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IMPLEMENTATION OF THE PROJECT CITIZEN MODEL IN 21ST CENTURY LEARNING

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Abstract: The purpose of this study is 1) to determine the effect of project citizen model implementation to improve 4C skills of students of SMA Negeri 10 Fajar Harapan, a Senior High School in Banda Aceh, 2) to determine the effect of implementing the project citizen model for increasing digital literacy skills of students of SMA Negeri 10 Fajar Harapan Banda Aceh. The research method used in this study is quantitative research with the type of pre-experimental research with the design of one group pretest and posttest (one group). The results of this study indicate that the average score using descriptive statistical analysis of the 4C skills variable after being treated with the project's citizen model has increased. Then the digital literacy variable, the average score after being analyzed with descriptive statistics after being treated with the project citizen model also increased. so that the implementation of the project citizen learning model can improve students' 4C skills and can improve student digital literacy.

***Keywords**: 21st century skills; 4c skills, digital literacy, project citizen*

Introduction

Human life in an effort to develop human beings in facing global challenges. Through education, we can develop our potential, intelligence, skills,

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personality and morals that can be shaped and directed. Today's development has entered the 21st century where the 21st century is a century which is also referred to as the century of knowledge. This is based on the development of technology and information which continues to develop rapidly that all human activities related to the use of technology.

The development of the 21st century is characterized by various kinds of characteristics that explain the 21st century, among others, marked by the increasingly advanced world of science and technology. In this context, information and communication technology has been exploited on a large scale including in the world of education. This is proven by the use of technology and information carried out by teachers, and other related parties in the world of education. In addition, other evidence with the use of information and communication technology has narrowed and the fusion of space and time factors in the success of science by humanity. In the context of the Indonesian state in accordance with the law number 20 of 2003 concerning the national education system, "Education is a conscious and planned effort to create a learning atmosphere and development process so that students actively develop themselves to have religious spiritual power, self-control, personality, intelligence, noble character and skills needed by themselves, nation and state".

The 2013 Curriculum (K-13) is a curriculum that applies in Indonesia now based on the development of the era that has entered the 21st century era that has skills that must be possessed in the 21st century. In other words, the implementation of the 2013 curriculum is shown to answer the challenges of the times towards education which is to produce graduates who are competitive, creative, collaborative and characterized. According to Abidin, in achieving this orientation, it is well realized that education is not only done to develop the core subject knowledge of learning but must also be oriented so that students have creative, critical, communicative abilities as well as character (Abidin, 2014). According to Trilling and Fadel, they explained that in the context of the 21st century there were the main skills that students must have, they are 1) learning and innovation skills. These skills are skills related to critical thinking skills, problem solving skills, communication skills,

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collaborative skills, creativity skills and innovation skills. 2) Skills in mastering media, information and technology (ICT). These skills are skills related to skills in the use of literacy, skills in the use of media and skills in the use of information and communication technology. 3) Life skills and career. These skills are skills that are related to career skills in a flexible and adaptive career, initiative and independent skills, social and intercultural interaction skills, productive and accountability and leadership and sense of responsibility (Sumartini, 2018; Trilling & Fadel, 2009).

The project citizen model is one of the learning models with a problem-based instructional treatment approach to develop knowledge, skills and character of democratic citizenship that enables and encourages participation in various activities of government and civil society (Budimansyah, 2009). The project citizen learning model is a learning model that educates students not only to be able to understand scientific concepts and principles, but also to develop their ability to work together, be innovative, creative, think critically through real learning activities. Based on the results of the study, the project citizen learning model can develop critical thinking skills, confidence, team work, participation, commitment, good behavior and respect others (Fajri, 2019; Fajri et al., 2019; Fajri et al., 2020). The project citizen model has principles including student active learning, study in groups, participatory learning and reactive teaching.

