

TEACHER STRATEGIES IN FACING IN THE CHALLENGES OF 21st CENTURY EDUCATION

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ABSTRAK

Pendidikan di abad ke-21 menghadapi tantangan kompleks, terutama dalam konteks pergeseran paradigma menuju pendidikan modern. Artikel ini menguraikan definisi pendidikan sebagai upaya sadar untuk mengembangkan potensi spiritual, kendali diri, kepribadian, kecerdasan, karakter mulia, dan keterampilan yang diperlukan. Pergeseran paradigma dalam pendidikan abad ke-21 membutuhkan guru untuk beradaptasi dengan perkembangan zaman, terutama dalam implementasi strategi pendidikan yang sesuai. Tantangan bagi guru abad ke-21 melibatkan aspek teknologi, multikulturalisme, pembelajaran aktif, dan pertanggungjawaban. Guru harus mengatasi kesenjangan teknologi, menghadapi perubahan dalam metode pengajaran, dan memenuhi tuntutan keterampilan abad ke-21. Penelitian ini bertujuan untuk memahami strategi guru dalam menghadapi tantangan pendidikan abad ke-21 menggunakan pendekatan analisis deskriptif kualitatif. Temuan penelitian menunjukkan bahwa guru menggunakan strategi seperti pembelajaran kolaboratif, pembelajaran terpadu, pembelajaran berbasis proyek, pembelajaran berbasis masalah, pembelajaran berbasis desain, dan pembelajaran berbasis penyelidikan. Strategi ini bertujuan untuk meningkatkan keterampilan 4C (komunikasi, kolaborasi, kreativitas, dan berpikir kritis) yang esensial untuk memenuhi tuntutan abad ke-21. Dengan menerapkan strategi ini, guru dapat mengatasi tantangan dan mempersiapkan siswa untuk masa depan yang penuh perubahan dan kompleksitas.

ABSTRACT

Education in the 21st century faces complex challenges, especially in the context of shifting paradigms toward modern education. This article outlines the definition of education as a conscious effort to develop spiritual potential, self-control, personality, intelligence, noble character, and necessary skills. The paradigm shift in 21st-century education requires teachers to adapt to the developments of the times, particularly in the implementation of suitable educational strategies. Challenges for 21st-century teachers involve aspects of technology, multiculturalism, active learning, and accountability. Teachers must overcome technological gaps, confront changes in teaching methods, and meet the demands of 21st-century skills. This research aims to understand teacher strategies in facing the challenges of 21st-century education using a qualitative descriptive analysis approach. The research findings indicate that teachers employ strategies such as collaborative learning, blended learning, project-based learning, problem-based learning, design-

based learning, and inquiry-based learning. These strategies aim to enhance 4C skills (communication, collaboration, creativity, and critical thinking) essential for meeting the demands of the 21st century. By implementing these strategies, teachers can overcome challenges and prepare students for a future full of change and complexity.

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INTRODUCTION

Education is a deliberate and planned effort to create an agreeable learning environment, allowing learners to actively develop their potentials, including spiritual strength, self-control, personality, intelligence, noble character, and skills needed for themselves and society (Pristiwanti, et al., 2022). Education involves the teaching of specific skills as well as deeper aspects such as imparting knowledge, consideration, and wisdom. According to the Legislation on the Education System No. 20 of 2003, education is also a conscious and planned effort to create a learning and teaching atmosphere with the aim that learners actively develop their potentials in various aspects of life. Thus, education encompasses all knowledge and lifelong learning in various contexts that have a positive influence on individual growth.

In the 21st century, education is expected to continually adapt to the developments of the time. This change is based on the shift in the educational paradigm from conventional to modern education (Trilling & Fadel, 2009, in Afandi, et al., 2016). According to BNSP (2010, in Afandi, et al., 2016), to achieve 21st-century education, there is a need for changes in the education model, including a focus on students-centered learning, networking environments, active investigation, real-world contexts, team-based learning, empowering typical behaviors, stimulation involving all aspects, multimedia use, cooperative approaches, customer needs fulfillment, collective participation, and diverse disciplinary knowledge.

