sixty (7,560) operating in one shift with the following programs: Special Science Curriculum, Special Program in Journalism, Special Program in the Arts, Special Program for Sports, Basic Education Curriculum and the Senior High School. In response to the call that " no student should be left behind", the school had offered Special Education program to cater students with special needs, Open High School for those who are working students, and Alternative Learning System – BPOSA to harbor out of school youth and adults. Recently, the school has adopted online and in-person set up of learning.

Participants

The study participants were 5 junior high school teachers, 5 school heads, and another 5 students from a secondary school in Iligan City. They were chosen using purposive sampling. The criteria for selecting the respondents included: teachers who were teaching online in Junior High, and who gave their full consent to participate in the study. For school heads to be a part of the study's respondents, they had to have 3 years of experience as school heads or principals, have knowledge of and experience in hiring and supervising teachers who demonstrated 21st-century teaching attributes, and providing full approval for them to take part in the research. For students, they had been required to be in grades 7 to 10 in a high school setting, have teachers who demonstrated 21st-century teaching attributes, and give their full approval to partake in the study.

Instruments

In-depth interviews for teachers, school heads and students was directed using the interview guide question (Appendix D). The participants were interviewed about the attributes of a 21st century teachers. The researcher-made interview questions were presented first to the experts in qualitative research to ensure validity. The researcher also asked approval from the dissertation committee. Afterwards, the interview questions were piloted to the selected participants not included in the study to ensure clarity and consistency of the responses.

Data Collection

The researcher approached the Graduate School of Misamis University for approval before beginning to collect the data for the study. The study was then carried out in one of Iligan City's secondary schools after the researcher obtained permission from the division's superintendent to do so. Given the permission, the researcher proceeded to the Principal of the study school and politely asked for approval. Once approval was attained by the researcher, a consent letter was prepared for the participants, and structured interviews were conducted using an interview guide to collect data on the challenges and opportunities encountered in their classes. To ensure confidentiality and the right to withdraw from the study, each participant underwent a 40-minute interview at a prearranged time and date.

After obtaining the required authorizations, the researcher prepared a letter of consent for the subjects, outlining the significance of the study. The researcher ensured submission with COVID-19 Inter-Agency Task Force (IATF) safety measures and procedures during face-to-face interviews. The individual interviews took place only within the school premises. Using NVivo software, the responses were coded, categorized, and

converted into themes after each participant had been interviewed. The themes were then examined and interpreted. For the purpose of verification, the participants received the results back.

Ethical Consideration

For the purpose of ensuring adherence to ethical principles, the researcher used the codes from the Helsinki Declaration (2001). All participants had their informed consent obtained in writing before the interview after having their study's goals and significance explained to them. Participants received information about the study's goals, potential advantages, confidentiality protection, and how to get in touch with the researcher if they had any inquiries. The conditions of participation, which included the freedom to decline or leave the study whenever one desired without incurring penalties, were made clear. Participants were given the reassurance that the research was voluntary and that they could leave at any time if they so desired.

Data Analysis

The six-step method of Yin's data analysis was used to analyze the transcriptions. Finding and comprehending patterns of meaning in qualitative data is a technique used in qualitative research, which employs flexible data analysis to produce details from the information gathered. The procedure consisted of the following six steps: 1. Plan, 2. Design, 3. Prepare, 4. Collect, 5. Analyze, and 6. Share.

Planning. Before starting the process, the researcher must specify the goals in detail. An extensive method of systematically gathering information on a particular topic. It wasn't difficult, but a specific strategy was needed from the researcher. First, the information gathered needs to address the major concerns surrounding the chosen topic. It was then done to evaluate the results. Making decisions about what must be done, when it must be done, how it should be done, and who will do it is the fundamental purpose of planning. To further her investigation of the subject, the researcher in this study picked a study that piqued her curiosity. Under the direction of her adviser, the researcher used purposeful sampling to choose people from whom she could collect data, taking into account the sample size, accessibility, and time frame. The researcher created the Data collection strategy and study questions with the help of her advisor. The objectives of an organization are determined intellectually, and

various action plans are created to help achieve them. It outlines in detail how to accomplish a specific goal (Surbhi, 2019).

Designing. The researcher decided on the best approach to begin the study at this point and used that decision-making to direct the research by taking into account the degree of flexibility that is open to adjustment as preliminary evidence is gathered. The research tool was created by the researcher, who also selected the research methodology. Through the methods used for data collection and analysis, the study design logically connected the research questions to the research findings. The study design includes all of the necessary components, such as the research questions, pertinent hypotheses, analytical unit, logic linking the data to the hypotheses, and standards for interpreting the findings. The design stage includes deciding on the type of case study (single, multiple, holistic, embedded), defining the unit of analysis and the likely cases to be studied, developing theory/propositions and identifying the problems underpinning the anticipated study, and developing procedures to maintain case study quality.

Preparing. In order to gather the data for this study, the researcher sincerely requested consent from the participants, including the Dean of the Graduate School and other specified authorities who were involved in the study. Research must be used as part of the data collection preparation process to establish clear rules and guidelines for each step of the primary data collection process (Stedman et al., 2022). The details of what data preparation is, how to do it, and the benefits it provides to organizations are covered in more detail in this guide. Also available information on tools and techniques for data preparation. One of the main aims of data preparation is to guarantee that the raw data is accurate and consistent before processing and analysis.

Collecting. Acquiring data, like measurements or observations, is done in a methodical manner. Regardless of whether he conducts research, gathering data enables one to gain firsthand knowledge and distinctive insights into this study challenge (Bhandari, 2022). Once the participants were identified in this study, face-to-face interviews and google meet/video calls were scheduled. In order to create a comfortable environment for the participants, they were conducted by asking open-ended questions unrelated to the study's subject matter. To allay participants' fears, the researcher explained the study's goals and methodology

prior to the interviews. Using a recording device, the researcher began the interview by soliciting feedback from the participants. The researcher then checked to make sure the most crucial study issues had enough data to support them. The researcher also included nonverbal communication in the crucial data by recording it. Following the case study methodology, utilizing a variety of data sources, creating a case study database, and maintaining a chain of evidence are all part of the gathering phase (Yin, 2009). Analyzing. In order to turn the data into a narrative and then evaluate it in order to draw a conclusion, the researcher used research data analysis. The cleaned, organized, and processed data would then be ready for analysis. To comprehend, assess, and reach conclusions based on the criteria, a variety of data analysis techniques were available. Data visualization can be applied to study the data in a graphical manner to better comprehend the messages contained in it (Bhandari, 2022). The researcher read the interviewees' responses several times throughout the study. Sentences with similar content and context were used to create meanings. The conclusions drawn from the research were then used to expand on the themes that each participant had in common. The analysis stage employed a variety of tactics, including theoretical claims. It considered competing theories, applied analytical methods, and provided data (facts) free from interpretations (Yin, 2009).

Sharing. After the last reviews, this stage involves presenting and explaining the findings to the participants. This section describes presentations made during the study that covered the importance of data sharing (Pantano, 2020). The focus during the sharing stage was on determining the target audience, creating textual and visual resources, providing enough information for readers to form opinions, and revising and rewriting until everything was flawless.

RESULTS AND DISCUSSION

This qualitative research delved into the attributes of 21st century teachers in a secondary school in Iligan City during the school years 2022-2023. The study involved a diverse group of respondents, including five school heads, five teachers, and an additional five students, offering a comprehensive perspective on the topic.

The school heads, referred to by the pseudonym PSH, represented a range of ages, genders, years of experience, and educational attainments, contributing to the richness and diversity of the study. The five school heads provided valuable insights into the attributes of 21st century teachers based on their varying experiences and expertise. PSH1, a 52-year-old female with eight years of experience and a MAEd degree, brought her unique perspective to the study. PSH2, a 50-year-old female with ten years of experience and a PhD degree, offered a wealth of knowledge and expertise. PSH3, a 46-year-old female with five years of experience and an EdD degree, provided a valuable perspective on the attributes of 21st century teachers. PSH4, a 39-year-old male with eight years of experience and a MAEd degree, brought a different viewpoint to the discussion. PSH5, a 48-year-old male with five years of experience and a MAEd degree, enriched the study with his insights and experiences.

