

Original Research Article

Teaching the 21st Century Skills: Teachers' Competence, Practices and Challenges

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ABSTRACT

This research is anchored on the conceptual framework that the 21st century is a driving force for change of the educational system. The rise of technology makes the societal change which characterized the 21st century from industrial to knowledge based. Thus, schools worldwide are organized to prepare students to succeed in the 21st century and do something extraordinary. The study employed the descriptive-correlational method of research with the primary goal to assess the skills, practices and challenges of teachers in the teaching of the 21st century skills in both public and private high schools in the province of Bohol. It was found out that there is a significant difference in the teachers' assessment of their competence, practices and challenges of teachers from the public and private school. It was also shown that private school teachers have a high level of performance in their practices compared to that in the public schools. It was also revealed that public school teachers faced more challenge than those in the private schools. Moreover, there is a moderately strong correlation between teachers' competence and their practices in teaching the 21st century skills.

Introduction

The researcher has observed that the 21st century is rapidly changing the world in every dimension of man. Schools become the nerve centers for teachers and students to connect with the world and understand the issues that our modern world faces. Teachers, as key players in accelerating educational improvement continually design and evaluate skills needed to prepare skilled millennium generation in order to compete in the global economy.

Today, curriculum developers advocate integrating core academic knowledge, critical thinking and social skills in teaching and learning to help students master the multi-dimensional abilities that are required in the 21st century. Hence, integrating 21st century skills can help to complement the new literacies in education today such as digital, media, visual, data, game, health and financial, civic and ethical, news, coding, computational and foundational (Pietila, 2017) and the 4Cs (critical thinking, communication, collaboration and creativity) to obtain deeper understanding of the subject (Alismail & McGuire, 2015).

Education becomes more important to ensure students to get a skill, innovation ability, creativity, teamwork and learn how to use life skill in their life (Wrahatnolo & Munoto, 2018). With the advancement of science and technology, it is indeed true that globalization and internationalization of education are to be considered as challenges that every country must face. One of today's challenges in education is the promotion of the 21st century skills among students through the effort of a 21st century teacher.

Incorporating 21st century skills into the educational systems will equip students, workers and citizens with the vital skills necessary to earn a living and prosper in life. Twenty-first century elements which include core subjects, teacher quality, purposeful assessment, technology tools and the ability to learn and apply life skills within a global context should be a top priority for all children (White, 2012).

Although the 21st century has begun 18 years ago and changed the Filipino's lifestyle and mindset on the role of technology, especially in communication, the 21st century skills cannot be easily acquired without the school's active implementation of change. Students may have been good at social media and online gaming but these do not guarantee competence in the future workplace. Students may be able to access the information, but it is not an assurance that they could use the information properly to their advantage or in designing an innovation that would benefit all. School's intervention is required to be globally competitive and the curricula must be designed to promote collaborative learner-centered environment to which students could relate and respond.

A call for quality educational standards better prepares students for 21st century life. Students need to move from past basic skills to a more challenging future advancement because the millennium generation have grown up in a fast-paced digital world and easily tune out of the traditional lecture-based method. Thus, they must be exposed to the elements of 21st century learning and skills because these skills are most applicable in the real-world scenarios of the 21st century life.

As frontrunners, the teachers have a crucial role in the development and advancement of knowledge, skills and attitudes of students in the 21st century. Quality of teaching in schools has been a struggling issue according to the United Nations Educational, Scientific and Cultural Organization (2015). As observed, many teachers are longing for change, but the conditions they are in do not allow change to happen. Many of them are aware of the needed educational enhancement, yet grope for the ways to start the development. Many have knowledge and skills in basic Microsoft operations. In fact, it has become a trend to use PowerPoint Presentations in delivering classes, or showing videos, as they believe these would make them 21st century educators. Others allow the students to discuss topics in groups to come up with an answer, gambling on the benefits of collaboration, and have students present their output. Yet, quality education is still not elevated (McGregor, 2017).

To hone students' 21st century skills is to possess these skills. According to The American Association of Colleges for Teacher Education (AACTE), teachers must possess, teach, and assess 21st century knowledge and skills in embedding 21st century teaching and learning. They must work to redesign education programs to effectively meet the needs of the 21st century learners. They must be trained to work with information, media and technology. Hence, effective teaching is timeless and yet, evolves with the tools of the time (Ledesma, 2011).