In the current status quo, the challenges faced by teachers have become increasingly complex. Particularly, being a teacher in the 21st century differs significantly from the role of a teacher in the 20th century. Now, the existence of a teacher is not only assessed based on charisma alone, as stated by Karim and Saleh Sugiyanto (2006, in Saputro & Wijayanti, 2021). More than that, teachers now need the ability to communicate and adapt to the developments of the time. Digital-era teachers must be able to innovate and create, considering that the learning system in the 80s is no longer relevant to today's students. Over time, the challenges faced by teachers in the 21st century are not limited to assessing

students' academic abilities but emphasize the development of students' intellectual, emotional, moral, and ethical aspects.

The epoch of globalization necessitates intense competition for each individual, and within this milieu, educators in the 21st century encounter the imperative of establishing an educational milieu proficient in generating cognitive assets conducive to the advancement of a socio-economic framework founded upon a worldwide comprehension of knowledge. This aligns with the responsibility of teachers as global citizens in the contemporary era. Consequently, to address the

The term "strategy" was initially used in a military context and interpreted as the art of planning war operations, especially related to troop movements and navigation to positions considered most advantageous for achieving victory (Hornby, A.S., 1973:997 in Baroya, 2018). In general, strategy means the outline of actions to achieve predetermined goals. In the context of learning, strategy can be interpreted as the general pattern of activities that teachers and learners undertake in the implementation of the teaching and learning process to achieve set goals (Baroya, 2018).

According to the Ministry of National Education (Depdiknas) (2008: 3-4), strategy is an effort to achieve success and success in reaching goals. Therefore, strategy is an essential component in facing the challenges of 21st-century education. With strategies in place, schools can prepare themselves to face changes and challenges in the education world.

From the background outlined, the objective of this research is to gain a deep understanding of the strategies implemented by teachers in facing the challenges of 21st-century education. With dynamic changes in the educational environment, including technological developments, changes in skill demands, and other global challenges, this research aims to identify and analyze the concrete steps taken by schools in responding to these changes. Through this research, it is hoped that successful strategy patterns, innovative practices, and specific challenges faced by schools in aligning themselves with the dynamics of 21st-century education can be identified.

METHODS

The research method employed in this study is qualitative. Qualitative research refers to an effort to interpret and deeply understand the reality, facts, and relevant meanings, as explained by Raco (2018). Specifically, the goal of this qualitative research is to interpret a specific condition by describing in detail and depth a problem that arises in

the context of the field study. This approach involves a series of steps, including identifying the problem, determining the research topic, seeking relevant sources, citing sources, and abstracting information to gain comprehensive understanding. The results are then interpreted to generate new knowledge and formulate conclusions.

This study applies a qualitative approach with a descriptive analysis type, focusing on providing detailed descriptions of the researched problem. This approach is based on a literature review sourced from books and journals on the utilization of technology in education. The primary sources of information for this article come from national and international journal references, as well as both print and online books. It is hoped that this research will make a significant contribution to the understanding and analysis of the implementation of independent curriculum in elementary school environments.

RESULTS AND DISCUSSION

Challenges of 21st Century Education

The challenges of 21st-century education refer to a variety of obstacles and transformations faced by the education system in adapting to the demands and dynamics of the era characterized by technological advances, social changes, and the need for different skills. According to Susanto (2010, as cited in Arifin & Setiawan, 2020), there are seven challenges faced by teachers in the 21st century, namely:

1. Teaching in a multicultural society, involving instruction in an environment with diverse cultures and multilingual competencies.
2. Teaching for meaning construction, focusing on efforts to teach to build a deep understanding of concepts.
3. Teaching for active learning, emphasizing teaching methods that involve active student participation.
4. Teaching and technology, which require skills and the application of technology in the learning process.
5. Teaching with new perspectives on abilities, referring to approaches that involve a new understanding of the potential and abilities of students.
6. Teaching and choices, depicting the challenge for teachers in making appropriate decisions related to learning.
7. Teaching and accountability, highlighting the teacher's responsibility for student learning outcomes.

However, in reality, many older-generation teachers face difficulties, especially in dealing with technology or being technologically challenged. The challenges faced by today's teachers, as identified by The International Education Advisory Board (IEAB), involve several issues, including:

1. Resistance of teachers to learning new technology.
2. Discomfort among a generation of teachers unfamiliar with new technology, sometimes feeling intimidated by students' technological knowledge.
3. Lack of support and emphasis on professional development in the teacher's work environment.
4. Challenges of new technology require teachers to step out of their comfort zones, transforming their roles into learning facilitators, which contradicts traditional teaching methods.
5. The need for teachers to engage and educate the current generation of students with relevant, specific, and rapid learning, given that Millennials tend to seek information on their own and appreciate practicality in learning.
6. Attention diverted by technology, requiring the teaching of proper and safe technology usage skills.
7. Financial challenges related to the costs of hardware, software, infrastructure, teacher training, and technical support in using technology.