The group of teacher respondents, identified by the pseudonym PT, represented diverse specializations and backgrounds. PT1, a 35-year-old female teacher, demonstrated proficiency in integrating technology into Grade 8 TLE (Technology and Livelihood Education) lessons. PT2, a 46-year-old female, effectively utilized technology in teaching Grade 9 English, showcasing innovative approaches to instruction. PT3, a 37-year-old female, leveraged technology to enhance the teaching of Grade 7 Math, highlighting the significance of technology in STEM education. PT4, a 32-year-old male, brought expertise in social studies to Grade 10 Aralin Panlipunan, demonstrating the application of technology in the humanities. PT5, a 40-year-old male with a degree in Physics, specialized in teaching Grade 10 Science, showcasing the integration of technology in the sciences.

The student respondents, referred to as PS, represented various ages, genders, and grade levels, providing insights into the experiences and perceptions of students in relation to 21st century teaching. PS1 and PS2, both 16-year-old females in Grade 10, offered valuable perspectives on the attributes of their teachers. PS3, a 15-year-old male in Grade 9, provided insights from the perspective of a younger student. PS4, a 13-year-old female in Grade 8, shared her experiences as a student in a lower grade level. PS5, a 12-year-old male in Grade 7, contributed unique perspectives as one of the youngest participants in the study.

The researcher analyzed the respondents' responses from an interpretive perspective following the Yin's Framework of data analysis. The respondents' answers

were analyzed and came up with relevant statements to fit the objectives of the study. Five main themes emerged as key attributes of the 21st century teachers, and three main themes for the support that school heads and stakeholders in the study. The attributes of 21st century teachers in a secondary school include digital literacy and technological proficiency, adaptability and flexibility, collaboration and communication skills, critical thinking and problem-solving skills, and global awareness and cultural competence. The support from school heads and other stakeholders that helped teachers attain the 21st Century skills emerged as leveraging technology in classroom instructions, student-centered approaches, professional development, policy alignment and recognition

Key Attributes of 21st Century Skills

Rapid technological development, globalization, and changing societal needs are characteristics of the twenty-first century. As a result, there is a growing emphasis on the advancement of 21st century abilities to prepare individuals for the achievement in modern world. According to the participants' responses, the key attributes of the 21st Century teachers emerged into five (5) themes: Digital Literacy and Technological Proficiency, Adaptability and Flexibility, Collaboration and Communication Skills, Critical Thinking and Problem-Solving, and Global Awareness and Cultural Competence.

Digital Literacy and Technological Proficiency

Upholding digital literacy and technological proficiency enhance the educational experience and help teachers adapt to the changing educational landscape. The participants' emphasized the need for teachers to possess digital literacy and technological proficiency in the context of 21st-century teaching practices. The technology of today's digital age has become constitutive of daily life, including education. Students are growing up in a technologically-driven world, and teachers need to adapt to this changing landscape. The participants recognized that by possessing digital literacy and technological proficiency, Teachers can improve their instructional methods by utilizing technology effectively, engage students, and provide relevant learning experiences. These are supported by the teacher participant 2 and student participant 3.

"In today's digital era, teachers must possess technological proficiency to effectively integrate technology into their instructional practices. This includes utilizing digital tools, online resources, and educational platforms to enhance student engagement, foster personalized learning experiences, and develop digital literacy skills." (PT2)

"My opinion in today's digital era, technological fluency is an essential attribute for 21st-century teachers. Teachers should possess a solid understanding of technology tools, digital resources, and online platforms that can enhance teaching and learning. By incorporating technology into their instructional practices, teachers can create engaging and interactive learning experiences, facilitate collaboration, and prepare students for a technology-driven society." (PS3)

School head participants added the significance of technological competence and digital literacy for educators in the twenty-first century. As school leaders or heads, it is crucial to recognize these attributes as essential for teachers. By being digitally literate and proficient in technology, teachers can effectively share best practices, insights, and resources to enhance their instructional strategies and improve student outcomes. Teachers should be proactive in exploring and adopting new technologies to enhance their teaching methods. By embracing innovation, they can add to the progress of a compassionate learning group within the school, where collaboration and the exchange of ideas flourish. The following are narratives from school head participant 2 and 5.

"I strongly believe that as school heads digital literacy and technological proficiency are crucial attributes for teachers in the 21st century. Teachers should actively innovative in technology in sharing best practices, insights, and resources to improve instructional strategies and student outcomes. Innovative efforts can foster a supportive learning community within the school and enhance the overall educational experience for students." (PSH2)

"In our school, we have mentoring and coaching system in place where experienced teachers support and guide their colleagues in becoming technologically literate.. This system allows for personalized support and feedback to help teachers develop the desired attributes. Our aim is to create a supportive environment that enables teachers to excel in their roles and meet the evolving needs of our students in the 21st century." (PSH5)

The teachers need to actively innovative in technology. They should be proactive in exploring and adopting new technologies to enhance their teaching methods. By embracing innovation, they can contribute to the development of a supportive learning community within the school, where collaboration and the exchange of ideas flourish. In TPACK (Technological Pedagogical Content Knowledge) framework, it was emphasize the importance of teachers being innovative and adaptive in their use of technology. Teachers need to do technology integration should not be seen as an add-on or a separate skill, but rather in order to to enhance teaching and learning experiences (Mishra and Koehler 2006).

The participants emphasized the significance of technological proficiency and digital literacy for teachers in the 21st century. They highlighted the importance of teachers having a solid understanding of technology tools, digital resources, and online platforms that can enhance teaching and learning. The participants below supported these claims.

"Technological fluency is an essential attribute for 21st-century teachers." (PS3)

"Teachers should possess a solid understanding of technology tools, digital resources, and online platforms that can enhance teaching and learning." (PS5)

"As a teacher, I can engage in continuous learning to stay updated with the latest technological advancements and pedagogical approaches."(PT1)

The above finding underscores the significance of technological fluency for teachers and the need for continuous learning to stay abreast of advancements in technology and pedagogy. By possessing a solid understanding of technology tools and engaging in continuous learning, teachers can effectively integrate technology into their teaching practice and provide enhanced educational experiences for their students. By being technologically fluent, teachers can effectively integrate technology into their instructional practices and leverage its potential to support student engagement, learning, and achievement. They should be aware of the various technological tools and resources available to them and be able to utilize them appropriately in the classroom.

As could be noticed in the words of PS5, technological proficiency and digital literacy must include online

technological proficiency of teachers. This result came parallel with the notion forwarded by Stehle and Burton's (2019) which stated that technological proficiency and digital literacy can be also indicated by the teachers' ability to conduct online classes. Teachers who technologically and digitally proficient must also be online technology proficient. Also, this claim was affirmed in Staufer (2022) which stated that proficiency in technology and digital gadgets is not complete when the teachers do not have the sufficient ability to conduct online classes.

The Technological Pedagogical Content Knowledge (TPACK) framework, as emphasized by (Mishra and Koehler 2006), underscores the significance of integrating technology, pedagogy, and content knowledge in the teaching process. It emphasizes that teachers should possess proficiency in utilizing technology effectively to enhance pedagogical practices and facilitate student learning. This integration of technology with pedagogy and content knowledge enables teachers to create engaging and meaningful learning experiences for students.

As stated by Koehler and Mishra (2006), designing educational technology is one of the best ways to learn about it. The design process forces students to constantly consider the intersection of content (what to teach), pedagogy (how to teach it), and technology (which tools to use). Many students enroll in courses, programs, or professional development in educational technology with the expectation of learning very specific skills (how to make web pages, how to use digital video, etc.) and using very specific software (Dreamweaver, Adobe Premiere, etc.). But there are two significant issues with a skills-based approach. First of all, given how quickly technology is developing, any knowledge accumulated about particular technologies or software programs would quickly become outdated. Second, such learning is frequently decontextualized and lacks ties to more general concerns about how to actually implement technology in the classroom (Mishra & Koehler, 2009).