According to Budimansyah, he explained that the project citizen has learning steps including: 1) identifying problems, 2) choosing problems for classroom studies, 3) gathering information, 4) developing portfolios, 5) presenting portfolios and 6) reflecting learning experiences (Budimansyah, 2009). The purpose of this study is 1) to determine the effect of citizen project model implementation on improving students' 4C skills and 2) to determine the effect of implementing project citizen model on increasing student digital literacy.

The 21st century learning is a conceptual framework that comes along in line with the phenomena of life that exist and develop today. Statements in the context of 21st century learning in Indonesia itself have the right place in order to achieve the golden generation in the year of 2045 through the

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implementation of learning processes that effective, optimal, and innovative in today's modern paradigm. (Panuntun, 2018) The shifting of the developing learning paradigm is currently being implemented through the development of the 2017 revised curriculum which contains several things that can develop 21st century skills in the learning process including HOTS (High Oder Thinking Skills), 4C (Communication, Collaborative, Critical Thinking and Creativity) and literacy activities. In the process, the learning series that has adapted the 2017 revised curriculum model in 2017 can be seen in the conceptual framework of references to regulations that have been issued, among others, government regulation number 13 of 2015 concerning the second amendment to government regulation number 19 of 2015 concerning standards national education.

The development and implementation of meaningful learning processes in the context of 21st century learning brings changes to the series of learning that is being carried out. Conceptual framework as has been developed by an institution called partnership for 21st century skill. The framework became famous in the field of information technology (IT) in education. This framework consists of eleven competencies that have been classified into three major elements or core consisting of: 1) Learning and innovation skills, 2) Skills for using information, media and technology and 3) life and career skills. The framework cannot stand alone and requires a support system that can realize Standards, assessments, curriculum, instruction, professional development and the state of the learning environment (Chu et al., 2017).

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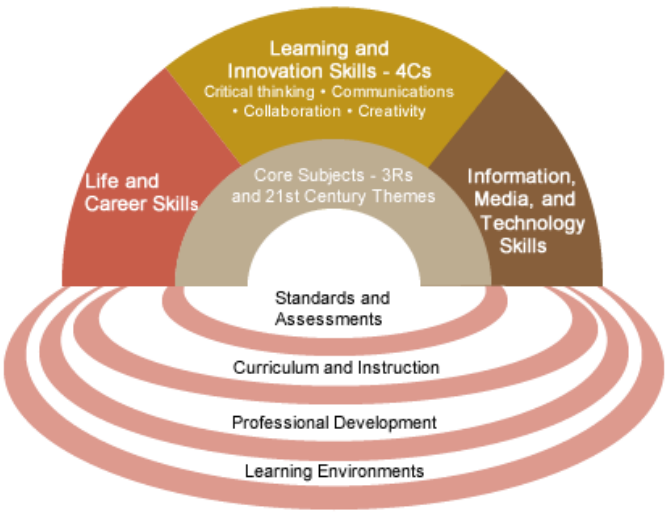

Figure 1. Framework of Partnership for 21st century skill (Chiarle, 2017)

Nowadays the development of information and communication technology provides the widest opportunity to be able to innovate in various fields of life, including in the field of education. The era that leads to open and increasingly strict competition globally to obtain and improve life skills that follow the needs of modern society. Development of a 21st century learning framework that includes three skills as a result of the learning process which consists of: 1) Life skills and career, 2) learning and innovation skills and 3) media, information and technology skills. In this case, learning and innovation skills, current learning practices in schools must be able to provide students with four skills, they are: Creativity, critical thinking, collaboration and communication which is often referred to as 4C. In Bloom's taxonomy, these 4C skills are in the realm of high-level thinking skills (HOTS) (Dwyer et al., 2014).

The framework for 21st century learning and innovation skills was created not only from business feedback but after full input from educators who were able to synthesize important needs for the world of work with how education can help to meet those needs. Most of the frameworks formed by partnerships for 21st century skills center on the imperatives that educators have placed on

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themselves to promote the development of 4C-centered student skills, collaboration, critical thinking, communication and creativity. The skills mentioned above are part of 21st century learning and innovation skills that are recognized as the tools needed by successful students in the 21st century work world (Faraj et al., 2015; Fajri et al., 2020; Ridayani, Fajri, & Yusuf, 2021).

