

ADDIE Model Design Process For 21st Century Teaching and Facilitation Activities (Pdpc) In Nationhood Studies Module

Siti Noranizahhafizah Boyman¹, Mohamad Basri Jamal², Nur Azah Razali³ & Muhammad Shamsinor Abdul Aziz⁴

Abstract — *This article aims to delve into the process of designing the Learning and Facilitation (PdPC) module of the Nationhood Studies course in the 21st Century Learning concept. This course aims to foster the spirit of patriotism and self-esteem among students. Literature studies show that 21st Century education has a positive impact on student attitude, motivation, and mastery of knowledge and is not solely focused on facts and theory. In addition, this educational transformation involving the 21st Century learning process has received parental support. It is arguable that 21st Century learning is a transformation that is being made to renew existing education standards to make the education system more flexible, creative, challenging and more complex. Therefore, the development of this module is essential to achieve that aspiration. To develop a systematic module, this study uses the ADDIE model introduced by Dick & Carry (1996). The process of designing this module is described in detail beginning with the stages of analysis, design, development, implementation and evaluation. The implication of this study is that the PdPC activity module is able to achieve effective learning outcomes and a systematic approach in line with the needs of the Ministry of Education in the Malaysian Education Development Plan 2013-2025.*

Keywords— *(ADDIE Model; Citizenship; 2nd Century learning; Design; module)*

I. INTRODUCTION

Education is a complex process that needs to be constantly dynamic. This is because the educational process is related to the changing of every generation, age and technology. From early generations to generations X (1965-1976), Y (1977-1997), Z (1998-2010) and Alpha (2010-present) (Siti Mahani & Nazlinda, 2016). Through education, various aspects of life can be learned and developed. Various efforts have been made to make the situation in the PdP process the goal that it wants to achieve. In line with this, the Ministry of Education Malaysia launched a 21st Century learning initiative in 2014 and expanded its implementation nationwide from 2015 (PPPM 2013-2025). This is an important national agenda in the process of transforming the country's education system.

What does 21st Century learning mean? In short, 21st Century learning is one of the efforts of the Ministry of Education Malaysia to implement education transformation through the Malaysian Education Development Plan (PPPM) 2013-2025. This concept of learning is said to fit the 21st Century generation, capable of addressing the needs and expectations of current and future education. Education experts also agree that teaching and learning methods need to be changed and adapted to technological developments, media and access to the internet more sophisticated (Perak State Education Department, 2016). Text-based conventional teaching methods are said to be less effective for students. Instead, the PdP process requires more innovative, dynamic, creative and instructional methods relevant to current developments.

Therefore, all parties involved directly with the education world need to be in tune with this mainstream in implementing education transformation. Even changes in education must keep pace with the development of time, needs,

^{1, 2 & 3}Dept. of Social Studies & Citizenship
Universiti Pendidikan Sultan Idris
35900 Tanjung Malim, Perak, Malaysia
noranizah@fjsk.upsi.edu.my (Corresponding author)
⁴Center for the Initiation of Talent & Industrial Training (CITra)
Universiti Malaya (UM)
50603 Kuala Lumpur
shamsinor@um.edu.my

and beyond. Educators need to be open-minded, innovative, creative and willing to accept change and be able to manage change effectively. This is important to keep the PdP process up to date, fresh and meet the current needs of students.

As such, Public Universities (PU) will also not be left behind and will need to join this mainstream in implementing educational transformations in realizing 21st Century learning concepts. This is a serious concern especially for the PU who have produced quality teachers; especially Sultan Idris University of Education (UPSI). This is because these teachers will teach in schools and apply the knowledge gained by developing it for themselves and their careers

II. PROBLEM & OBJECTIVE STATEMENT

Malaysia is a leading country in 2025; in line with the country's latest aspiration of Vision 2025. With many of the challenges facing the developed world, Malaysians need to be equipped with a wide range of basic skills in education and dynamic training as well as communication, mastery of languages, critical thinking and innovation. At the same time, various efforts are being made to transform the country towards achieving that goal. The field of education has also not gone through transformation to provide human capital that can meet the challenges of the 21st Century. To counteract this transformation, the Ministry of Education Malaysia launched a 21st Century learning initiative in 2014 through the Malaysian Education Development Plan (PPPM) 2013 - 2025 (MOE, 2013).

