

Changes in Digital Technology to Meet the Needs of the 21st Century among the Teachers of the Selangor Department of Islamic Religion

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To Link this Article: <http://dx.doi.org/10.6007/IJARBS/v14-i11/23748> DOI:10.6007/IJARBS/v14-i11/23748

Published Date: 26 November 2024

Abstract

Changes in teachers' commitment to changes in the use of Digital Technology to meet the needs of the 21st Century among Selangor Islamic Religious Department (JAIS) teachers. The purpose of this study is to find out the level of knowledge of Selangor Islamic Religious Education Department teachers about the use of digital technology to meet the needs of the Teaching and Learning (P&P) of the 21st Century (PAK-21). This study utilizes the use of simple random sampling involving 132 respondents in four religious schools around Shah Alam as a study sample. This study is quantitative in nature that utilizes the use of descriptive survey methods to obtain percentage scores. A questionnaire was used as a research instrument. The findings of the study indicated that the five aspects studied were at a high level, which involved basic standards in PAK-21 (98.17%), student skills in PAK-2 (94.77%), 21st century learning concepts (98.52%), examples of activity-based learning (96.86%) as well as elements related to daily lesson plans for the 21st century (99.01%). The implications of these findings have given an awareness where teachers need to change with the passage of time in the development of digital technology nowadays which requires wider use in Teaching and Learning (P&P). In conclusion, the level of teacher knowledge related to 21st century learning is good. Despite this, the Education Department of the Selangor Islamic Religious Department (JAIS) and the school administration can also take additional efforts by holding regular in-service training, running courses related to 21st century learning and can create relevant workshops, hopefully with these efforts can provide exposure and increase the knowledge of teachers in further increasing their level of awareness and interest about any digital technology changes that are widespread throughout the country nowadays.

Keywords : Level of Knowledge, 21st Century Learning, Religious School Teachers

Introduction

Nowadays, Digital Technology in our country's education system has entered the 21st century. The world of education nowadays is very much related to the use of Digital Technology which is growing and always changing so fast. The world of education nowadays is very much related to the use of Digital Technology which is growing and always changing so fast. Thus, changes to the field of education are very necessary because this success depends on the effectiveness of the futuristic education plan (Abdul Ghoni, 2018). Malaysia is also determined to obtain the best position in "*Trends in International Mathematics and Science Study (TIMSS)*" and "*Programme for International Student Assessment (PISA)*", in line with the development of digital technology today, by the year 2025 (Ministry of Education Malaysia 2016) .

Overall, before PAK21 was implemented, a pilot phase was carried out first in 2014 in several selected schools (Nurzarina Amran dan Roslinda Rosli, 2016). However, by using the concept of 21st Century Learning into the national education system, our country's education system is still based on the National Education Philosophy and the Education Act 1961. The teacher's goal in producing first class students is based on what is outlined in the "*Educational Development Master Plan (PIPP) 2006-2010*" which is holistic and should be achieved as set out in the idea of the "*Educational Development Plan (PPPM) 2013-2025*" (Raja Abdullah dan Daud Ismail, 2018). Guided by the policy goals of the PPPM, the implementation of the 21st Century Learning system has been comprehensively implemented in Malaysia in 2015 balanced with the use of digital technology that is growing widely nowadays. Nowadays, teachers face challenges in the development of digital technology which is changing so fast. It is comprehensive to face the changing needs of 21st Century Learning in the world of education as a result of the development of globalization, liberalization, internationalization and rapid development in the field of science and technology. According to Zaini, Mohmad Noor, Ikhsan, Norila, Abu Bakar and Abdul Talib (2015), "the manifestation of education in Malaysia cannot be in the old way but there needs to be changes according to current developments". Directly it has also greatly influenced and amended the education system in Malaysia which indeed requires the use of digital technology. Thus, the new or millennial education needs to be global in nature and able to innovate the old features to suit the current needs in the education system that is characterized by the concept of 21st Century Learning needs.