Students today are familiar with digital technology and generally know how to access, create and share digital information. Ting, Greence, Yu and Copeland consider that for digital literacy, a person not only needs to be able to search and manage, but also research and integrate digital information. Even though today's students are generally considered technology savvy, many of them find it difficult to do so effectively (Ting, 2015; Greene et al., 2014). Gislter supports the previous idea that for digital literacy, one not only knows how to find information from the web, but also has the ability to understand and collect information from different print or digital sources. Digital literacy involves mastering ideas, and not just about using the technology it self (Tang & Chaw, 2016; Yusuf et al., 2019).

Jisc emphasizes that digital literacy depends on the context and suggests digital literacy seven elements of the model. They are media literacy, information literacy, digital literacy, learning skills, communication, and collaboration, career and identification of management and ICT literacy (Fajri, Suryadi & Anggraeni, 2021; Tang & Chaw, 2016). Digital literacy consists of three main, technical, cognitive and social emotional dimensions. The technical dimension concerns the skills needed to use IT proficiently. The cognitive dimension concerns the skills needed to search, evaluate, and synthesize digital information critically and at the same time to realize ethics, morals and law. The emotional social dimension is a dimension that relates to the skills to socialize online in the right way (Ng, 2012).

Digital literacy needs to be updated because digital technology evolves over time. Digital literacy can be classified into three levels namely, 1) digital competence or digital knowledge, 2) digital use or digital applications and 3) digital transformation or the creation of new knowledge as a result of digital

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use (JISC Digital Media, 2015). Observe when students can show various levels of digital literacy (Prior et al., 2016). Thus, the assumption that all students have a certain level of literacy can cause problems in online learning and each student will do something different from their level of digital literacy (Azhari & Fajri, 2021).

Much research has been done on 21st century skills research which in this case 4C skills and also research on digital literacy. The development of critical thinking skills, which are skills part of 21st century skills, uses a project citizen model. The results revealed that the development of critical thinking using citizen projects experienced a maximum increase (Nusarastriya et al., 2013). The development of the characteristics of critical thinking skills through project citizen models has increased especially in dealing with utilizing information, distinguishing rational and emotional claims, data analysis skills, argumentation skills and the ability to use evidence (Nusarastriya et al., 2013). Subsequent research on problem-based learning models and project citizen models in Civics learning on students' discipline characteristics and also on students' critical thinking abilities has increased and has the influence of both models on students' critical thinking skills (Marzuki & Basariah, 2017). Another study states that creative thinking is one of the skills that must be mastered by students in facing the challenges of the 21st century. Project-based learning is an appropriate and innovative learning model in developing 4C skills in 21st century learning (Putri et al., 2019). The last study states that the completion of tasks and the results of the analysis of each digital completeness aspect of students / ICT literacy which are in a very good category through the project-based learning model (Berman & Kuden, 2017).

The relevant research mentioned above only tests and measures one indicator of 21st century skills and 4C skills. But in this study testing all parts of 4C skills which included critical thinking skills, collaboration skills, communication skills and creativity skills. Therefore this study wants to examine in depth about the implementation of a project citizen learning model in improving 4C skills and students' digital literacy skills in the context of 21st century learning at SMA 10 Fajar Harapan, a Senior High School in Banda Aceh. So that students can

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have the skills needed in this digital and technology era and can develop various kinds of potential that exist through the project citizen learning model.