Literature studies show that 21st Century education has a positive impact on student attitude, motivation, and mastery of knowledge and is not solely focused on facts and theory (Azizah, 2015; Nur Khazinatul Fateha & Zamri, 2016; Ainun Rahmah et al. 2017). This educational transformation involving the 21st Century learning process has received parental support (Halif & Sakilah, 2015). It is arguable that 21st Century learning is a transformation that has taken place in the renewal of existing education to make the education system more flexible, creative, challenging and more complex (Faridah et al, 2016).

Since the Sultan Idris University of Education (UPSI) is a institution that produces quality teachers, researchers have taken it seriously to implement it in one of the university courses. Hence, the Nationhood Studies courses (HNP2012) was selected to develop a PdPC activities module with concept of the 21st Century learning. The selection of this course is because, firstly, a compulsory university course involving all undergraduate programs. Therefore, it is ideally suited to meet one of the 21st Century Learning's aims of establishing unity among the various ethnic groups in an effort to foster positive attitudes and respect for ethnic, racial and cultural differences (Ab. Halim & Nur Hanani, 2017). Secondly, this course is taught to university students with a large number of groups in a class of up to 120 students in one class. Third, it is of interest to the students because there is a perception among the students that this course is a very boring and time-consuming. Fourth, it is possible to streamline the PdPC process as it involves a large number of lecturers and a large group of students. Finally, this course is one of the tools that can contribute to the spirit of national love, foster unity and nation of Malaysia.

Therefore, the main objective of this article is to delve into the process of designing the Learning and Facilitation (PdPC) module of the Nationhood Studies course in the 21st Century Learning concept. This research needs to be implemented as a new innovation in diversifying teaching methods in line with the efforts of the Ministry of Education Malaysia to implement education transformation through the Malaysian Education Development Plan (PPPM) 2013 - 2025 (MOE, 2013).

III. LITERATURE REVIEW

21st Century Learning

Among the researchers conducting research in this area is Zamri (2011) studying 21st Century learning in empowering teachers, explaining students and learning Malay language in the 21st Century. The findings show that teachers need good communication skills and pedagogical knowledge. In addition, teachers also need to have reflective, creative and innovative thinking in the context of 21st Century education. According to Zamri (2011), teachers should act as a constructivist leader to stimulate students' thinking and able to assist and guide the students to create their own learning.

Next, Etistika, Dwi Agus & Amat (2016) discusses the features of 21st Century learning in writing about transformation of 21st Century education as the demands of human resource development in the global age. The results show that there are three key 21st Century skills needed in the industry. These include skills and learning for innovation, life and career skills as well as technology and media information skills.

Meanwhile, Badrul Hisham (2016) studied the practice of PdPC in his article about 21st Century teaching and learning practice among lecturers of the Ipoh Campus Teacher Education Institute. The results showed that communication skills had the highest mean score of 3.59. While critical thinking skills had the lowest mean score of 3.32. Therefore, researchers suggest that critical thinking skills need to be improved over time to produce quality, competent and dynamic lecturers.

Then, Ab. Halim & Nur Hanani (2017) in their paper explain about 21st Century learning in cultural diversity, hopes and challenges. According to Ab. Halim & Nur Hanani (2017), 21st Century learning is a learning strategy that

promotes positive attitudes and mutual respect among students of different ethnic, racial and cultural backgrounds. This is because 21st Century learning that emphasizes interaction and communication between students can enhance the level of interaction between students of different backgrounds and also bridge the gap between students.

Meanwhile, Ainun Rahmah, Zamri & Wan Muna Ruzanna (2017) conducted a study of the effects of 21st century learning. The results showed that learning the 21st century show a positive effect on attitudes, motivation, and achievement in learning the Malay language. This is because 21st Century learning can provide a fun learning environment for students. In addition, 21st-Century learning-based activities enable students to think creatively and critically and to encourage the exploration of knowledge among students.