Moreover, in the 21st century, digital literacy and technological proficiency have become key competencies for teachers. Teachers should possess an aptitude to effectively navigating and using digital tools, platforms, and resources to augment their teaching practices. By leveraging digital literacy and technological proficiency, in order to meet the diverse needs and preferences of students, educators can design

engaging and interactive learning environments. This entails utilizing multimedia resources and interactive exercises, and collaborative online tools to facilitate active participation and knowledge construction among students.

Johnson et al. (2016) also emphasize the prominence of digital literacy and technological proficiency for teachers. They highlight that these skills empower educators to stay abreast of technological advancements, adapt to evolving educational landscapes, and effectively integrate technology into their instructional practices. By developing digital literacy and technological proficiency, teachers can enhance their ability to effectively utilize technology as a tool for instruction, assessment, and communication.

Adaptability and Flexibility

The participants stressed the meaning of adaptability and flexibility as one of the key attributes for teachers in the face of a rapidly changing educational landscape. It is essential that teachers to adjust their instructional schemes, approaches, and methodologies to accommodate the evolving needs of students. They should be open to new ideas, pedagogies, and technologies, and participate in constant professional development to stay informed and navigate the changing educational landscape. Teacher participant 1 supported this finding:

"The key attributes that are relevant for teachers in the 21st century in today's rapidly changing world are being flexible and adaptable, teachers need to be able to adapt quickly to new situations and changes in the educational landscape." (PT1)

"We should be able to pivot between in-person, hybrid learning, or online teaching models depending on the situation." (PT2

Flexibility and adaptability for teachers in the 21st century refer to their ability to adjust and change their teaching methods, strategies, and approaches to accommodate students' changing needs and educational landscape. It involves being responsive to new challenges, technologies, and instructional models that arise in the modern educational environment. Flexibility in teaching means being open to different approaches and being able to modify lesson plans, instructional materials, and activities to accommodate students' various learning preferences and needs. It involves

being willing to try new teaching methods, techniques, and technologies that are better suited to engage and support student learnings (Rivera, 2021).

Adaptability, on the other hand, refers to the capacity to adjust and respond effectively to changes in the educational landscape. This may include being able to pivot between different learning modalities, such as in-person, hybrid, or online instruction, depending on the circumstances (Rastogi, 2021). Additionally, it entails keeping abreast of the most recent developments in pedagogy, research, and technology to continually refine and improve teaching practices. In general, flexibility and adaptability for teachers in the 21st century mean being willing to embrace change, being open to new ideas, and being able to adapt teaching strategies and methods to fit the needs of particular students as well as the requirements of the rapidly changing educational environment. By being flexible and adaptable, teachers can design effective lessons that encourage student success in the modern world (Purgason et al., 2019).

The participants emphasize the importance of adaptability and openness to new ideas for teachers in the 21st century. They recognize that the educational landscape is characterized by rapid change and innovation, driven by advancements in technology and evolving pedagogical approaches. Teachers need to be adaptable and flexible in their teaching methods to effectively meet the needs of students in this rapidly changing environment. Teacher participant 3 and Student participant 4 had elaborated the findings:

"The 21st century educational landscape is characterized by rapid change and innovation. Teachers need to be adaptable and open to new ideas, pedagogies, and technologies." (PT3)

"Given the rapid advancements in technology and pedagogical approaches, 21st-century teachers need to be adaptable and flexible in their teaching methods."(PT4)

The ability to adapt new ideas enable the teachers to meet evolving needs. Here, adaptability coupled with open-mindedness is a crucial attribute for teachers in the 21st century. As they gain new ideas or accept sound ideas, they increase their capacity to adjust their instructional strategies, approaches, and methodologies in response to the altering educational environment and

the changing requirements of their students. Teachers need to be aware that the world is constantly changing, and education is not exempt from these changes (Verducci, 2011). They must recognize that the needs and expectations of students are evolving, influenced by factors such as advancements in technology, shifts in societal norms, and emerging educational research. As a result, teachers need to be adaptable and flexible in their effectiveness of the teaching strategies in addressing these changing needs. These were in line with the narratives of Student participant 1 and 2, and School head participant 3.

"The ability to adapt is a fundamental attribute for teachers in the 21st century. Teachers must be able to adjust their instructional strategies, approaches, and methodologies to accommodate the evolving needs of students." (PS1)

"Adaptability allows teachers to embrace emerging technologies, adapt to diverse learning styles, and meet the challenges posed by a rapidly changing world." (PS2)

"Given the rapid advancements in technology and pedagogical approaches, 21st century teachers need to be adaptable and flexible in their teaching methods. They should be open to new ideas, willing to experiment with innovative strategies, and quick to adjust their practices to meet the evolving needs of students. Teachers who possess these attributes can provide relevant and engaging instruction, nurture critical thinking skills, and prepare students to thrive in a rapidly evolving world." (PSH3)

Adaptability in Pedagogical Approaches and Instructional Strategies

The participants stressed the need for teachers to be innovative and adaptable in their pedagogical approaches to accommodate varying student needs and learning preferences. Teachers need to be innovative, adaptable, open-minded, and willing to explore new pedagogical approaches. By doing so, they can effectively cater to diverse student needs, create engaging learning environments, and stay responsive to the changing educational landscape (Prego, 2022). The statements of the ensuing participants corroborated these:

"In the face of the changing educational landscape, teachers need to be innovative in their pedagogical

approaches. They should possess the ability to adapt teaching methods to cater to diverse student needs and learning styles." (PSH1).

"Teachers in this case study context need to be open-minded and willing to adjust their instructional approaches based on the diverse needs of their students." (PT2).

"They embrace change, willingly explore new pedagogical approaches, and adapt their instructional strategies to meet the evolving needs of students." (PT4).

Adaptability in pedagogical approaches and instructional strategies refers to a teacher's capacity to modify and adapt their instructional strategies and methods to accommodate the diverse needs of their students, and the changing educational landscape. In today's dynamic educational environment, where the learning preferences and backgrounds of the students are diverse, teachers need to be adaptable in their pedagogical approaches. This means being flexible and open to employing a kind of instructional approaches, techniques, resources that best suit the learning needs and preferences of their students (Khan et al., 2022). Adaptability also extends to keeping up with the evolving trends and advancements in education. Teachers should be willing to explore new teaching methodologies, integrate emerging technologies, and adapt their instructional strategies accordingly. They should be able to assess evaluate their current strategies' efficacy and make the necessary adjustments to maximize student engagement and learning outcomes (Mulyadi et al., 2019).

Additionally, adaptability in pedagogical approaches involves recognizing and responding to individual differences among students. This may include providing differentiated instruction, individualized support, or utilizing a variety of evaluation techniques to accurately assess student development. By being adaptable in pedagogical approaches and instructional strategies, teachers can design a warm and accommodating learning environment to suit all of the demands of their students. It makes it possible for students to have individualized and fulfilling learning experiences that boost motivation, engagement, and academic advancement (Patzer, 2023).

Teachers have the capacity to employ creativity in order to re-conceptualize and reimagine the evolving demands of the 21st century. These demands are reshaping the margins of content knowledge (CK), moving away from inflexible disciplinary confines toward cross- and inter-disciplinary perspectives. Simultaneously, creativity plays a vital role in teachers' utilization of pedagogical knowledge (PK), aiding them in adapting to the novel requirements of moving beyond rote test-oriented learning and embracing higher-order thinking skills. Moreover, teachers' creativity holds utmost importance in comprehending how they can adjust, repurpose, and effectively incorporate new technology within educational settings, thereby enhancing their technological knowledge (Mishra & Koehler, 2006).