Based on the Ministry of Education Malaysia (2015), "the need for 21st Century Learning is one of the targets to succeed in the Malaysian Education Development Plan (PPPM) 2013-2025, as formulated through a nationwide dialogue tour by the Ministry of Education Malaysia (KPM). According to Saiful Nazri and Azlin Norhaini (2016), the challenge for someone from academics or educators in practicing the 21st Century Education system in the classroom, is actually still new for a developing country like Malaysia and it is being implemented to improve the system national education so that it can keep pace with foreign countries that first apply 21st century learning methods" (21st Century Learning). Our country is still faced with significant issues, challenges and changes to compete with rapidly developing countries, especially in the field of education which requires effective digital technology in the face of 21st Century Learning which is changing more and more nowadays.

Literature Review

Looking at the current changes in digital technology has seen a comprehensive challenge that crosses new challenges for the world of education, the effects of globalization, liberalization, internationalization and rapid development in the field of science and technology. According to Zaini, et.al. (2015), the implementation of education in Malaysia cannot be in the old way unless there needs to be changes according to current developments. Thus, the latest or millennial education needs to be comprehensive, balanced, and able to innovate the old features to suit the current needs in the education system that is characterized by the concept of the 21st century. Directly this challenge has to some extent changed the education system in Malaysia which really needs the use of the latest digital technology.

In fact, the success in the implementation of the teaching and learning process of a teacher is influenced by the experience of education and training that they have gone through before in practice. The teacher's knowledge in understanding the implementation of facing the needs of the 21st century, plays an important role because it combines the use of digital technology to form an understanding of how a subject, problem or teaching issue can be organized, represented and adapted based on the various interests and abilities of students (Abdul Said et al., 2011). Therefore, teachers need to deepen their knowledge in the use of digital technology to make a teacher know what they want to convey through learning activities with students in the classroom according to the guidelines for the implementation of PAK21.

The Education Act 1961 was enacted based on the Razak Statement 1956 and the Rahman Talib Statement 1960. Based on the objectives of the education policy as contained in the Education Act 1961, a cabinet committee report was issued to review the implementation of the education policy, among those contained in the act which is to review review the goals and effects of the current education system, including its curriculum within the framework of the national education policy that exists with the aim of ensuring that the energy needs of the people of the country can be met either in terms of short term or long term and above all to ensure that the education system can meet the country's goal towards producing a united, disciplined and trained society. The implementation of national education is guided by the Razak Statement 1956. After the establishment of the Razak Statement 1956, another committee was formed, namely the Rahman Talib Committee whose name was taken in conjunction with the name of its chairman who was the Minister of Education at the time, namely Abdul Rahman Talib (Mardiana Nordin and Hasnah Hussin, 2014). The creation of the committee is intended to study the Razak Statement 1956 and the Education Ordinance 1957 which are used in the education system even though the country has achieved independence. The formation of the Committee issued a report, namely the Rahman Talib Statement in 1960. The importance of the education system today in facing the learning challenges of the 21st century shows a very encouraging development when teachers can develop students' communication skills in learning activities such as (a) encouraging students to question other students during discussions, (b) accepting questions asked, (c) give time to make follow-up questions to students and (d) collect, discuss, develop and categorize student questions (Ministry of Education Malaysia, 2015). Nevertheless, the teacher's pedagogical knowledge base can give them exposure on how to integrate their knowledge into producing pedagogical knowledge content for teaching so that their teaching can create something that is interesting, meaningful and easily understood by students.

The teacher's job nowadays is also as a facilitator or learning guide in the learning and facilitation activities (PdPc) that are implemented. In fact, the 21st century learning approach used requires students to master creative and critical thinking skills in addition to improving communication skills, encouraging collaborative skills and the application of moral and ethical values throughout PdPc, Muhammad Izzat (2021). It is also an aspect of student development that needs to be mastered by the students as expected by the Malaysian Ministry of Education. In implementing 21st century learning, learning is no longer teacher-centered but student-centered.

Methodology

Research methodology is divided into study design, study population and sampling, study instruments, instrument reliability and data analysis procedures.

Study Design

This study is a quantitative study that uses a descriptive survey method to obtain teacher feedback based on their knowledge of 21st century learning. The survey method implemented allows the researcher to obtain data and evidence of incidents in real locations, Ghazali and Sufean (2018). With this, the data obtained is directly analyzed to obtain answers for this study. It was further explained by Creswell (2012), who stated that, survey research designs are procedures in quantitative research in which investigators administer a survey to a sample or to the entire population of people to describe the attitudes, opinions, behaviors, or characteristics of the population.