The goal of this research is to delve into the competence level and practices of the high school teachers in both public and private schools in Bohol in teaching the 21st century skills as well as the challenges experienced by them in its implementation. The result of this study will be utilized in identifying necessary trainings for teachers in order to become competitive in the 21st century education. With the foregoing observations and toward this end, this study is conceived.

Literature Review

This research is anchored on the conceptual framework of the organization called The Partnership for 21st Century Skills that the 21st century is a driving force for change of the educational system. To change is to move from one's current state to the projected future state. The rise of technology makes the societal change which characterized the 21st century from industrial to knowledge-based. Thus, schools worldwide are organized to prepare students to succeed in the 21st century and do something extraordinary.

Teachers need to equip themselves in visualizing the aim of the 21st century in the development of knowledge, higher-order skills (such as the 4C's of creativity, critical thinking, communication, collaboration) and character, as well as the establishment of lifelong learning habits in an ability to learn with technology in preparing students for a multiple career life-path. These skills would evaluate and assess the teachers' and students' readiness for change that would prepare them to acquire the required 21st century skills.

This study has been supported by the theories of change of Kurt Lewin and Michael Fullan. This is also supported by other theories and designs promoted by some experts and theorists.

Kurt Lewin developed a three-step change model namely unfreezing, changing and freezing. It illustrates the effects of forces that either promote or inhibit change. Specifically, driving forces promote change while restraining forces oppose change. Change occurs when prior learning is rejected and replaced (Lewin, 2011).

Before one can cook a meal that has been frozen, he/she needs to defrost or thaw it out. The same can be said of change. Before change can be implemented, it must go through the initial step of unfreezing. Because many people will naturally resist change, the goal during the unfreezing stage is to create an awareness of how the status quo or current level of acceptability is hindering in some way.

Old behaviors, way of thinking, processes, people and organizational structures must all be carefully examined to show how necessary change is. Communication is especially important during the unfreezing stage. The more people know about a change and the more they feel it is necessary and urgent, the more motivated they are to accept the change.

Now that people are “unfrozen” they can begin to move. Lewin (2011) recognized that change is a process where the organization must undergo transition or move into this new state of being. This changing step is marked by the implementation of the change. This is when the change becomes real. It is also consequently, the time that most people struggle with the new reality. It is a time marked with uncertainty and fear, making it the hardest step to overcome. During the changing step people begin to learn the new behaviors, processes and ways of thinking. The more prepared they are for this step, the easier it is to complete. For this reason, education, communication, support and time are critical as they become familiar with the change.

Lewin called the final stage of his change model freezing, but many refer to it as refreezing to symbolize the act of reinforcing, stabilizing and solidifying the new state after the change. The changes made to organizational processes, goals structure, offerings or people are accepted and refrozen as the new norm or status quo. Lewin found the refreezing step to be especially important to ensure that people do not revert to their old ways of thinking or doing prior to the implementation of the change. Efforts must be made to guarantee that the change is not lost; rather, it needs to be cemented into the organization’s culture and maintained as the acceptable way of thinking or doing. Positive rewards and acknowledgment of individualized efforts are often used to reinforce the new state because it is believed that positively reinforced behavior will likely be repeated.

The driving forces have caused huge demands on the need for change especially in the 21st century skills of the teachers, as well as their classroom practices. These also test teachers and schools in terms of relevance, readiness and resources.

Yet, there are also restraining forces that impede the initiation and continuing implementation of change. These forces include the school resources, the administrators’ initiative for change, the attitude and readiness of the students, the capability of the teachers to implement change in the classroom and the availability of the resources as reinforcements for the complete change. Lewin’s theory of change is very much applicable to this study. It explains the actual scenario of the Philippine public education which affected the teachers’ effort to change. The driving forces that cause change to occur in the same manner push the person in the desired direction. In the educational system, the major driving force is the need for change to address the demands of the future. These forces are pushed through the emergence of technological advancements that change the course of knowledge and access to information, as well as the use of media and technology in communication. As people live side by side with technology, new opportunities and future possibilities have emerged for the present-day students. Another distinguishing driving force is the implementation of the K to 12 with the aim of honing the students’ skills in order for them to become functionally educated and globally competent individuals.