In today's workforce, teachers must possess a range of qualities, including flexibility, adaptability, collaboration, creativity, innovation, pedagogical expertise, and lifelong learning, to enhance their effectiveness and promote student success (Baran-Łucarz & Klimas, 2020). To do so, they need to proactively seek professional development opportunities and adopt innovative teaching methods and technologies while fostering a supportive school environment (Delos Reyes et al, 2017). Embracing Social Cognitive Theory can help teachers understand and improve their effectiveness by examining how their beliefs, behaviors, and environment interact (Bandura, 1991). Filipino teachers should adopt this approach to actively seek growth, adapt to new methodologies and technologies, and recognize the importance of a supportive school environment to tackle contemporary challenges (Delos Reyes et al, 2017). By employing these strategies and considering contextual needs, teachers can excel in their profession and contribute to their students' educational success.

Based on the narratives of the respondents, it was revealed that they recognized flexibility and adaptability, especially flexibility or adaptability in pedagogical approaches, as an attribute of the teacher in the 21st Century. This result is corresponds with the research done by Barak and Levenberg (2016) which showed that flexibility and adaptability is a necessary ability of persons because it enables the person to be adaptable to any situation. In the case of the teachers, the attribute possessing flexibility and adaptability is an important attribute. Teachers who are flexible and adaptable can easily adapt to the changing trends of pedagogical approaches. For instance, in the pandemic

time, the teachers who had the ability to be flexible or adaptable exhibited resiliency and adapted to the adversity of teaching in the New Normal.

Collaboration and Communication Skills

Collaboration and effective communication are crucial attributes for 21st-century teachers. These attributes facilitate student-centered learning, foster collaboration among learners and establish an empowering and friendly atmosphere. Teachers who prioritize collaboration and effective communication can empower students, nurture their social and communication skills, and prepare them for success in an interconnected world (Muhammad, 2019).

During the actual interview of the respondents, they affirmed that collaboration communication skills. This shows that the participants emphasized the defining a collaborative culture is important and mentorship among teachers. They believed that sharing best practices and fostering collaboration could support the acquisition of attributes necessary for 21st-century educators

"Collaboration and effective communication are crucial attributes for teachers in the 21st century. Teachers must facilitate collaborative learning experiences, encourage teamwork, and promote effective communication among students. By fostering collaboration, teachers help students develop essential skills such as teamwork, cooperation, and effective communication, which are highly valued in today's interconnected world."(PT5)

"Effective teachers as communicators in the modern era prioritize student-centered learning. They create classrooms where students are actively engaged, empowered, and encouraged to take ownership of their learning. These teachers foster a positive and inclusive learning environment where students' voices are heard, their interests are valued, and their diverse perspectives are celebrated."(PS4)

"Collaboration and effective communication are indispensable attributes for 21st-century teachers. Today's interconnected world demands teachers who can foster collaboration among students, encourage teamwork, and facilitate meaningful interactions. Strong communication skills enable teachers to effectively convey information, provide feedback, and

establish positive relationships with students, parents, and colleagues."(PS5)

Effective Communication Skills.

The participants recognized the importance of strong communication skills in teaching. Effective communication skills enable teachers to convey information, provide feedback, and establish positive relationships with students, parents, and colleagues. These were supported by student participant 4 and teacher participant 4.

"Strong communication skills as attributes, enable teachers to effectively convey information, provide feedback, and establish positive relationships with students, parents, and colleagues (PS4)."

"Teachers must possess strong collaboration and communication skills (PT4)."

Collaboration and effective communication are considered vital attributes for 21st century teachers. These attributes are crucial for addressing the various needs of students and navigating the complex challenges of the modern educational landscape. Collaboration refers to how well teachers are able to collaborate with their peers and students, parents, and other stakeholders in the educational community. It involves fostering a culture of teamwork, cooperation, and shared responsibility (Martinez et al., 2022). Effective communication is also crucial for teachers in the 21st century. It involves the ability to convey information clearly, listen actively, and engage in meaningful dialogue with students, parents, and colleagues. Through effective communication, teachers can establish positive relationships, provide constructive feedback, address concerns, and create a supportive learning environment. Strong communication skills enable teachers to articulate ideas, share expectations, and facilitate understanding among all stakeholders involved in the educational process (Stehle & Burton, 2019).

Sharing Best Practices.

Participants emphasized the worth of fostering a culture of cooperation and mentorship among teachers as one of the characteristics in the 21st century teachers. They believed that sharing best practices and fostering collaboration could support the acquisition of attributes necessary for 21st-century educators.

"Creating a culture of collaboration and mentorship is essential for supporting teachers in acquiring the attributes of 21st-century educators."(PS2)

"Teachers in this case study context need to be open-minded and willing to adjust their instructional approaches based on the diverse needs of their students." (PT2)

"These attributes enable teachers to effectively engage students, leverage technology for learning, foster collaboration, develop critical thinking skills, and adapt to the changing educational landscape." (PT3)

Collaboration among Educators.

Participants emphasized the importance of teachers actively collaborating with their colleagues to improve instructional strategies and student outcomes. Collaboration among educators refers to the intentional and active engagement of teachers in working together, sharing ideas, and collectively problem-solving to strengthen the way they teach. It involves creating opportunities for teachers to collaborate, communicate, and learn from one another's experiences and expertise (Rimm-Kaufman & Hulleman, 2018). This attribute was reiterated by the following participants:

"I actively collaborate with their colleagues, sharing best practices, insights, and resources to improve instructional strategies and student outcomes." (PH2)

"Collaboration and effective communication are indispensable attributes for 21st-century teachers." (PS4)

"I actively participate in professional learning communities both within my school and through online platforms." (PT2)

"Teachers should actively collaborate with their colleagues, sharing best practices, insights, and resources to improve instructional strategies and student outcomes." (PSH2)

"Teachers should demonstrate empathy and emotional intelligence in their interactions with students" and *"Teachers encourage collaborative work among students." (PS1)*

"Teachers must facilitate collaborative learning environments, promote teamwork, and facilitate effective communication among students." (PT2)

Through collaboration, educators can address common challenges, investigate novel approaches to teaching, and modify instructional strategies in line with best practices supported by evidence. It allows them to leverage the collective wisdom and experience of their peers, leading to more effective and impactful teaching methods. Furthermore, collaboration among educators can contribute to a supportive and collaborative school culture. It encourages teachers to feel a sense of identity, credibility, and shared accountability, fostering an enjoyable workplace and fostering career growth. Overall, collaboration among educators is essential for improving instructional strategies and student outcomes. By actively collaborating with their colleagues, teachers can tap into the collective expertise and foster a collaborative learning community, ultimately benefiting both teachers and students (Stehle & Burton, 2019).

Effective Communication for Relationship Building.
The participants recognized effective communication as an indispensable attribute for 21st-century teachers. They highlighted the importance of clear communication, active listening, constructive feedback, and positive relationships with stakeholders. Effective communication describes teachers' proficiency to convey information, ideas, and instructions clearly and accurately to students, parents, colleagues, and other stakeholders. It involves employing various communication strategies, such as verbal, non-verbal, written, and digital communication, to ensure messages are understood and meaningful interactions take place (Shidiq, 2019). This attribute was emphasized by the following participant:

"Collaboration and effective communication are indispensable attributes for 21st-century teachers." (PS4)

"Teachers should possess the 4 C's skills: critical thinking, collaboration, communication, and creativity." (PT1)

"Effective communication enables teachers to convey information clearly, listen attentively to student needs, provide constructive feedback, and establish positive relationships with all stakeholders involved in the education process." (PT4)

Developing connections with students, parents, and coworkers in the context of school depends on successful interaction. It involves actively listening, providing clear explanations, offering constructive feedback, and engaging in open and respectful dialogue. Effective communication helps establish trust, fosters positive connections, and promotes a supportive learning environment. Teachers with strong communication skills can create a conducive atmosphere for learning, where students feel comfortable expressing their thoughts, asking questions, and seeking clarification. It enables teachers to address individual needs, provide personalized guidance, and adapt their instruction accordingly (Popkova & Gulzat, 2020).