Subsequent researchers, Rohani, Hazri & Mohammad Zohir (2017) presented the 21st Century Integrated Skills Model. This model was developed based on the results of a case study of four teachers conducting student-centred teaching. The main findings of this study show that professional mastery of teachers is a key element in determining successful implementation of 21st Century skills.

Later, Mistirine & M. Al-Muz-zammi (2018) reviews 21st Century learning challenges in 21st century education implementation in Malaysia. This study is based on the content analysis of 14 journal issues and proceedings on education in Malaysia from 2000 to 2017. The findings of this study show that there is a lack of research in 21st Century learning because 14 studies analysed directly do not touch on the implementation of 21st Century learning 21 of the policy makers, the Ministry of Education Malaysia.

Then, Muhammad Talhah et. al (2019) discussing PdPc of Islamic Education that relevant to the concept of industrial revolution 4.0 by adapting Learning Skills of 21st Century, authentic learning, soft skills, and Critical Thinking Skills (HOTS). The findings show Islamic Education teacher training programs need to be diversified, updated to meet educational challenges 4.0. Islamic Education teachers need to be creative, innovative to make learning more interesting relevant to the current context. Teachers of Islamic Education should also be wise to translate, plan and execute PdPc in the classroom so as to provide a learning sequence that is able to shape the student's experience to eventually contribute to the required workforce.

Finally, Mashira et. al (2019), study 21st-century learning practices (PAK21) in the teaching and learning process (PdPc) of primary school teachers. The results showed that the practice of PAK21 in PdPc in primary school teachers was successful. However, improvement is needed as some teachers are still unsure whether they know or understand PAK21. There are teachers who are still unable to master the technology of today. The study also found that there are major problems faced by teachers in implementing PAK21 and its recommendations should be taken into account. The implication of this study is that improvements and strategies of PAK21 need to be made.

B. Learning and Programming Modules (PdPC)

Among the researchers who did research on the PdPC module was Darvina (2003), in a master's thesis entitled *Development and evaluation of computer-aided CD-based interactive learning materials (PBK) for marketing subjects in Polytechnics*. The results show that the interactive CDs produced are student-friendly, content-friendly and user-friendly.

In a subsequent study, Aminordin & Fong (2004) examined *The effects of computerized learning on weather phenomena*. The results showed that students in the animated animation group achieved higher mean achievement scores compared to the students in the animation and static graphics group. Aminordin & Fong (2004) conclude that the use of animated graphics can assist students' learning especially when animated graphics are presented in stages.

The study by Norasykin & Faridah (2008) built a scenario-based learning module in *Interactive Multimedia Module Development using a scenario-based learning approach for CD-ROM based Multimedia Software Development*. This multimedia module is based on the ADDIE Model and the application of a scenario-based learning approach. The resulting CD-ROM contains several multimedia, namely text, graphics, audio and animation. The findings of this study show that the use of multimedia modules can enhance student performance and increase the collection of reference materials published by the faculty.

In addition, Siti Hajar, Shukri & Mohd Razha (2011) examined *The effectiveness of learning processes using video conferencing technology*. The study was conducted using a quantitative approach through a questionnaire involving 226 respondents and analysed using descriptive statistics and ANOVA. The results show that learning processes occur when students attend video conferencing sessions.

Furthermore, Noor Miza (2015) developed a module of learning in a doctoral thesis entitled *The construction of a module based on a project approach to improve the communication skills of kindergarten students*. The module is built on the ASSURE Model. The findings show that the use of project approach modules has a positive impact on teacher pedagogical knowledge. The student-centred project-based instructional module of the project enables improved student interaction and also encourages pupils to master communication skills.

Later, Ummu Nasibah, Muhammad Izuan & Nazipah (2015) developed a module entitled *ADDIE Model in the process of designing the teaching module: Arabic special purpose language at the Islamic University of Malaysia for example*. This study aimed to explore the use of the ADDIE model in the design of Arabic language teaching modules at the Islamic University of Malaysia. The results show that the ADDIE model is the best model for developing a course module. This is due to the five-phase ADDIE model, whose analysis, design, development, implementation and evaluation are comprehensive and systematic as the basis for the development of teaching modules.