Thus, Lewin’s theory supports this study in a way that it involves finding a method of making it possible to let go of the old pattern of the Philippine educational system and embrace new practices. Moving toward the new and the desired level of change needed in the 21st century leads to the transformation to meet the demands of the 21st century which is characterized as knowledge and technologically driven era.

Fullan (1993) briefly explained change as a journey, not a design, where change entails ambiguity with both the upside and the downside. These problems are the direction to deeper change and satisfaction. Conflict and challenges are necessary to any change that produces a successful result; thus every action is a change agent. Only when people take action to adjust their own environment that there is a profound change. In education, according to Fullan (1993), moral purpose is expected to be multifaceted and possibly chaotic, teaching theories and change need each other. A united possibility of clash and diversity is at hand and understanding the meaning of change is needed. He further mentioned, “The essence of change in education is

putting something new into practice.” Thus, the need for integrating 21st century skills in the curriculum could lead to educational change.

Fullan (2006) described the change process as “initiation, implementation, continuation and outcome factors.” He noted that the relationships between later faces are loosely combined and interactive, which means that each phase does not characterize an independent process.

According to Fullan (1991) initiation happens when one decides, which leads up to the processes whereby implementation takes place. In Fullan’s theory initiation factors include the emergence and quality of advancements, maps to innovations, and support from central administrators, the advocacy of the teachers and change agents outside the organization. Change occurs in the school when innovation is justified and with a purpose communicated by the school leaders to the teachers. It evokes advocacy of the teachers to change. Teachers’ change is brought by relevant external agents which include aligned goals, reasonable implementation, aligned beliefs and practices and the teachers themselves. When teachers see the need for change, change initiation occurs.

As an organization, the Department of Education is the most responsible government agency that controls the educational change of the basic educational organizations of the Philippines. As a matter of fact, the change on the national level has been initiated with the implementation of R.A. 10533. Yet as Fullan (2006) theorizes change is not easy, initiation is not enough for change to be made. It has to be fully implemented and continued in order to produce an outcome.

There are areas to consider before making change. These are what Fullan referred as the 3Rs or readiness, relevance and resources. These three are very much relevant to the study for they bring impact to the complexity of change. They determine the nature of the process from the initial concept to system implementation. Fullan identified these three groups of indicators that are linked with the decision to start change or to adopt an innovation in education. These indicators are readiness, relevance and resources.

Readiness for change is viewed by the capacity to make change and the motivation of the individuals within the organization itself to determine whether the intended changes justify the cost of the implementation (Fullan, 2007). A state of readiness, organized through experience sets a line-goal towards dynamic response to all objects and situations to which is related. Teachers’ readiness is also affected by the readiness of the school where he or she belongs. Readiness of a school is linked to improved outcomes in primary and secondary schools and positive social and behavioral competencies in students.

Readiness according to Fullan is the capability of the school to start the innovation and develop the necessary fundamentals including the resources and the knowledge and skills of the agents to effectively implement the desired educational change. Relevance is the awareness of those in the field of education on the usefulness of the initiatives in-line with the trends, including changing their ways and practices, as well as their tools. When there is a visibility of a relevant change, it will be successfully implemented. This is also affected by the availability of the resources which includes money, people, materials and facilities, and time. The 3Rs are intertwined and are important factors to implement change.

Resources is one of the challenges that make the K to 12 program successful as it addresses the demands of the 21st century. Fullan believed that the resources of the organization and individuals must be evaluated to find out and ensure the ability to carry-out implementation. Fullan listed a set of indicators needed for a successful change. These include the clarity of school policy, with respect to the desired goals, strategies for the innovation; the organized faculty and staff development; the procedures for monitoring and evaluation; the resources for teachers in need of practical help; the support of the stakeholders including the government and the school administrators.

The resources needed in the 21st century to prepare a 21st century classroom include ICT facilities, skilled teachers and support materials for student activities. Yet, teachers are not using the best available instructional materials and many teachers say they lack knowledge of the skills and training to implement education technology that could give their students the edge they need (The 21st Century Partnership, 2013).

Fullan’s theory of change is applicable in the study hence the demands of the economic industry on employable workforce

who can survive in the future are high and education must shape itself. Moreover, Fullan's theory is relevant in this study because it is where the categories of challenges were taken such as readiness, relevance and resources.