Study Population and Sampling

The population of this study consists of teachers who teach in 4 Religious Primary Schools (SRA) around Shah Alam, Selangor. For the study sample, the researcher has used simple random sampling because this sampling is the easiest and easiest to select the study respondents and does not require high costs. This simple random sampling is also not determined by the sampling modus operandi because anyone can be used as a study sample (Creswell, 2009).

Therefore, the researcher chose four religious primary schools around Shah Alam, namely Section 3 Religious Primary School, Section 16 Religious Primary School, Section 7 Integrated Religious Primary School and Section 19 Integrated Religious Primary School. These four schools have a total 210 teachers. All the teachers in the four SRAs around Shah Alam are a population that can be selected to carry out this study because they meet the criteria of Selangor Islamic Religious Department's Primary Religious School. It also uses the Standard Primary School Curriculum (KSSR) which is the same as other national school curricula in Malaysia and also applies the implementation of PAK2 based on the determination of the sample size by Krejcie and Morgan (1970), if the total population is $N=210$, then the sample that can be taken is $S=132$. Therefore, the researcher only conducted this study on 132 teachers only.

Study Instrument

The researcher used a set of knowledge questionnaires that contained five aspects that were studied. Each content item in this questionnaire has many correct answer options. The purpose is to test the level of teacher knowledge about 21st century learning. This

questionnaire has been adapted from the 21st Century Learning Guidebook published by the Curriculum Development Division of the Ministry of Education Malaysia.

In this questionnaire, it covers aspects of (i) 21st century learning concepts, (ii) PAK21 basic standards, (iii) 21st century student skills, (iv) 21st century daily lesson plan elements and (v) examples of activity-based learning. In each aspect, there are eight to ten answer choice items for the respondents to choose from, they can choose as many answers as they feel are correct.

Instrument Reliability

A pilot study was conducted to obtain reliability values (Cronbach's Alpha) involving 30 respondents considering that the statistical calculation will work if the sample (n) exceeds 30 people, (Ghazali and Sufean, 2018). It aims to obtain the value of the reliability coefficient of the instrument for this pilot study. Then, the value of the coefficient will be compared with the Table of Reliability Values (Lim, 2007), to identify items that require improvement, modification or removal from the instrument. The table of reliability values is shown as below.

Table 1.1

Reliability Value

Reliability coefficient	Reliability level
.00-.39	Rejected Doubtful Simple Good
.40-.59	Very good
.60-.79	
.80-.89	
.90 dan ke atas	

Analysis of the reliability of the research instrument for the five aspects has shown that the Cronbach's Alpha value is 90. This has proven that the value of the Cronbach's Alpha reliability coefficient for this research instrument is very good and has an internal consistency that exceeds 70. Therefore, this research instrument is suitable used for the actual study phase.

Data Analysis Procedures

Data is information that has been collected through the instruments used. With that, the data that has been collected will go through various methods and techniques that need to be managed systematically and well to form an appropriate analysis and interpretation framework (Maria Salih, 2016).

The researcher used percentages to analyze the data obtained from the questionnaire. Therefore, the researcher used percentage analysis by referring to the interpretation of percentage scores from Alias Baba (1999), Tuckman (1999) and Gay & Airasian (2003) in Mohd Sani Ismail (2011). Therefore, the interpretation of the percentage score is explained as in the table below:

Table 1.2

Interpretation of Percentage Scores

Percentage Score	Score Interpretation
75.00 until 100.00	High
50.00 until 74.00	Simple
0.00 until 49.00	Low

Research Findings*Introduction*

The purpose of this study is to find out the level of knowledge of Selangor Islamic Religious Education Department teachers about the use of digital technology to meet the needs of the Teaching and Learning (P&P) of the 21st Century (PAK-21). This study utilizes the use of simple random sampling involving 132 respondents in four religious schools around Shah Alam as the study sample. This study is quantitative which utilizes the use of a descriptive survey method to obtain a percentage score. A questionnaire was used as a research instrument. The findings of the study indicated that the five aspects studied were at a high level, which involved basic standards in PAK-21 (98.17%), student skills in PAK-2 (94.77%), 21st century learning concepts (98.52%), examples of activity-based learning (96.86%) as well as elements related to the 21st century daily lesson plan (99.01%).