Moreover, effective communication is essential in collaborating with colleagues, as it provides for the exchange of ideas, collaborative problem-solving, and the sharing of best practices. It facilitates teamwork, coordination, and the development of a professional learning community within the school. Effective communication is an indispensable attribute for 21st-century teachers. By effectively communicating, teachers can build strong relationships, enhance student engagement and learning, collaborate with colleagues, and create a positive and inclusive learning environment. It is a fundamental skill that supports effective teaching practices and contributes to overall educational success (Qadir, 2020).

Teachers serve an important part in promoting student engagement and classes in both traditional and online classrooms. In online classes, Teachers should make confident that their teaching ideas, methods, and processes endorse operational course assistance, design of tests, and engagement among students. (Chatterjee et al., 2018). By actively communicating and interacting with their students, teachers can create an environment that supports student engagement and enhances their overall learning experience (Ouellette et al., 2018). This "teaching presence," which is characterized by effective communication and the implementation of pedagogical assumptions, is a fundamental component that underpins student engagement and learning in the digital learning environment (Siti Nur et al, 2020). Smith's (2021) article, "Effective Communication Strategies for Collaborative Learning in Diverse Classrooms," provides valuable insights on how to build effective communication strategies in diverse classrooms to foster collaborative learning. The article highlights the need

for comprehending the diverse backgrounds of students and creating an open and stimulating place to learn that acknowledges and values these differences.

Smith et al. (2021), emphasizes that effective communication is critical in enabling effective collaboration. To facilitate communication, educators must encourage open and respectful dialogue and must seek to understand the unique perspectives of each student. For doing this, a variety of ways to interact can be used, such as using active listening techniques, providing chance for students to express their opinions, and creating a safe space where students feel respected and valued.

Critical Thinking and Problem-Solving Skills

Critical thinking and problem-solving skills are essential skills and attributes for effective teaching in the 21st century. By adopting these practices, in order to help students become active learners who are ready for the challenges of today's world, teachers can increase their involvement, encourage critical thinking, and give them the resources they need. Student participant 3 underscores the paramount importance of critical thinking and problem-solving skills for teachers in the 21st century. As information becomes readily accessible, teachers are tasked with guiding students in analyzing, evaluating, and synthesizing information from various sources. Student participant 4 reiterates the significance of student-centered learning in the modern era. Effective teachers prioritize creating classrooms where students are actively engaged, empowered, and urged to assume responsibility for their education (Muhammad, 2019).

"For me, critical thinking and problem-solving skills are paramount for teachers in the 21st century. As information is readily accessible, teachers must guide students in analyzing, evaluating, and synthesizing information from various sources. By fostering critical thinking skills, teachers empower students to become active learners, capable of solving complex problems and making informed decisions." (PS3)

"Effective teachers in the modern era prioritize student-centered learning. They create classrooms where students are actively engaged, empowered, and encouraged to take ownership of their learning. These teachers foster a positive and inclusive learning environment where students' voices are heard, their

interests are valued, and their diverse perspectives are celebrated." (PS4)

The teachers recognized the role of teachers in promoting critical thinking and problem-solving skills among students. These skills are essential for success in academic pursuits, professional careers, and everyday life, enabling individuals to navigate complex challenges, make informed decisions, and contribute meaningfully to students and real life situations in society (Prego, 2021).

"Effective educators should promote critical thinking and problem-solving skills among their students." (PT5)

"21st-century educators should promote critical thinking and problem-solving skills among their students." (PT5)

"Teachers should design lessons that encourage inquiry, analysis, and the application of knowledge to real-world situations." (PT5)

School head participants added that there was the need for teachers to foster critical thinking and problem-solving skills among their students. By providing opportunities for inquiry, analysis, and reflection, teachers empowered students to think critically and develop effective problem-solving strategies. School head participant 4 supported that "Teachers should foster critical thinking and problem-solving skills in their students by providing opportunities for inquiry, analysis, and reflection." (PSH4)

Critical thinking and problem-solving skills are essential skills and attributes for effective teaching in the 21st century. By fostering these skills in students, teachers empower them to become critical thinkers, problem solvers, and lifelong learners who are well-equipped to navigate the challenges of the modern world. In the 21st century, where information is readily accessible and the ability to navigate complex problems is increasingly valued, these skills have become essential for effective teaching (Rawlinns, 2022).

Critical thinking is the process of analyzing, evaluating, and synthesizing information, ideas, and arguments. It involves thinking critically, logically, and independently, questioning assumptions, and making informed judgments. Teachers who possess strong critical thinking skills can guide students in developing

these skills, helping them become active learners who can navigate complex problems and make well-reasoned decisions (Khan et al., 2017).

On the other hand, the ability to recognize, assess, and successfully resolve issues is referred to as having problem-solving skills. It implicates employing rational and creative thinking, considering different perspectives, and finding innovative solutions. Teachers who foster problem-solving skills in their students enable them to approach challenges with a growth mindset, persevere through obstacles, and develop resilience despite difficulties (Purgason et al., 2019).

The twenty-first century, where information is readily accessible and the ability to navigate complex problems is increasingly valued, critical thinking and problem-solving skills have become essential for effective teaching. Teachers have to support students as they acquire these skills and abilities to become active and engaged learners who can apply their knowledge to real-world situations. By integrating critical thinking and problem-solving activities into their instructional practices, teachers can enhance student engagement, develop higher-order thinking skills, and promote independent and lifelong learning. These skills are vital in preparing students for the obstacles of the rapidly changing and complex world they will face beyond the classroom (Rastogi, 2021).

According to Kim et al. (2015), teachers can amplify student engagement, cultivate higher-order thinking abilities, and foster independent and lifelong learning by incorporating critical thinking and problem-solving activities into their instructional approaches. These competencies are of the utmost importance for granting learners the abilities they desire to navigate the increasingly intricate and ever-evolving challenges of the world outside the confines of the classroom.

Teachers are required to play an essential position in guaranteeing online learning is meaningful and assessment practices are effective. This includes designing instructional tasks, objectives and creating a comprehensive course outline with all course constituents and features. Their performance heavily influences the success of online learning and involves subject matter expertise, integration of plans, instructional devices, evaluation and task design that cater to various learning styles, nature, and intelligence of learners. Furthermore, teachers must ensure proper

student assessment and feedback using digital technology in their teaching strategies. It serves to uphold high expectations for achievement, intellectual credibility, and professional conduct among students, which can be achieved by providing appropriate feedback to guide their progress and development. By combining effective teaching practices, thoughtful assessment design, and the use of digital technology, trainers can foster likeable and impactful online learning environments that encourage learning among students and growth (Bennett, et al., 2017).

Global Awareness and Cultural Competence

Participants in the study highlighted the importance of global awareness and cultural competence particularly in the context of the 21st-century classroom. Teacher participant 1 emphasized the focus on enhancing the attributes of teachers in the modern era. Such programs provide teachers with resources and strategies to incorporate global perspectives into the curriculum, promoting a deeper understanding of diverse cultures and fostering empathy among students. This suggests that teachers who participate in these programs are more prepared to navigate a globally interconnected world and create a more inclusive learning environment. Student participant 5 reinforced the significance of cultural competence in diverse educational settings. It emphasizes the need for teachers to be sensitive to cultural differences, embrace diversity, and create inclusive classrooms where all students feel valued and respected. School head participant 5 echoed the importance of cultural competence. It emphasizes the role of teachers in fostering an environment where students from diverse backgrounds feel valued, respected, and represented. Here are some direct quotes from those who participated:

"Yes, I have participated in professional development programs that focus on enhancing the attributes of 21st-century teachers, and this program focuses on global awareness and cultural competence, which I believe important skills for 21st century teachers. This program impacted my teaching practices because in a globalized world, teachers need to foster global awareness and cultural competence among our students. Professional development programs can provide us with resources and strategies to incorporate global perspectives into the curriculum, promoting a deeper understanding of diverse cultures and fostering empathy among students." (PT1)