The initiation of change may give an opportunity for implementation and continuation, yet for it to be complete, all the resources especially the teachers need to be ready and relevant for change. Only then that the Department of Education will be successful in the K to 12 program and the implementation of the desired 21st century educational change. Hence, this study could be very relevant in achieving the desired complete change in the system through integration of the 21st century skills in the curriculum.

According to The Partnership for 21st Century Skills (2015), the 21st century skills are a set of abilities that students need to develop in order to succeed in the information age. The Partnership for 21st Century Skills is a national advocacy organization that encourages schools to infuse technology into education and provides tools and resources for educators to use in supporting their students in the acquisition of the 21st century skills (Partnership for 21st Century Skills, 2016).

These skills are divided into three main categories that include learning skills, literacy skills and life skills. Learning skills teach the students about the mental processes required to adapt and improve upon a modern work environment. Learning skills are also called the four Cs that include critical thinking, creativity, collaboration and communication. These are the most common skills because they are universal needs for any career.

Literacy skills are the second category of the 21st century skills. They are sometimes called IMT Skills that include information literacy, media literacy and technology literacy. These skills are concerned with the different elements in digital comprehension. With these, students can adapt to the world more effectively because they unmask the high-powered tools that run today's world. They play an important role in its evolution and guide its future.

Life skill is the final category which is also called FLIPS or flexibility, leadership, initiative, productivity and social skills. These skills take a look at intangible elements of a student's everyday life and focuses on personal and professional qualities.

In the context of the Department of Education where the teachers are expected to produce 21st century learners, total change has to occur. The role of an educator is not just a being teacher of the academics but skills in life. Teachers are representations of effective communication, thus, if educators are expected to teach their students how to communicate effectively, researchers need to focus on structuring and developing a stronger, more verifiably grounded framework for teaching these vital 21st century skills (The Partnership for 21st Century Skills, 2016).

The 21st century skills concept is very applicable to this study by the belief that teaching the students in the most relevant, in-demand and universally applicable skills should be prioritized in today's schools. The integration of these skills would lead the students in a complex, knowledge-based, information-age, technology driven economy and society. This study is of timely occurrence with the trend of the 21st century educational change. So, it is relevant because the study uses these categories to identify the teachers' practices in teaching the 21st century skills.

It is critical for the teachers to accept and recognize the needs of change adaptation of the 21st century trend. A teacher who knows better is a teacher who leads better (McKenzie, 2001). Turnbull (2007) said that "It is needed for a 21st century teacher to negotiate with the fast-changing world, the teachers need to be flexible, creative and innovative, and communicate on an emotional as well as on the cognitive plane." Technology helps the teachers in shifting their roles. To communicate effectively in personal, academic and professional life, teachers need knowledge and better understanding of the protocols and norms of varied digital communication tools that support interactions with variety of people and develop awareness of technology safely and responsibly. Siemens (2005) takes into account the trends in learning, the use of equipment and networks, and reducing the knowledge that is limited.

A teacher who masters technological advancement is fully aware of the applications that are helpful or destructive for the students because education opportunities depend mainly on the teachers' hand and not in technology. The knowledge and technology driven age of the 21st century, has the power to improve the quality of teaching. A teacher with the 21st century skills is a potential agent of change (Wimer, 2012).

The 21st century standard focuses on 21st century skills, content knowledge and expertise. It builds understanding across and among academic subjects as well as 21st century interdisciplinary themes. It further emphasizes deep understanding rather

than shallow knowledge. This standard engages students with real world data, tools and experts they will encounter in college, on the job, and in life. Students learn best when actively engaged in solving meaningful problems. Lastly, this standard allows for multiple measures of mastery (The Partnership for 21st Century Learning, 2016).

The 21st century curriculum and instruction teaches 21st century skills discretely in the context of key subjects and 21st century interdisciplinary themes. It enables innovative learning methods that integrate the use of supportive technologies, inquiry- and problem-based approaches and higher order thinking skills.

According to P21 Framework (2016), the essential skills for success in today's world include learning and innovation skills or the 4 Cs, life and career skills and the information, media and technological skills. These skills are learned across the expanded core subjects essential for all students in the 21st century. These include English, Reading or Language Arts, World Languages, Arts, Mathematics, Economics, Science, Geography, History, Government and Civics. In addition to these subjects, the Partnership for 21st Century Skills (2016) believes schools must move to include not only a focus on mastery of core skills, but also promote understanding of academic content at much higher level by weaving 21st century interdisciplinary themes into core subjects. These 21st century themes include global awareness, financial, economic, business and entrepreneurial literacy, civic literacy, health literacy and environmental literacies.