Standard Asas Pembelajaran Abad ke-21

For this aspect, the correct answer based on the 21st Century Learning guidebook is communication (100%), collaborative (100%), critical thinking (100%), creativity (100%) and moral and ethical values (90.85%). The table below shows the percentage scores for the basic standard aspects of PAK21.

Table 1.3

Findings of Respondents' Study About Basic Standards PAK21

Basic Standard PAK21	Percent	Overall Percentage
Personal and academic development	18.95%	
Literacy in the digital age	20.26%	
Pure values and ethics	90.85%	
Communication	100.00%	98.17%
Critical thinking	100.00%	
Creativity	100.00%	
Management and self-development	7.19%	
Collaborative	100.00%	

Based on the table above, it clearly proves that teachers know about the basic standards of PAK21 even though there are among those who choose other answers such as individual and

academic development (18.95%), digital era literacy (20.26%) as well as management and self- development (7.19%). However, the overall percentage score is still at a high level with a total of 98.17%.

21st Century Student Skills

For this aspect, the correct answer based on the 21st Century Learning guidebook is all the answers listed which are critical and creative thinking skills (100%), effective communication skills (100%), skills to enjoy the beauty of creation and art (75.82%), skills in making choices and making decisions (100%), skills in finding, interpreting and applying information (97.39%), skills in getting along and collaborating with others (98.69%), leadership and management skills (79.74%), skills in exploring and adapting information (96.73%), questioning skills and giving open responses (99.35%) and listening skills and developing ideas well (100%).

Table 1.4

Respondents' Study Findings About Pupils' Skills in PAK21

Student Skills in PAK21	Percent	Percentage Overall
Critical and creative thinking skills	100.00%	
Effective communication skills	100.00%	
The skill of enjoying the beauty of creation and art	75.82%	
Ability to make choices and make decisions	100.00%	
Skills to find, interpret and apply information	97.39%	94.77%
The ability to get along and work with others	98.69%	
Leadership and management skills	79.74%	
Skills to explore and adapt information	96.73%	
The skill of questioning and giving open responses	99.35%	
Good listening and processing skills	100.00%	

Based on the table above, it clearly proves that the teachers' knowledge about the students' skills in the 21st century is still at a high level, with an overall percentage score of 94.77%.

21st Century Learning Concept

For this aspect, the correct answer is project-based assessment (100%), student-centered learning (100%), technology use in PdPc (97.39%), continuous assessment (100%), material-centered learning (100%), skills questioning and thinking skills, (98.69%) real life experience (100%) and meaningful and fun learning (92.13%). The table below shows the percentage score for aspects of the 21st century learning concept.

Table 1.5

Respondents' Study Findings About the 21st Century Learning Concept

21st Century Learning Concept	Percent	Overall Percentage
Project-based assessment	100.00%	
Student-centered learning	100.00%	
Use of technology in PdPc	97.39%	
Continuous evaluation	100.00%	
Content-centered learning	100.00%	98.52%
Questioning skills and thinking skills	98.69%	
Real life.experience	100.00%	
Learning in the classroom only	0.00%	
Learning is meaningful and fun	92.13%	
Focus on the exam	0.00%	

Based on the table above, it clearly proves that the teachers know about the concept of 21st century learning where none of the respondents chose the answer of learning in the classroom only and focusing on exams. The proof is that these eight correct answers were chosen by the respondents of the study proving the overall percentage score of 98.52%. The interpretation of the percentage score is at a high level.

Examples of Activity Based Learning

For the example aspect of activity-based learning, the correct answer based on the PAK21 handbook is all the answers listed, namely jigsaw (100%), think-pair-share (100%), hot seat (100%), reciting a poem or singing (95.42%), presentation (90.85%), discussion (92.81%), role play (89.54%), gallery walk (100%), three stray, one stay (100%) and iThink map (100%).