Theoritical

Digital literacy is the ability to use all kinds of digital media to be used with wisdom for the development of knowledge (Donaldson & Alker, 2019; Julien, 2017; Pangrazio, 2016). Digital media is important in social knowledge because it involves physical communication that becomes physical becomes non-physical. This transformation requires mastery of sufficient knowledge to respond to any development of social problems with wisdom. Everyone is free to submit their opinions, both honestly through personal accounts and honestly through accounts that support identity. All that is very interesting does not belong in the digital space which is in contrast to its identity in real space. How to construct social reality (Dreher, 2016; Sulaiman, 2016) and respond to debates about how to improve it on everyone, how to make everyone free from responsibility in expressing opinions that require other assistance. This ability can be mastered through the mastery of skills, the ability to communicate properly and correctly, the ability to collaborate through communication with oneself, and individual creativity (Thoughtful Learning, 2018; van Laar et al., 2017; Yulianto et al., 2019). This ability is shortened to 4C. Critical thinking is the ability of someone to understand a problem well that is realized through the identification of specific problems that are then analyzed in-depth and comprehensively to obtain certain formulations so that they can be implemented in solving these problems (Holmes et al., 2015; Shamim, 2017)

In the information age as now everyone is required to think critically so that it is not easily deceived and utilized by other people or groups or nations. Critical thinking needs to be based on the freedom of thought that considers human conscience. Critical thinking must also be accompanied by the ability to communicate properly and correctly. Good and correct communication is communication that can be received by others as a whole and without causing misunderstanding (Koester, 2016). Communication can be conveyed orally or in writing by the communicator to the communicant. In addition to critical

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thinking and communication, there is the ability of creativity and innovation which in current developments largely determines one's success. Creativity and innovation are one's ability to make an idea or new ideas about everything that is realized in a real job (Frey, 2018). Creativity always starts from the way of thinking "out of the book" or thinking everything outside in general. In the information age, the challenges of creativity are increasingly high, such as the traditional mode of transportation, which is ojek turned into a digital-based mode of transportation. The conventional trading system has been replaced by an online trading system. Even in the education system, the teacher room has provided a digital service that is more effective and efficient, so that people with dyslexia do not experience learning problems in school. Before the existence of the media, not a few dyslexic students were considered to be academically disadvantaged students and the problem was supported by the lack of teachers who knew students' problems. The last ability that is not less important is collaboration that requires a person to adapt easily both socially and naturally (Gibert et al., 2017).

Method

This study used quantitative research methods with the type of pre-experimental research. Then the research design used was one group pre test and post test. In this design, before being given treatment by using the learning model of the project citizen, the sample was first given a pre-test to see 4C skills and digital literacy of students. Then they were given treatment with the project citizen model. After that the post test (final test) was given to see the skills after using the project citizen model. The following is a table of research design for one group from pre test and post test:

Table 1. Research design for One Group

Pretest	Treatment	Postest
X_1	O	X_2

Information:
X1: Preliminary Test (Pretest)

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X2: Final Test (Posttest)
O: Treatment (Project Citizen Model)

The location of this study was carried out at SMA Negeri 10 Banda Aceh with a population of students of class XI MIPA (science) totaling 5 classes with an average number of 25 students in one class. Furthermore, the sample in this study was taken by using the sample random sampling technique by determining the class randomly, so that all classes have the same opportunity to become the research sample class. After being taken randomly, the class XI MIPA 3 was selected as the sample class in this study. Then the data collection techniques in this study used a questionnaire consisting of 4C skill questionnaires and digital literacy questionnaires. Furthermore, the data analysis technique used in this study is descriptive statistical analysis techniques to describe 4C skill variables and digital literacy variables. And testing the hypothesis in this study using paired sample test analysis techniques (different tests) using SPSS version 22 with a significant test of 0.05.