In addition, in facing 21st-century challenges, teachers are confronted with three main challenges:

1. Making learning relevant for students by presenting specific and rapid content that meets their needs and desires.
2. Managing the distracting impact of technology that can disrupt students' attention.
3. Overcoming financial challenges related to the costs of educational technology and ongoing support.

Consistent with the research conducted by Rusdin, N. M., & Ali, S. R. (2018) on the Implementation of 21st Century Learning and Its Challenges, some aspects to be considered include:

1. Challenge of Insufficient Resources: Preparing resources for various classes is a barrier to implementing 21st-century learning, especially as a teacher faces the task of teaching more than one subject with different class levels.

2. Challenge of Insufficient ICT Facilities: 21st-century learning demands special equipment and accommodations, especially related to Information and Communication Technology (ICT). Unfortunately, the tools, facilities, and accommodations available in schools are considered inadequate and not efficient enough to support the implementation of 21st-century learning.
3. Challenge of Limited Time: Teachers face constraints in terms of limited time, making it difficult for them to implement 21st-century learning effectively. Limited time can hinder the optimal learning process.
4. Challenge of Inadequate Knowledge: Teachers experience difficulties in the knowledge and skills required to implement 21st-century learning optimally. Some teachers state that the focus on assessing students' understanding in 21st-century learning feels limited, while others feel a lack of knowledge in understanding the concepts of 21st-century learning and a lack of ideas in integrating it with the subjects taught.

Based on the research conducted by Kurniawan (2019) on the challenges of the 21st century for madrasahs in Indonesia, conclusions can be drawn regarding various challenges faced by madrasahs in that era. These challenges involve aspects of the mental revolution for teachers, preparing students as digital natives with 21st-century skills, integrating technology into the learning process, and curriculum reform according to the demands of the times. To overcome these challenges, madrasahs need to take concrete actions such as emphasizing, creating, and maintaining points of differentiation or distinction from madrasahs in the past, which are considered by the community as outdated and backward educational institutions.

In conclusion, numerous studies and identifications of 21st-century education challenges highlight several key aspects. Firstly, teachers are tasked with teaching in a multicultural environment, emphasizing meaning construction, and requiring an active learning approach. Challenges also include the integration of technology into the learning process, adopting new perspectives on student abilities, making accurate decisions in teaching, and being accountable for student learning outcomes.

However, these challenges are not always easy to overcome. Teachers, especially those from previous generations, often face resistance to new technology, feel uncomfortable and intimidated by students' technological knowledge, and lack support and emphasis on professional development in the teacher's work environment.

Additionally, financial issues related to the costs of hardware, software, infrastructure, teacher training, and technical support pose constraints.

In the context of madrasahs in Indonesia, additional challenges include the mental revolution for teachers, preparing students as digital natives, integrating technology, and curriculum reform. Efforts to address these challenges require a focus on the differences and distinctions of madrasahs compared to previous educational institutions.

It is important to acknowledge that the real difficulty lies in the adoption of new technology by teachers, which can hinder the transformation of their roles into learning facilitators. Meanwhile, relevant learning, management of the distracting impact of technology, and addressing financial challenges remain the main focus in facing the dynamics of 21st-century education.

In facing these challenges, teachers need to actively develop the knowledge and skills required, with adequate support from educational institutions, the government, and the community. All these challenges emphasize the importance of developing effective strategies to advance education in the 21st century.

Teacher Strategies in Facing 21st Century Challenges

In the 21st century, significant changes have occurred, including shifts in the teaching strategies adopted by educators. The transition from traditional teaching methods to digital approaches has become a necessity to accommodate both teachers and learners in overcoming the challenges of this era. To meet the increasing demands of education, understanding and mastering 21st-century skills have become crucial. According to Sapuadi (2019), learning strategies encompass methods that comprehensively manage content and the learning process to achieve learning objectives. Dick and Carey (Sanjaya, 2007) describe learning strategies as materials and learning procedures that teachers must learn to support students in achieving their learning goals.