Table 1.6

Research Findings of Respondents About Learning Examples based on Activities

Examples of Activity-Based Learning	Percent	Overall Percentage
Jigsaw	100.00%	
Think-pair-share	100.00%	
Hot seat	100.00%	
Recitation of poems / songs	95.42%	
Presentation	90.85%	96.86%
Discussion	92.81%	
Role play	89.54%	
Gallery walk	100.00%	
Three stray, one stay	100.00%	
iThink map	100.00%	

Based on the table above, it also proves that the teachers' knowledge about activity-based learning examples obtained a high percentage for all answer items. Although not all answers obtained a percentage of 100%, the overall percentage score still shows a high score interpretation with a total of 96.86%.

Elements in the 21st Century Daily Lesson Plan

For this aspect, based on the 21st Century Learning handbook, the correct answer is all the answers listed, namely beginner activities (100%), learning objectives (100%), content standards (100%), main activities (100%), assessment (100%), strengthening, enrichment and recovery activities (98.03%), cross-curricular elements (94.12%) and closing activities (100%).

Table 1.7

Respondents' Study Findings About Elements in the 21st Century RPH

RPH PAK21 element	Percent	Overall Percentage
Beginner activities	100.00%	
Learning objectives	100.00%	
Content standards	100.00%	
Main activity	100.00%	99.01%
Assessment	100.00%	
Strengthening, enrichment and recovery activities	98.03%	
Cross-curricular elements	94.12%	
Closing activity	100.00%	

Based on the table above, it also proves that teachers know about the elements that must be present according to the daily lesson plan for the 21st century. This is proven by obtaining an overall percentage score of 99.01% which shows that the interpretation of the percentage score is at a high level.

Discussion

The results of the overall study prove that the percentage score of the five aspects studied in the 21st century learning (PAK21) is at a high level. This is evidenced by the overall percentage score for the basic standard aspects of 21st century learning (98.17%), student skills in the 21st century (94.77%), 21st century learning concepts (98.52%) and examples of activity-based learning (96.86 %) elements in the 21st century daily lesson plan (99.01%).

Findings for aspects of the basic standard in PAK-21 also prove that the study respondents know about the content in the basic standard in PAK-21. The proof, the interpretation of the percentage score proves a high level for the five correct answers, namely communication skills, collaborative skills, critical thinking, creativity and moral values and ethics." This finding is in line with the opinion of Abdul Said, Mohd Yusoff, Baharom and Shukri (2011). which says that the teacher's pedagogical knowledge plays an important role because it combines content and pedagogy to develop an understanding of how the topic, "problems and teaching issues can be organized, represented and adapted based on the various interests and abilities of students." PAK21 requires teachers to change the paradigm existing to learning that emphasizes student involvement for each PdP process that is carried out. Therefore, the researcher is of the view that the knowledge about the basic standards of PAK21 needs to be well mastered by the teacher so that they can implement all the basic standards well so that the students can master the five basic standards.

Findings for the aspect of student skills in the 21st century also prove that the study respondents know about the needs that students need to master in learning in the 21st century. The proof, interpretation of the percentage score proves a high level. This finding is in line with the wishes of the Malaysian Ministry of Education (2016), which wants the production of aspects of student development as a whole through learning and facilitation activities (PdPc) that cover various skills that need to be mastered well. In the researcher's view, student skills in the 21st century are something important that must be mastered by students because through the PdPc the teacher as a learning guide will help them to learn in a balanced formation situation such as the context of physical, emotional, spiritual and intellectual formation.

Findings for the 21st century learning concept prove that the study respondents know about PAK-21. The proof is that the interpretation of the percentage score proves a high level for the eight correct answers. This finding is in line with the guidelines from the Malaysian Ministry of Education (2015), through the "Malaysian Educational Transformation Bulletin" which reports that teachers need to constantly equip themselves with new knowledge and skills as well as new practices through teaching and learning practices in order to keep up with the development and 21st century needs. Therefore, the researcher thinks that teachers need to equip themselves with their knowledge about the concept of PAK-21 in more depth so that they can implement this PAK-21 well.

The next findings have also proved that the study respondents know about examples of activity-based learning in PAK21. The proof is that the interpretation of the percentage score has shown a high level. This finding also coincides with the views of Abdul Said, Mohd Yusoff, Baharom and Shukri (2011), who say that the formation of understanding about a topic, problems and issues that arise can be overcome with various examples of learning activities that are used and necessarily the abilities of a student can be identified. In the researcher's view, teachers should diversify their teaching methods through teaching and learning activities with students so that the PdP that is implemented will convey positive effects to them and will directly improve the aspects of student development as desired.