The framework for the 21st century learning was developed with input from teachers, education experts and business leaders to define and illustrate the skills and knowledge students need to succeed in work, life and citizenship, as well as the support systems necessary for 21st century learning outcomes. Thousands of educators and hundreds of schools in the country and abroad put 21st century skills at the center of learning.

Students need to master new skills in order to thrive in a global knowledge economy. They must undergo a significant change in learning from the basic skills to a more challenging future advancement. Thus, students must be exposed to the elements of the 21st century learning because these are needed in making life's choices to become good citizens and compete in a global economy. Significant advancements in technology and the continuing globalization of business and industry are forcing educators to change the way students are being educated. This need for change is vital to go with the trends and with what is current and realistic.

In the struggle of instilling each student with 21st century skills, teachers face a great challenge due to the fact that students have different previous knowledge, passion, motivation and learning styles. It is the teacher's responsibility to take initiatives in maintaining student's motivation.

Today, meeting our society's challenges demands educational excellence. Reinvigorating the economy, achieving energy independence with alternative technologies and green jobs, and strengthening our health care system require a skilled populace that is ready for the critical challenges people face. There is widespread consensus. However, it appears that our education systems are failing to adequately prepare all students with the essential 21st century knowledge and skills necessary to succeed in life, career and citizenship (The American Association of Colleges for Teacher Education, 2010).

The process of integrating 21st century skills in the classroom is one that cannot be taken lightly or easily. For educators and administrators to accept the changes necessary to ensure implementation of 21st century skills, many factors in teachers' acceptance of this change must be taken into account, examined and addressed (Vail, 2010).

The 21st century is an exciting and challenging time for teacher educators. The nature of teaching is changing. In an effort to transform themselves into exemplary educators, many programs in education are becoming more entrepreneurial, recognizing new opportunities and making changes required to respond to the needs of 21st century learners (Duncan, 2009). These changes are explained in the theories of Lewin and Fullan.

Lewin's and Fullan's theories of change both explained that change is a complex process. There are always driving and restraining factors that cause or impede change (Lewin, 2011). These factors usually exist in the initiation stage as what Fullan described. People have to believe that they can make a difference through change and adopting an innovative strategy will help before that are likely to commit change.

In the Philippines, technology is expensive and the cost of implementing K to 12 is high. This cost is not intended for buying the facilities necessary but for the teachers' training as well.

This study is also supported by Republic Act No. 10533 or the Enhanced Basic Education Act of 2013. This is an act enhancing the Philippine Basic Education System by strengthening its curriculum and increasing the number of years for basic education. R.A. 10533 Section 2 letter B states that "The state shall give every student an opportunity to receive quality education that is globally competitive based on a pedagogically sound curriculum that is at par with international standards." The enhanced basic curriculum aims to produce Filipino graduates who are holistically developed with 21st century skills. This curriculum also gives great chance to all graduate to acquire middle-level skills for better work opportunities.

These recent basic education reforms are anchored by the 1987 Philippine Constitution to make quality education accessible and the vision of the Department of Education to educate Filipinos who passionately love their country and whose values and competencies enable them to realize their full potential and contribute meaningfully to building the nation. They are also based on UNESCO's four pillars of education and global trends in educational thinking, such as student-centered learning and constructivist approach to teaching so that each Filipino shall be an empowered individual who has learned through a program that is rooted on sound educational principles and geared towards excellence, the foundations of learning throughout life, the competence to engage in work and be productive, the ability to co-exist in fruitful harmony with local and global communities and capability to engage in autonomous, creative, critical thinking and the capacity and willingness to transform others and one's self.

The implementation of Republic Act 10533 mandates to produce Filipinos who are humane, God-fearing and nationalistic, creative and critical thinkers, have the ability to transform oneself and others, environmentally concerned and have possessed the knowledge and skills necessary to compete in the 21st century. Section 15 of the act states that the Department of Education shall endeavor to increase per capita spending on education towards the attainment of international benchmarks. The goal of the K to 12 is to create a basic educational system functional enough to produce productive and responsible citizens equipped with the necessary skills for life-long learning, employment and survival in the 21st century. It aims to produce students who understand their role as a responsible, functional and productive members of the country. K to 12 is an essential program for making the Philippine Education system at equivalence and become competently leveled with rest of the countries (UNESCO, 2012).