These opinions indicate that learning strategies are plans that teachers must formulate in the learning process, taking into account the needs and characteristics of students to achieve learning objectives. The role of teachers as educators is crucial in formulating appropriate learning strategies aligned with the desired objectives. Aswan (2016) states that there are four basic learning strategies that teachers must be familiar with, namely: 1) identifying and determining the specifications and qualifications of expected student behavior changes, 2) choosing a learning approach, 3) selecting effective learning procedures, methods, and techniques, 4) establishing learning success criteria.

The main goal of 21st-century education is to encourage learners to acquire crucial and relevant 21st-century skills, enabling them to be more responsive to changes and developments in the era. 21st-century education also aims for learners to have a deep knowledge foundation, allowing them to be lifelong learners (Afandi, et al., 2016). Therefore, the education system needs to consider various aspects focused on in 21st-century education. One of the crucial aspects is "Digital-Age Literacy," as explained in the enGauge 21st Century Skills document (NCREL & Metiri Group, 2003).

According to Sudarma (2014), teachers' creativity needs to be enhanced in line with changes in 21st-century learning. Here are explanations of several aspects of teachers' creativity that need improvement:

1. **Having Wide and Fast Access to Information:** Teachers need the ability to access information widely and quickly. This includes the ability to use various information sources, whether in the form of books, articles, or digital sources, to continuously update their knowledge.
2. **Enhancing Creativity in Reading:** Creativity in reading involves teachers' ability not only to understand information literally but also to read with deep comprehension, connecting different ideas, and formulating creative questions that can stimulate discussion.
3. **Enhancing Creativity in Writing:** Teachers need to develop creative writing skills to present lesson material in an interesting and innovative way. This may involve using a unique writing style, developing original teaching materials, and creating content that can motivate students.
4. **Enhancing Basic Learning Skills:** Creativity in enhancing basic learning skills includes teachers' ability to develop innovative learning approaches. Teachers need to create a motivating classroom atmosphere that stimulates students' interest in learning.
5. **Enhancing Creativity in Managing Learning Models:** Teachers need to manage learning models in a creative way, such as using collaborative approaches, experiments, and challenging learning projects. Choosing learning models that suit the needs of students and the subject matter is also part of teachers' creativity.
6. **Enhancing Creativity in Managing Technology-Based Learning Materials:** In the 21st century, the use of technology is crucial. Teachers need to enhance their creativity in managing technology-based learning materials, including selecting and using digital learning tools, developing interactive content, and integrating technology to enhance learning effectiveness.

Improving teachers' creativity in these aspects is expected to contribute positively to 21st-century learning, emphasizing the development of 21st-century skills such as creativity, critical thinking, collaboration, and digital literacy. These aspects reflect the need for teachers to continuously develop themselves and adapt to dynamic changes in education.

In this context, it is emphasized that the implementation of learning strategies must be tailored to the needs and characteristics of students to achieve optimal results. The future requires diverse skills, and these demands must align with the skills that students need to master. Some learning strategies that help students develop 4C skills and support the fulfillment of 21st-century competencies, as outlined by Fitriani, et al. (2022), include:

1. Collaborative Learning: Technology enables collaboration between teachers and students, creating digital resources, presentations, and projects together with the participation of other teachers and students. Collaborative learning is based on social constructivism theory and includes Collaborative Problem Solving, Collaborative Inquiry, and Collaborative Problem-Based Learning.
2. Blended Learning: It is a combination of traditional learning and electronic learning environments. Blended learning combines web-based learning, video streaming, and synchronous and asynchronous audio communication with face-to-face learning.
3. Project-Based Learning: Students can access authentic resources on the web, collaborate with experts worldwide, and interact with peers studying the same subject in different locations. This approach emphasizes more relevant and project-oriented learning.
4. Problem-Based Learning: Encourages critical and creative thinking skills in solving real-world problems. Students are expected to think critically and creatively to find solutions, and then they participate in implementing solutions together.
5. Design-Based Learning: Focuses on the design, development, and management of a prototype. This method is closely related to the use of technology and involves the teacher's role as a consultant and facilitator.
6. Inquiry-Based Learning: Focuses on investigation and discovery of solutions to a problem.

21st-century learning strategies need to consider technology, teacher creativity, and student needs to achieve learning objectives that are relevant to the times. Some

strategies such as collaborative learning, blended learning, and project-based learning can help improve students' abilities and learning outcomes.