Meanwhile, Norhapizah, Ab. Halim & Norazah (2016) studied *The acceptance of digital learning module based on blended learning strategy (e-CITAC) in TITAS course*. The results show that e-CITAC learning modules can help students gain knowledge and skills of TITAS courses. In addition, students are of the view that the e-CITAC module can benefit from mastery of learning, increased learning interest and skills competency.

In the next review, Aliza & Zamri (2016) discussed *The development and use of play-based modules for preschoolers' learning of Malay language skills*. The module includes four skills, namely speaking, reading, reading and writing skills and evaluated by 20 assessors consisting of 8 area experts and 12 preschool teachers. The findings of this study show that play-based learning modules can enhance the learning of kindergarten students and enhance their achievement in Malay language subjects.

Later, Ruzaini Hisyam (2017) developed a module titled *Development and evaluation of teaching and learning modules based on the multimedia subject of Design and Technology primary school*. The findings show that students who are taught through multimedia-based modules have positive perception in three aspects, namely multimedia, motivation and understanding.

Then, Jamalludin & Siti Nurulwahida (2017) developed a learning module in the paper entitled *Development of interactive video-based learning modules for Visual Basic Programming learning based on project approach*. The built-in learning module incorporates interactive video and project-based learning based on the ADDIE model. The results show that the combination of interactive learning and video modules can enhance student understanding and increase student mastery of the applications developed.

Finally, Sumarni & Zamri (2018) review the use of Frog VLE in the learning of Malay Language. The study also looked at the level knowledge, attitudes and student's readiness to the Frog VLE in Malay Language. The results show that the students in four secondary schools in the area Tawau studied with a positive attitude on the use of virtual learning within among students. This is the beginning good for this student to wave TMK is increasingly challenging in the field education. The use of computers as media key in the PdPc TMK process is acceptable good by students.

METHODOLOGY

To develop the module, this study uses the ADDIE Model and the 21st Century Learning concept.

a) ADDIE model

The ADDIE model is used to develop the CSR activities of the Nationhood Studies course which includes elements of 21st Century learning as listed in the third study objective. In addition, the ADDIE model is also used to produce Nationhood Studies course module by topic, based on the concept of the 21st Century Learning objectives as in the fourth study.

The ADDIE model is based on behaviourism, an idea developed by Dick & Carry (1996) to design the learning system. The term ADDIE is an acronym for Analysis, Design, Development, Implementation and Evaluation. This model is one of the teaching models that often form the basis of other teaching design models. This ADDIE model covers the following phases:

Table 1: Phases of the ADDIE Model

Phase		Items
A	(Analysis)	Analysis
D	(Design)	Design
D	(Development)	Development
I	(Implementation)	Implementation
E	(Evaluation)	Evaluation

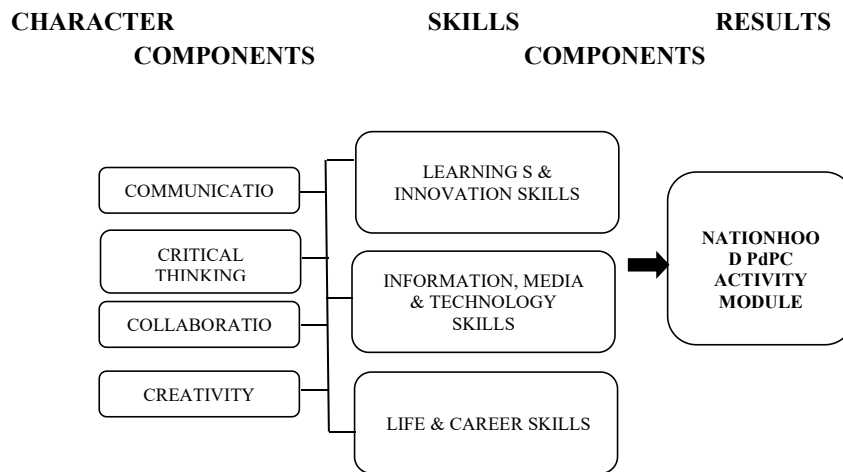
Source: Dick & Carry, 1996.

b) 21st Century Learning Concepts

The development of this Nationhood Studies course module is a based on the 21st Century learning concept. The Malaysian Ministry of Education has identified 21st-Century features and skills that are relevant to the local context and can prepare Malaysians to compete internationally. Therefore, the national curriculum aims to produce students who are

balanced, resilient, passionate, principled, informative, and patriotic, as well as thinking, communicating, and working as a team (see Figure 1).