"Cultural competence is increasingly vital attributes in today's diverse educational environments. Our teachers should be sensitive to cultural differences, embrace diversity, and create inclusive classrooms where all students feel valued and respected. By cultivating cultural competence, teachers can promote understanding, empathy, and global citizenship among their students." (PS5)

"As a school head, I do believe that in the diverse 21st-century classroom, teachers must be culturally sensitive and promote inclusivity. They should foster an environment where students from various backgrounds feel valued, respected, and represented. Teachers should integrate culturally relevant content into the curriculum, celebrate diversity, and encourage students to share their unique perspectives. By embracing inclusivity, teachers create an enriching educational experience for all students."(PSH)

School head participant 5 recognized the importance of cultural sensitivity in the 21st-century classroom. Teachers in the 21st century need to integrate culturally relevant content into the curriculum which celebrate assortment, persuade students to present their original viewpoints Teachers should integrate culturally relevant content into the curriculum, celebrate diversity, and encourage students to share their unique perspectives. Below are the utterances of the school head participants:

"Teachers must be culturally sensitive and promote inclusivity." (PSH5)

"Teachers should integrate culturally relevant content into the curriculum, celebrate diversity, and encourage students to share their unique perspectives." (PSH5)

In the context of the 21st-century classroom, which is considered through increasing globalization and cultural diversity, participants emphasized that teachers must stray from the conventional modes of instruction and incorporate global perspectives into the curriculum. This includes fostering an understanding of diverse cultures, promoting empathy among students, and creating an A warm educational setting where each student is treated with respect and value (Martinez et al., 2019).

By recognizing the significance of cultural competence and global awareness, the participants in the study highlighted the need for teachers to adapt their teaching practices to satisfy the needs of an environment that evolves promptly. They emphasized that activities for personal development and resources can play a crucial character in equipping teachers with the needed tools and strategies to incorporate these elements into their education effectively (Rimm-Kaufman et al., 2018).

The recognition of the relevance of global awareness and cultural competence in the 21st-century classroom emphasizes the value of preparing teachers, curriculum development, inclusive learning environments, and global citizenship education. It focuses on global awareness and cultural competence underscores the crucial importance of training and developing teachers programs that empower teachers with the knowledge, skills, and strategies to navigate cultural diversity and promote inclusivity. These can guide educational institutions and policymakers in fostering a more meaningful and education that is inclusive and enables students for problems and opportunities of the contemporary world (Martinez, 202).

The discovery aligns with the focus on the positive results of incorporating social and emotional learning (SEL) into teaching methodologies. SEL has the potential to boost students' academic and social-emotional achievements, indicating the efficacy of SEL interventions in promoting both student well-being and academic performance (Durlak et al., 2021). Furthermore, it highlights teachers' role in cultivating students' social and emotional growth, and suggests that the intentional inclusion of SEL practices can amplify student engagement, motivation, and overall prosperity (Jones & Bouffard, 2020).

Support that School Heads and Other Stakeholders Help Teachers

Acquire the Key Attributes of 21st Century Teachers

According to the participants' responses, three themes emerged as the support that school heads and other stakeholders help teachers acquire the key attributes of 21st century teachers. These are, Leveraging Technology in Classroom Instructions, Student-Centered Approaches, Professional Development, Policy Alignment and Recognition

Leveraging Technology in Classroom Instruction

Leveraging technology in classroom instruction is an effective means of supporting teachers in acquiring the key attributes of 21st-century teachers, and school heads and other stakeholders perform a significant role in facilitating this provision. The participants underscored

head teachers' responsibilities and stakeholders in supporting teachers through the use of technology. Given teachers the chance to improve their skills and stay current with best practices, they can make use of online platforms, webinars, virtual conferences, and professional learning networks, and engage in professional growth. This shows the possibilities of modern technology to facilitate ongoing learning and collaboration among educators. By leveraging technology effectively, teachers can engage students in meaningful ways, customize instruction to individual needs, and create interactive learning experiences that foster the development of 21st-century skills. School head participant 2 and student participant 5 supported the finding:

"Promoting the integration of technology into teaching practices by providing access to resources, tools, and training. Encourage teachers to explore innovative technological applications, digital content, and online learning platforms. By leveraging technology effectively, teachers can engage students, personalize instruction, and facilitate interactive learning experiences that develop 21st-century skills." (PSH2)

"School heads and stakeholders can leverage technology to promote continuous professional development, offering online platforms, webinars, virtual conferences, and professional learning networks." (PS5)

"We provide dedicated technology integration support to assist teachers in effectively integrating technology into their instructional practices. This support includes training sessions on specific tools and software, one-on-one coaching and mentoring, and troubleshooting assistance. Teachers can seek guidance and support from our technology integration specialists to enhance their technological skills and confidently incorporate technology into their teaching." (PSH3)

Teachers claimed that leveraging technology in classroom instruction supports them in acquiring the key attributes of 21st-century teachers. It enables the incorporation of 21st-century teaching practices, such as technology integration, student-centered instruction, critical thinking development, and personalized learning. By integrating technology, they observed improvements in student engagement, motivation, academic performance, critical thinking skills, and research abilities. These results demonstrate how crucial

it is to use technology as a means to enhance teaching and the school environment of the twenty-first century. Teachers also added the positive impact of leveraging technology for teaching information literacy skills and effective online research techniques. For them, the incorporation of digital tools and teaching information literacy contributes to significant improvements in students' research skills, further emphasizing the value of technology integration in supporting their learning outcomes. The following are the lines of the teacher participant:

"By incorporating the attributes of 21st century teaching, such as technology integration, student-centered instruction, and critical thinking development, I have observed improved student engagement, increased motivation, and enhanced academic performance." (PT3)

"I incorporate the personalized learning approach in my classroom. I give activities that develop critical thinking, collaboration, communication, and creativity. It provides options for student choice in assignments, allows for flexible pacing, and offers varied resources and materials to accommodate diverse learning preferences." (PT1)

"I guide my students on effective online research techniques, teaching them how to evaluate the credibility and reliability of online sources." (PT2)

"I teach students how to critically evaluate information sources, considering factors such as author credibility, bias, and relevance." (PT4)

"By incorporating digital tools and teaching information literacy, students have shown significant improvements in their research skills." (PT5)

Leveraging technology in classroom instruction can support teachers in acquiring the key attributes of 21st-century teachers by introducing authentic and formative assessments that assess students' abilities to utilize understanding and skills in practical situations. It emphasizes the need to move away from traditional, rote memorization-based assessments towards assessments that measure higher-order thinking skills, creativity, and problem-solving abilities. This is supported by school head participant 5.

"Our teachers are introduced to the use of authentic and formative assessments that assess students' abilities to apply knowledge and skills in real-world contexts. Move away from traditional, rote memorization-based assessments and embrace assessments that measure higher-order thinking skills, creativity, and problem-solving abilities." (PSH5)

By incorporating technology into the assessment process, teachers can create opportunities for students to show that they comprehend and skills in authentic and meaningful means. Technology can enable the design of assessments that require students to use their expertise and skills to tackle issues in actual life or engage in creative and critical thinking tasks. This shift in assessment practices aligns with the attributes of 21st-century teaching, as it focuses on evaluating students' abilities to think critically, solve complex problems, and demonstrate creativity (Patzer, 2023).

Utilizing technology in classroom instruction means that utilizing technology as a tool in educational settings can assist teachers in developing and embodying the essential qualities and skills required in the 21st century. It provides valuable support to teachers in various aspects of their professional development. Technology can assist in enhancing teaching methodologies, promoting student engagement, facilitating personalized learning, fostering critical thinking, and presenting chances for growth in one's career and continuous learning. By effectively integrating technology into classroom instruction, teachers can develop and strengthen the key attributes required in the 21st century. Technology serves as a supportive tool that enables educators to enhance their teaching practices, engage students in meaningful ways, foster essential skills, and stay relevant in an ever-evolving educational environment (Shidiq & Yamtinah, 2019).