The last finding, for the aspect of the elements that must be present in the 21st century RPH also proves that the study respondents know. The proof, the interpretation of the percentage score obtained proves a high level. This finding is also in line with the Malaysian Ministry of Education (2015), which states that in preparing daily lesson plans, teachers should build objectives that are compatible with learning standards, choose PdP strategies and activities that are compatible with students' abilities and capabilities to achieve objectives, determine methods assessment and reflection after PdP to ensure the achievement of objectives. In the researcher's view, teachers need to apply all the pedagogic knowledge they have had before and add the latest pedagogic knowledge so that it is in line with the learning environment of the 21st century.

From the results of the study conducted, the researcher concluded that the level of knowledge of the teachers of Religious Primary Schools (SRA) around Shah Alam, Selangor about 21st century learning is good. Next, the Islamic Religious Department of Selangor and the school administration can also take additional initiatives by conducting regular in-service training, holding courses related to 21st century learning and also related workshops so that

it can provide benefits to teachers in further expanding their level of knowledge about any changes and improvements made by certain parties in the implementation of 21st century learning.

Implications

One of the things that is emphasized in learning in schools in this century is the use of digital technology that is growing rapidly nowadays. This finding has given implications where teachers need to change according to current trends that require a wider use of digital technology in PdPc. 21st Century Skills is not a construct that is difficult to apply in school learning if teachers take advantage of the use of digital technology provided.

Thus, this study provides several implications, namely the implications for the application of technology in PdPc giving students the opportunity to hone a variety of abilities such as communication abilities, group working abilities, critical thinking abilities, problem solving abilities and so on. The implications of these abilities can help students during PdPc in the classroom and can also be applied in the workplace later. The implementation of 21st century skills in the mastery of digital technology not only gives importance to teachers but also has a positive impact on teaching and learning. 21st century skills are very important in the context of education. This is because technology nowadays is needed for every teacher to carry out the tasks given.

Proposal for Further Study

Future research will be more meaningful if it can be combined with the diversity of teacher status, namely teachers who are in rural areas, teachers who are in cities, teachers of low, medium, and high economic status. Assuming this is taken into account and combines quantitative and qualitative design to obtain more in-depth information about the extent of the effectiveness of changes in digital technology among Selangor Islamic Religious Department (JAIS) teachers to face 21st century skills, where not can be met for previous studies. This study only involved teachers from 4 Religious Primary Schools (SRA) around Shah Alam only. Therefore, it is suggested that similar further studies be carried out in schools where the teachers are of different status, i.e. teachers who are in rural areas, teachers who are in cities, teachers of low, medium and high economic status.

Conclusion

In conclusion, the level of teachers' knowledge related to changes in digital technology in facing the learning needs of the 21st century is good. However, the Selangor Department of Islamic Religion (JAIS) and the school administration can also take additional efforts by conducting regular in-service training using existing digital technology, holding courses related to 21st century learning and also planning related workshops so that it can provide benefits to teachers in increasing their level of knowledge about any changes in education nowadays and also the improvements made are in line with the current needs that need to be disclosed to teachers.

The diversity of digital systems and technology nowadays is very important to produce teachers from the diversity of teacher status, namely teachers who are in rural areas, teachers who are in cities, teachers of low, medium, and high economic status. Education is the heart of development for society and the country. Quality and intellectual education is an effort in

developing the new millennium generation according to the needs of the 21st century. The teaching and learning implementation of teachers will be stunted and will not develop if the teaching methods and methods of teachers are not diverse with the use of digital technology. Therefore, knowledge of PAK21 skills is very important for teachers and students to be able to master learning and teaching activities in the classroom in a fun and non-boring environment. Without an organized education system, it can be considered that a country has failed in fulfilling its responsibility to uphold a quality education system.

Therefore, changes in teaching and learning need to focus on the mastery of 21st century skills with the use of digital technology by having more exposure to activities that use digital technology and exposing them to the global needs of today, in addition to improving the skills of teachers in preparation for challenges in the world of education that are increasingly challenging and widespread with the use of digital technology, teachers also need to seize every opportunity provided by the government in the field of education for future progress.