In facing the challenges of the 21st century, teachers need to adopt relevant and responsive learning strategies. Understanding and mastering 21st-century skills are key. Effective learning strategies are formulated as a comprehensive plan that includes content management and the learning process. Teachers play a crucial role in designing learning strategies that meet the needs and characteristics of students.

There are four basic learning strategies that teachers must master, namely identifying expected behavioral changes, choosing a learning approach, selecting effective learning methods and techniques, and establishing learning success criteria. In the context of 21st-century education, the focus is on developing essential 21st-century skills, such as digital literacy, creativity, and critical thinking. In line with Sunardi's research (2018, as cited in Muliastri, N. K. E. (2020)), four core principles of 21st-century learning that need to be explained and developed are:

1. **Student-Centered Learning:** The principle of Student-Centered Learning emphasizes a learning approach that focuses on students as active subjects developing their interests and potentials. Students are not only directed to listen and memorize but are also encouraged to build their knowledge and skills, with an emphasis on their contributions to solving real-world problems in society.
2. **Collaborative Learning:** The principle of Collaborative Learning emphasizes the importance of students collaborating with others, including those with different cultural backgrounds and values. Students are invited to collaborate in exploring information and constructing meaning, appreciating the strengths and talents of others, and understanding how to adapt in a team or group.
3. **Contextual Learning:** The principle of Contextual Learning emphasizes the relevance of learning to students' everyday lives outside of school. Learning materials need to be related to the real-world context, and teachers are responsible for developing learning methods that allow students to connect with the real world, seeking values, meanings, and beliefs in their learning.
4. **School Integrated with the Community:** The principle of School Integrated with the Community highlights the importance of integrating schools with the community to prepare students as responsible citizens. Students are encouraged to engage in community service activities, such as participating in health, education, and environmental programs. Visits to orphanages are also recognized as a means to train

students' empathy and social concern. By applying these four principles, 21st-century education is expected to be more relevant and prepare students to face the challenges of modern society.

Therefore, teacher creativity is crucial in designing effective learning strategies. Teachers need to enhance their skills in accessing information, reading, writing, managing learning models, and managing technology-based learning materials. This creativity needs to be applied to make learning more engaging and aligned with students' needs.

Several learning strategies that can help teachers overcome 21st-century challenges include collaborative learning, blended learning, project-based learning, problem-based learning, design-based learning, and inquiry-based learning. Collaboration between teachers and students, the use of technology, and learning approaches that emphasize projects, problems, design, and inquiry can help achieve relevant and results-oriented learning goals.

The importance of technology-based learning strategies, such as blended learning, indicates that technology integration is key to meeting 21st-century demands. In the implementation of learning strategies, teachers must consider the needs and characteristics of students to achieve optimal results. These strategies serve as the foundation for 21st-century education, aiming to create learners with diverse skills who can be lifelong learners.

CONCLUSION

The challenges of 21st-century education encompass a range of obstacles and transformations that must be faced by the education system to adapt to the demands of the times. Teachers, as key actors in the education process, face seven major challenges involving multicultural aspects, meaning construction, active learning, technology, new perspectives on abilities, decision-making, and accountability for student learning outcomes. However, many older-generation teachers encounter difficulties, especially in adopting technology, which creates resistance, discomfort, and a lack of support. Challenges also include financial aspects related to the costs of hardware, software, and teacher training. The importance of creating relevant learning, managing the distracting impact of technology, and addressing financial challenges are the three main focuses for teachers facing the changes of 21st-century education.

There are also specific challenges for madrasahs in Indonesia, including the mental revolution of teachers, preparing students as digital natives, technology integration, and curriculum reform. Research shows that a lack of resources, inadequate ICT facilities, time constraints, and insufficient knowledge are obstacles to the implementation of 21st-century learning. Teacher creativity becomes a key element, requiring broad access to information, improvement in reading and writing, and the ability to manage technology-based learning models and materials. In facing these challenges, effective and responsive learning strategies are needed, integrating technology, developing teacher creativity, and addressing student needs. Student-centered, collaborative, contextual, and community-integrated learning are the key principles that should be applied.

The importance of digital literacy, creativity, and critical thinking skills emphasizes the need to focus on the development of essential 21st-century skills. Teachers play a central role in designing learning strategies that are in line with the demands of the times. Therefore, 21st-century education is expected to be more relevant, preparing students as lifelong learners, and producing individuals ready to face the dynamics of modern society.

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