According to Kereluik et al. (2013), teachers need to be knowledgeable about the various technologies present in their learning environment so they can use them as instructional strategies. They have expressed doubts regarding the readiness of a school to persuade teachers that technology is a tool they can use to assist in doing their jobs. Such issues are brought on by a lack of resources, a lack of practical training, and a lack of or outdated, out-of-date facilities. According to Darling-Hammond and McLaughlin (2017), teacher training is viewed as a key strategy for enhancing teachers' subject-matter expertise as well as their instructional strategies

and practices. According to this theory, teachers become more competent the more training they receive, especially when it comes to facilitating classroom instruction.

Frequently, teachers adopt school goals as their guiding principles that steer their planning of classroom instructional activities. This aligns with the belief that all their classroom actions should align with the school's objectives. This underscores the evident connection between teachers' instructional competence and their adherence to these goals. When teachers effectively oversee instructional practices, they acquire instructional competence, establishing the premise that this management skill serves as a precursor to teacher competence (Abdollahi, 2017).

Professional Development

School leaders and other stakeholders play a crucial role in enabling teachers' access to specialized growth programs so they can improve and develop the key traits required for the 21st century.

The teachers demonstrated the meaning of advancement in career and the support they need from school heads and stakeholders in helping them acquire the key attributes of 21st-century teachers. Through participation in professional development programs, engagement in professional learning communities, staying updated on emerging technologies, and being encouraged to embrace innovation, they will be empowered to boost the ways they teach and adapt to the changing needs of modern education. The following were the utterances of teacher participants:

"Participating in professional development programs has had a profound impact on my teaching practices. These initiatives have equipped me with innovative strategies, instructional approaches, and technological tools that have enhanced student engagement and learning outcomes." (PT4)

"I actively engage in professional learning communities, both online and offline, to collaborate with other educators. I participate in workshops, conferences, and webinars where I can learn from experts in the field and exchange ideas with peers." (PT3)

"I make a conscious effort to stay updated on emerging technologies and their educational applications. I regularly read educational technology publications,

follow relevant blogs and websites, and engage in online communities to stay abreast of the latest trends and advancements." (PT5)

"School heads and stakeholders encourage teachers to embrace innovation and experimentation in their teaching practices. They provide a supportive environment that allows teachers to take risks, try new approaches, and implement creative instructional strategies." (PT2)

When teachers demonstrate the necessity of professional development and posing for help from school administrators and stakeholders, it creates a synergy that leads to enhanced teaching practices, a culture of collaboration, innovation, and improved student outcomes. By valuing and investing in teachers' professional growth, schools may develop a climate that benefits both teachers and students in the 21st-century educational landscape. Hence, teachers need to be supported with their needs.

School heads and stakeholders made efforts to strengthen the academic growth of teachers in acquiring the key attributes of 21st-century teachers. These efforts include tailored professional development, online courses and webinars, training and mentoring programs, and a focus on continuous improvement and a good conditions for learning. By providing these supports, school heads and stakeholders empower teachers maintain abreast of educational trends in order to hone their skills, and implement effective teaching practices that align with the demands of the 21st century. This finding is highlighted in the narratives of the following school head participants:

"In our specific school setting, enhancing the attributes of 21st-century teachers requires tailored professional development, collaborative partnerships, technology-enhanced learning, student-centered approaches, and evaluation and feedback mechanisms. By implementing these strategies, we ensure that our teachers are equipped with the skills and competencies to meet the needs of our students and prepare them for the demands of the 21st century. Emphasizing continuous improvement and fostering a supportive learning environment are crucial in empowering our teachers to excel as educators in our ever-changing world." (PSH1)

"We offer online courses and webinars that allow teachers to learn at their own pace and convenience.

These courses cover topics such as digital literacy, blended learning, flipped classrooms, and educational technology tools. They provide teachers with opportunities to explore new teaching methods and stay updated with the latest trends in education." (PSH2)

"We practice training and mentoring programs where experienced teachers offer leadership and support to their co-teachers. This one-on-one or small group support helps teachers implement new teaching strategies, reflect on their practices, and receive feedback for continuous improvement." (PSH3)

When school heads and stakeholders make deliberate efforts to assist in the growth as professionals in acquiring the key attributes of 21st-century teachers, it results in a more effective and future-ready education system. These efforts provide towards the ongoing enhancement of teaching strategies, alignment with educational trends, and the cultivation of a culture of learning and growth among educators. Ultimately, it benefits students by ensuring they enjoy excellent guidance that provides them for profitable careers in the twenty-first century (Mulyadi et al, 2020).

Student participants recognized the vital role of school heads and stakeholders in supporting teachers' professional development and acquisition of the key attributes of 21st-century teachers. They do so by offering professional development opportunities, facilitating the use of tools and technology, establishing evaluation and feedback mechanisms, and prioritizing ongoing training and development. Through these efforts, school heads and stakeholders contribute to creating an environment where teachers can continuously improve and thrive as educators in the 21st century. The following lines from the student participants supported the fining:

"Our school heads and stakeholders have a significant role in supporting teachers in acquiring the key attributes of 21st century teachers. By offering professional development opportunities, providing access to resources and technology, fostering collaboration, recognizing innovation, and providing feedback and support, they create an environment where teachers can excel and thrive as modern educators." (PS1)

"To promote continuous professional development, school heads and stakeholders must provide teachers

with access to a wide range of resources. This includes financial support for attending conferences, workshops, and training programs related to 21st century teaching practices." (PS2)

"By establishing evaluation and feedback mechanisms is essential for supporting teachers in their journey to acquire the key attributes of 21st century teachers. Our school heads and stakeholders can implement regular evaluations of teaching practices, incorporating observations, peer feedback, and student feedback." (PS4)

"School heads and stakeholders can prioritize professional development as a means to support teachers in acquiring the key attributes of 21st century teachers. By offering regular training sessions, workshops, and seminars focused on technology integration, instructional strategies, and innovative teaching methods, they provide teachers with opportunities to enhance their skills and stay updated with the latest advancements." (PS5)

When school heads and stakeholders actively support teachers' professional development through various means, they promote the development and the achievement of teachers as educators in the 21st century. These efforts lead to modified pedagogies, student engagement, and learning outcomes, creating an environment where teachers can continuously improve, thrive, and present students an excellent schooling that equips them for the difficulties ahead and opportunities of the modern world (Khan et al., 2017).

Sule (2012) proves that principal are very conscious with their task. This connects to the idea that school principal or school leader and the stakeholders make efforts to support actively using knowledge gained from in-service training in the classroom. This exposes why teachers who have attended seminars do a re-echo meetings for their co-teachers who have not attended such seminar to inform everybody of the manners taken in the seminar. The principal being conscious with their tasks extends to the idea that school administrators direct or take teacher in-service activities that are focused on instruction in order to get information that can support them improve the education and instruction. This idea also includes the information that is a strong management to ensure that important in-service activities are attended by the entire staff and that they

are in line with the school's objectives, school leaders should secure their participation (Garcia, 2019).

In the modern workforce, teachers must possess attributes such as flexibility, adaptability, collaboration, creativity, and innovation, lifelong learning, and pedagogical expertise (Baran-Łucarz & Klimas, 2020). These attributes are essential for enhancing teacher effectiveness and student success. Teachers in the twenty-first century must be proactive in seeking out professional development opportunities, adapting to new teaching strategies and technologies, and cultivating a supportive school environment (Delos Reyes et al., 2017). By embodying these qualities, teachers can effectively navigate the challenges of the modern workforce and contribute to positive student outcomes.

To fulfill the requirements of the 21st century, teachers should possess attributes such as cultural competency, strong communication skills, and problem-solving abilities, as evidenced by a case study conducted on teachers (Astuti et al., 2019). These attributes are crucial for educators to effectively traverse professional development and to accommodate the changing educational environment of the modern era.