References

- Abdul Shukor. (2000). Development of a learning and thinking society. *Prosiding Persidangan Pengajaran dan Pembelajaran Kebangsaan 2000*, 1-16.
- Ahmad, N. L., Sho, S. L., Wahid, H. A., & Yusof, R. (2019). Kepentingan amalan pengajaran dan pembelajaran abad ke-21 terhadap pembangunan pelajar. *International Journal of Education, Psychology and Counseling*, 4(28), 28-51.
- Awi, N. A. L., & Zulkifli, H. (2021). Amalan kreativiti guru pendidikan islam dalam pembelajaran abad ke-21. *ASEAN COMPARATIVE EDUCATION RESEARCH JOURNAL ON ISLAM AND CIVILIZATION (ACER-J)*. eISSN2600-769X, 4(1), 40-54.
- Iberahim, A. R., Mahamod, Z., & Mohammad, W. M. R. W. (2017). Pembelajaran abad ke-21 dan pengaruhnya terhadap sikap, motivasi dan pencapaian bahasa melayu pelajar sekolah menengah (21th century learning and the influence of attitude, motivation and achievements malay language secondary school student). *Jurnal Pendidikan Bahasa Melayu*, 7(2), 77-88.
- Kamal, S. K. M., & Hamzah, M. I. (2021). PENERAPAN ELEMEN NILAI MURNI DAN ETIKA DALAM PEMBELAJARAN ABAD KE-21 DALAM KALANGAN GURU PENDIDIKAN ISLAM SEKOLAH RENDAH [THE APPLICATION OF ELEMENTS OF MORAL VALUES AND ETHICS IN 21ST CENTURY LEARNING AMONG PRIMARY SCHOOL ISLAMIC EDUCATION TEACHERS]. *International Journal of Advanced Research in Islamic Studies and Education*, 1(4), 16-31.
- Kementerian Pendidikan Malaysia. (1992). *Falsafah pendidikan kebangsaan*. Putrajaya: Bahagian Pembangunan Kurikulum.
- Learning, C. (2019). Kefahaman guru sekolah rendah Daerah Pekan terhadap pembelajaran abad ke-21 (PAK21). *Education*, 1(2), 01-12.
- Mailis, M. I. (2021). TAHAP PENGETAHUAN GURU-GURU SEKOLAH KEBANGSAAN DI DAERAH SEPANG, SELANGOR TERHADAP PEMBELAJARAN ABAD KE-21. *Jurnal Kesidang*, 6(1), 16-29.
- Muhali, M. (2019). Pembelajaran inovatif abad ke-21. *Jurnal Penelitian Dan Pengkajian Ilmu Pendidikan: E-Saintika*, 3(2), 25-50.
- Arsad, N. M. (2011). *Penyepaduan kemahiran-kemahiran abad ke21 dalam pengajaran dan pembelajaran Biologi*. Tesis Sarjana Pendidikan. Fakulti Pendidikan, Universiti Kebangsaan Malaysia.

- Rusdin, N. M., & Ali, S. R. (2019, November). Amalan dan cabaran pelaksanaan pembelajaran abad ke-21. In International Conference on Islamic Civilization and Technology Management (pp. 87-105).
- Rusli, N. F. M., Ibrahim, N. F. S. C., Raâ, M., & Nallaluthan, K. (2021). Persepsi Pelajar terhadap Aplikasi Multimedia Interaktif dalam Proses Pengajaran dan Pembelajaran Abad ke-21: Students' Perceptions of Interactive Multimedia Applications in the 21st Century Teaching and Learning Process. *Online journal for tvet practitioners*, 6(1), 15- 24.
- Simatupang, H. (2019). Strategi Belajar Mengajar Abad Ke-21. Pustaka Media Guru.
- Yusof, R. N. A. R., & Yaacob, N. R. N. (2022). TAHAP EFIKASI KENDIRI TERHADAP APLIKASI TEKNOLOGI MAKLUMAT DAN KOMUNIKASI BAGI PENGAJARAN DAN PEMBELAJARAN DALAM KALANGAN GURU PENDIDIKAN ISLAM SEKOLAH MENENGAH KEBANGSAAN DI PULAU PINANG. *Asian People Journal (APJ)*, 5(1), 179-189.