Result and Discussion

4C Skills (Critical Thinking, Communication, Collaboration and Creativity)

Below was descriptive statistical analysis of 4C students' skills, with 25 students in grade XI MIPA 3 of SMAN 10 Fajar Harapan. Analysis of descriptive questionnaire data of grade XI MIPA 3 students' 4C skills. From the table data obtained that the number of samples from the study was 25 students. Then the average value of 4C skills of students for pretest showed an average of 3.904, then for the average value of posttest showed an average of 4.116 after being given treatment with a project citizen model. Furthermore, from the analysis also found the value of SD (Standard Deviation) for pretest the value was 0.320 while for posttest was 0.4222. Then the value of variance or diversity for posttest was 0.103 while for posttest after being given treatment with a project citizen model of 0.176. Furthermore, for the top value category at Pretest got a value of 4.76 while the highest value of posttest was 4.96 and for the lowest value category at Pretest got a value of 3.16 while in the posttest was 3.32. Based on the results of these descriptions can be concluded that there was an

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increase in the use of project citizen models on students '4C skills so that project citizen had an effect on improving students' 4C skills.

The frequency distribution of percentages and 4C student skill categories, it can be concluded that the 4C skill level of class XI MIPA 3 students of SMAN 10 Fajar Harapan before being treated with a project citizen model found that 21 students were in good criteria with a percentage of 84% total students who became the sample of study. Furthermore, 3 students were in very good criteria from the total sample study with a percentage of 12% and 1 student in the criteria of sufficient with a percentage of 4%. Then after being given treatment with a project citizen model, it was found that 15 students were in the good criteria of the total sample which became a study with a percentage of 60%. Furthermore, 9 students were in very good criteria out of 25 people in the sample of study with a percentage of 36% and 1 student in the criteria with a percentage of 4%. Based on these results, the 4C skills of students experience an increase in project citizen models because there are differences between before and after the treatment of the model.

Before the hypothesis testing is applied, the data needs to be tested in the normality of the data so that the hypothesis testing process can be carried out. The normality test carried out in this study used the Kolmogorov Smirnov test with the help of the SPSS version 22 application program. The results of the 4C normality skills test of pretest and posttest students were normally distributed. This is evidenced by the significant value obtained at the presttest and posttest values getting the sig value. Namely 0.20 which is greater than 0.05. That way, it can be said that the value of 4C skills is normally distributed and meets the requirements for hypothesis testing. In research on influence, there will be a hypothesis testing to meet the requirements of a study. In this study hypothesis testing using the Pariari sample t-test is a testing technique to analyze the pretest results and posttest results. In this case the pretest and posttest results of the students' 4C skills were obtained through a questionnaire that had been distributed to students before and after treatment with a project citizen model. In the process of testing hypotheses having rules where the hypothesis is accepted or not, it must meet the testing criteria, namely the sig value. The test

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results must be smaller (<) than the sig value of 0.05 then Ha is accepted and Ho is rejected and vice versa if the sig value is greater then Ha is rejected or the hypothesis is rejected. The results of hypothesis testing can be seen in table 4 using the SPSS version 22 application.

Table 2. Results of Skills hypothesis test by testing paired sample t test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair Pos (4C) – 1 Pre (4C)	,21280	,33975	,06795	,35304	,07256	3,132	24	,005

Based on table 2 the results of testing the hypothesis, it can be concluded that the value of sig. (2-tailed) smaller than 0.05 which is 0.005 <0.05) so Ho is rejected and Ha is accepted. Based on that, the research hypothesis is accepted, namely there is a significant or positive influence on the implementation of a project citizen model on improving the 4C skills of class XI students of SMAN 10 Fajar Harapan.

Digital Literacy

Below is descriptive statistical analysis of students' digital literacy variables of 25 students at SMAN 10 Fajar Harapan in class XI MIPA 3. The results of the research on digital literacy variables of class XI MIPA 3 students can be seen from data processing using the SPSS program application as follows:

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Table 3. Results of descriptive analysis of Student's digital literacy data questionnaire

Statistics	Experimental Class (digital literacy)	
	Pretest	Posttest
Number of Samples	25	25
Mean	3,872	4,141
Standard Deviation	0,299	0,295
Range	1,133	1,133
Variance	0,090	0,088
Top value	4,400	4,666
Lowest value	3,266	3,533