Policy Alignment and Recognition
Policy Alignment and recognition as a support from school heads and stakeholders in helping teachers acquire the key attributes of 21st-century teachers refer to the intentional alignment of policies and practices with the desired attributes and skills expected of teachers in the modern education landscape. It involves creating a supportive framework that encompasses policies, guidelines, incentives, and recognition mechanisms to facilitate teachers' professional growth and development (Fullan, 2021).

Teachers are essential for crafting meaningful online learning opportunities and ensuring sound assessment procedures. Designing educational and evaluation activities that support the objectives and goals of learning is their duty, as well as producing comprehensive outline courses that include all necessary materials and components. (Mulyadi et al.,2020). The success of accessible education heavily relies on teachers' performance, including their mastery of the subject matter, integration of policies and finding out innovations, as well as the creation of suitable evaluation tasks that respond to the learning goals and

take consideration different ways of learning, traits, and cognitive abilities of learners (Dabbagh et al, 2018).

Participant highlighted the importance of policy alignment in supporting teachers' acquisition of the key attributes of 21st-century teachers. By creating supportive frameworks, focusing on needed policy changes, and emphasizing the gist of constant learning and adequate support, policymakers can effectively equip teachers with the needed skills and competencies to encounter the evolving demands of modern education. School heads participant 3 said that school heads and stakeholders can establish a framework that prioritizes continuous professional development. Participant 2 emphasized that by prioritizing policy changes that better address the needs of 21st-century teachers, policymakers can provide educators with the knowledge and abilities necessary for developing a conducive atmosphere that empowers teachers to excel in their profession. School head participant 5 acknowledged that many education systems and policy frameworks already recognize the significance of integrating technology, however, to better address these attributes, policy initiatives need to emphasize the importance of continuous learning and give teachers enough resources and assistance to develop their skills in these areas. The following are the lines of the participants to support the finding:

"School heads and stakeholders can create a supportive framework that emphasizes the importance of continuous professional development. This framework should include policies, guidelines, and incentives that encourage teachers to engage in ongoing learning opportunities. By recognizing and rewarding teachers' commitment to professional growth, school leaders can cultivate a culture where continuous development is valued and embraced." (PS3)

"While the attributes of 21st century teachers align with current policy initiatives and guidelines, there is still room for improvement. By focusing on …policy initiatives can better address the needs of 21st century teachers. It is through these improvements that we can equip teachers with the necessary skills and competencies to effectively prepare students for the challenges and opportunities of the dynamic and rapidly evolving educational landscape. By prioritizing these changes, policy frameworks can create an enabling environment that empowers teachers to excel in their

profession and ensure the success of future generations." (PSH1)

"We know that many education systems and policy frameworks recognize the importance of integrating technology, promoting student-centered learning, and fostering critical thinking skills. Policy initiatives should emphasize the importance of continuous learning and provide adequate resources and support for teachers to develop their skills in these areas. To better address these attributes, policy initiatives can, clearly articulate the expectations and attributes of 21st century teachers, provide dedicated funding and resources for teacher professional development, particularly in areas such as technology integration and student-centered approaches." (PSH5)

The student participants saw the significance of recognition as a support mechanism from school heads and stakeholders. By acknowledging and celebrating exemplary teaching practices, providing a supportive framework with incentives, and offering comprehensive support systems, school leaders empower teachers to acquire the key attributes of 21st-century teachers and create a positive and progressive educational environment. The recognition helps create a culture where these practices are valued and encourages other teachers to adopt and integrate similar approaches into their own instruction. With these, school heads and stakeholders provide motivation and inspiration to both the recognized teachers and their peers. Student participants 2, 3 and 1 reiterated the need of recognition based on the following lines:

"I think by acknowledging and celebrating the achievements of teachers who demonstrate exemplary 21st century teaching skills is essential. School heads and stakeholders can recognize and reward teachers who effectively integrate technology, digital literacy, and innovative pedagogical practices into their instruction. This recognition not only motivates teachers but also inspires others to embrace similar practices." (PS2)

"School heads and stakeholders can create a supportive framework. This framework should include incentives that encourage teachers to engage in ongoing learning opportunities. By recognizing and rewarding teachers' commitment to professional growth, school leaders can cultivate a culture where continuous development is valued and embraced." (PS3)

"Our school heads and stakeholders have a significant role in supporting teachers in acquiring the key attributes of 21st century teachers. By offering professional development opportunities, providing access to resources and technology, fostering collaboration, recognizing innovation, and providing feedback and support, they create an environment where teachers can excel and thrive as modern educators." (PS1)

Policy Alignment involves the deliberate effort of designing educational policies, guidelines, and initiatives to facilitate teachers in acquiring the essential qualities of 21st-century educators. This entails updating curriculum frameworks, integrating technology effectively, encouraging student-centered learning approaches, nurturing critical thinking skills, and addressing emerging educational trends. By aligning policies with these attributes, school leaders and stakeholders create a supportive environment that empowers teachers to overcome the barriers of modern learning more effectively (Evans, C. 2020).

Recognition, on the other hand, involves acknowledging and valuing teachers' efforts and achievements in developing the key attributes of 21st-century teachers. It encompasses the recognition of innovative teaching practices, effective integration of technology, collaboration, continuous professional development, and pedagogical advancements. School heads and stakeholders play a crucial role in providing recognition through various means such as awards, incentives, acknowledgment, and celebration of teachers' accomplishments. By recognizing and rewarding teachers' commitment to professional growth and the application of modern teaching approaches, it fosters a culture where continuous development is valued and inspires other teachers to follow suit (Johnson at al., 2023).

Policy Alignment and Recognition work hand in hand to support teachers in acquiring the key attributes of 21st-century teachers. The alignment of policies ensures that the necessary structures and resources are in place to enable teachers' professional growth, while recognition motivates and incentivizes teachers to embrace innovative teaching practices and continuous learning. Together, these supports from school heads and stakeholders cultivate a climate that supports teachers' excel, adapt to evolving educational needs, and provide high-quality education in order to make students ready

for the difficulties and opportunities of the twenty-first century (Hirsh-Pasek et al., 2020).

CONCLUSIONS AND RECOMMENDATIONS
Conclusions
The imperative enhancement of digital literacy and technological proficiency not only enriches the educational journey but also addresses the dynamic changes in the field of education. Educators must embrace flexibility in adapting instructional strategies to meet students' evolving wishes, fostering openness to new ideas, pedagogies, and technologies. Prioritizing collaboration and effective communication empowers teachers to cultivate students' social and communication skills, preparing them for success in a global society. Teachers play a crucial role in elevating student engagement, fostering critical thinking, and empowering proactive learners for the contemporary world. Acquisition and enhancement of 21st-century skills are essential, improving teachers' soft skills and key attributes. Leveraging online platforms, webinars, and virtual conferences provides valuable opportunities for continuous professional growth. Technology integration in classroom instruction supports teachers in acquiring essential attributes of 21st-century educators. School heads and stakeholders play a vital role in facilitating teacher support, emphasizing the integration of social and emotional competencies into the curriculum for students' holistic development and success in various aspects of life.

Recommendations
Based on the findings and conclusions, it is recommended that schools could consider supporting professional development by offering regular training and workshops to enhance teachers' technological and digital literacy. Encouraging reflection and self-assessment among educators, providing opportunities for them to evaluate their instructional practices and seek feedback from peers, students, and administrators, could be beneficial. School heads play a vital role in ensuring teachers have access to research-based resources, such as educational journals and online databases, and maintaining a well-stocked professional library. Additionally, organizing meetings or discussions to share and discuss research findings among the teaching staff is a potential avenue. Involving stakeholders, including parents, community members, and education policymakers, in supporting teaching practices is also recommended, through forums, meetings, and partnerships with external organizations.

Teachers, in turn, could employ diverse instructional strategies and activities to actively engage students, incorporating technology tools for assessment and integrating digital citizenship education into the curriculum. Furthermore, fostering a growth mindset among students, encouraging active participation, collaboration, self-reflection, and goal setting is essential. Lastly, future researchers could explore specific instructional strategies and the long-term effects of 21st-century skills for teachers.

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