As it is also mandated in RA 10533 known as The Enhanced Basic Education Act of 2013, that the K to 12 program is expected to have equipped students with the following 21st century skills: 1.) information and technology skills, 2.) learning and innovation skills, 3.) effective communication skills and 4.) life and career skills. Visual and information literacies and multicultural literacy and global awareness which comprise information, media and technology skills which include creativity and curiosity, critical thinking, problem solving skills, and risk taking are means to develop learning and innovation skills. Teaming, collaboration and interpersonal skills, personal, social and civic responsibility and interactive communication, and local, national and global orienteers are skills under effective communication skills. The life and career skills include flexibility and adaptability, initiative and self-direction, social and cross-cultural skills, productivity and accountability, leadership and responsibility, and ethical, moral and spiritual values. Therefore, all aspects of the educational system need to acquire these skills: the teachers, the students and the school leaders (UNESCO, 2012).

Williams (2017) in his study, pointed out that our world today has become the electronic world. With technology driving the social lives of students, its use is an effective way to promote student engagement, resulting in a passion for lifelong learning. Teachers have a responsibility to provide a new level of instruction that is relevant, effective and socially engaging for students.

Telford (2009), in his research, identified the necessary skills whereby students need to be successful in the 21st century. He noted, "The primary forces of change need to occur at the high school level, that the most important elements for school success is changes in the teacher's part." Teachers have to come out of their comfort zone by learning new subjects and new strategies on how to integrate the 21st century skills.

Kivunja (2015) in his research, unpacked information, media and technology skills of the new learning paradigm. He noted that the accessibility of media and technology create great impact on the learning styles of the students. He confirmed that to

understand and to be a dynamic member of the society, students need to graduate bringing them skills that will enable them to have a satisfying career and to contribute to the economy system where they become productive citizens.

Wrahatnolo and Munoto (2018) in their research advocated that Information and Communication Technology (ICT) innovations play a role in changing learning processes. Teachers claimed that the advancement of ICT has changed the way they teach. They said that skills and knowledge of the students can be obtained easily through the internet.

Gregson and Sturko (2007) in their research proved that teachers need the professional development especially in this era of educational reforms. Aside from learning innovations they advised teachers to change their teaching practice to implement and bring about improvements in student learning experiences related to integration as they practiced the strategies and provided feedback to their peers.

Rodrigues (2006) argued that 21st learning needs to take place in contexts that promote interaction and a sense of community that enable formal and informal learning. The qualities of where people learn affect the quality of how they learn.

The studies aforementioned are relevant to the present investigation since they all divulged the teachers' need for acquiring the 21st century skills through training as well as reinforcement of resources to implement the K to 12 program effectively and desired 21st century educational change. The categories of the 21st century skills were formulated and designed based on the standards of the enhanced basic education curriculum or RA 10533 that correlates the theories of change of both Michael Fullan and Kurt Lewin.

Methodology

This study uses an exploratory-descriptive design. It investigates the present practices and competency levels of teachers in the teaching of the 21st century skills in the curriculum as well as the challenges in its implementation. The study was participated by all teachers from the nine public and nine private secondary schools representing the three congressional districts of the province of Bohol. The province has two divisions for public education comprising the Bohol Division and Tagbilaran City Division. It is also divided into two dioceses comprising Diocese of Tagbilaran and Diocese of Talibon. A questionnaire is used to measure the competence, practices and challenges of the research participants

Results and Discussion

It was found out that there is a significant difference in the teachers' assessment of their competence, practices and challenges from public and private schools. It was shown that private school teachers have a high level of performance in their practices compared to that in the public schools. It was also revealed that public school teachers faced more challenges than those in the private schools. Moreover, there is a moderately strong correlation between teachers' competence and their practices in teaching the 21st century skills.

Conclusion

Based on the findings of the study, the researcher concluded that the significant difference of the public and private school teachers' competence is influenced by their practices in teaching the 21st century skills. These suggest that the teachers' practices are the result of their competence.

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