Based on the results of table 3, the descriptive statistical analysis data from the digital literacy model of class XI MIPA 3 was obtained. From the table showed the results of a sample of 25 people with students' digital literacy for pretest at 3.872, then for the average score posttest given treatment with a project citizen model got a value of 4.141. Furthermore, the standard deviation for each pretest and posttest was 0.299 for pretest and 0.295 for posttest. The variance (diversity) of digital literacy data for the pretest got a value of 0.090 while for the value of the posttest was 0.088. Then for the highest value at pretest got a value of 4,400 while for the posttest was 4,666 and the lowest value category of each obtained for pretest at 3,266 while for posttest was 3,533. Based on these descriptive results, it can be said that there is an increase in students' digital literacy skills before and after using a project citizen model.

Table 4. Frequency distribution of percentages and categories digital literacy of experimental class students

Average score	Criteria	Pretest		Posttest	
		Fre	%	Fre	%
1,00-1,80	Very Bad	0	0 %	0	0 %
1,81-2,60	Bad	0	0 %	0	0 %
2,61-3,40	Sufficient	3	12 %	0	0 %
3,41-4,20	Good	19	76 %	13	52 %
4,21-5,00	Very Good	3	12 %	12	48 %
Total		25	100 %	25	100 %

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Based on the results of table 4 about the frequency distribution of percentages and digital literacy categories of students of class XI MIPA 3 of SMAN 10 Fajar Harapan, it can be concluded that students before being given the treatment of the learning process with a project citizen model achieved results which was out of 25 students, 19 of whom were in the good criteria with a percentage of 76%. Meanwhile, there were 3 students in sufficient criteria and 3 others in the criteria of very good with a percentage of 12%. Then after the students were given the pretest then the students were given the treatment of the learning process using the project citizen model, then the results were better which out of 25 students, 13 of them were in good criteria with a percentage of 52% and the rest were in very good criteria around 12 students with 48% percentages. Based on these results, it can be concluded that the project citizen learning model can improve students' digital literacy.

Before the hypothesis testing process is done, digital literacy data need to be tested for the normality of the data to see whether the data distribution of the data literacy questionnaire is normal or not. The normality test in this study was conducted using the Kolmogorov Smirnov test with the help of SPSS version 22 for Windows. Based on the normality test of the data, the results of pretest and posttest digital literacy got the sig value of 0.02. Thus, it can be said that digital literacy data is normally distributed because the sig value is> 0.05. Then the data hypothesis testing process is carried out because it meets the requirements to be tested.In this study, the hypothesis that was built was that there was a significant effect of the implementation of the project citizen model on the improvement of the student's digital literacy at SMAN 10 Fajar Harapan. The process of testing the hypothesis using the paired sample t-test is an analysis technique to test the hypothesis from the results of pretest and posttest. In the process of testing this hypothesis with decision making, the result of the sig value is smaller than 0.05, it can be said that the hypothesis is accepted. Conversely, if the sig value is greater than 0.05, the hypothesis is rejected. The results of the digital literacy hypothesis testing using the SPSS version 22 program for windows can be seen in table 5.

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Table 5. Test results of the digital literacy hypothesis with a paired sample t-test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair Pos (Literacy) - Pre 1 (Literacy)	,26933	,19386	,03877	,18930	,34935	6,946	24	,000

Based on the results of the SPSS output in table 5, the results of testing the research hypothesis, it can be concluded that the results of the sig. (2-tailed) smaller than 0.05 which is 0.005 <0.05 so Ho is rejected and Ha is accepted. Thus, the hypothesis of this study is accepted, namely there is a significant effect of the implementation of citizen project models on increasing digital literacy of students of class XI MIPA 3 of SMAN 10 Fajar Harapan.

Conclusion

Based on the results of research, data analysis and discussion, it can be concluded as follows: Implementation of project citizen learning models can improve students' 4C skills and implementation of project citizen learning models can improve students' digital literacy.

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