Figure 1: Contents of the Components of the Nationhood Studies PdPC Activity Module based on a concept of 21st Century Learning



IV. FINDINGS & DISCUSSION

Process Developing Module

The process of developing this module is carried out through the following phases:

- a) Developing a PdPC activity module in the 2nd Century Learning concept. Some of the topics in the module are as shown in Table 2 below;

Table 2: Topics of the Citizenship Module

Chapter	Topic
1.	History of Malaya Development -Prehistoric era -First kingdoms
2.	Colonization -Portuguese, Dutch, British, Japanese, Siamese -Effect
3.	Building the Nation -The rise of the nationalism spirit -Malayan Union -Federation of Malaya - Process towards independence
4.	The formation history of Malaysia -Early formation, obstacle, effects
5.	Constitution - Concepts, history, elements of tradition, amendments, Constitutional monarchs.

6.	The National Principal of Malaysia -Ideology, purpose, impact, importance
7.	System of Government and Administration Features of federalism, parliamentary democracy, state systems, power segregation, state & local governments
8.	Government Policy - Includes social, economic and political policies
9.	Issues in Malaysia - Selfidentity, terrorism, patriotism etc.

For the purpose of module development, the ADDIE model is used as a guide. The ADDIE model is a generic process widely used by instructional designers and training developers. It represents five (5) phases of Analysis, Design, Development, Implementation and Evaluation which represent dynamic and flexible guidelines for developing appropriate teaching aids. This model was chosen because of its flexible factors that allow for adaptation between traditional and individualized instruction. The phases in the ADDIE model can also be tailored to the needs of the target user, and can be used in combination with other models as well. The following are brief phases of the ADDIE model.

- A** (*Analysis*) - *Analysis*
- D** (*Design*) - *Design*
- D** (*Development*) - *Development*
- I** (*Implementation*) - *Implementation*
- E** (*Evaluation*) - *Evaluation*

i) Analysis

In the first phase of **Analysis**, it is the stage for identifying the problem and how to solve it. The purpose of conducting analysis as the first stage of the development of the learning module is to ensure that the design of the learning module can meet the needs of the students in order to solve the problem effectively. Therefore, some analyzes will be performed, such as learning environment analysis, user analysis, identifying teaching goals and so on (Baharuddin et al., 2002). Various methods can be used to identify problems, such as interviews, observations, surveys, questionnaires and so on. The information obtained through the analysis phase will be used in the next phase.

In this phase the researchers look for related materials through discussion, reading and preliminary observations to determine what gaps need to be filled. At this stage, the problem of instruction is identified, the goals and objectives of the study are set and the existing knowledge and skills that the student has.

ii) Design

In the **Design** phase, it is the second phase of the ADDIE model and is performed after the analysis phase. The design phase implemented is intended to determine and design instructional methods that will be used in the development of the learning module (Khairuddin, 2015). According to Allen (2006), instructional plans will be set in the design phase including teaching methods and media that will be used in PdPC. Also, the design phase also involves the determination of the forms, structures, teaching approaches, learning theories, types of media and technologies used (Baharuddin et al., 2002). Therefore, several things need to be determined in the design phase, such as appropriate learning objectives, activities, training and tests that need to be implemented and how or how information is presented in the application.

In this phase, researchers provide storylines, required tools and activities that are in line with the topics in the PdPC activity module of the Nationhood Studies course that are 21st Century learning concepts. All materials or equipment provided are meant to help incorporate elements of learning outcomes that foster the spirit of patriotism and high self-esteem among students.

iii) Development

While in the **Development** phase, it is the third phase of the ADDIE model. This phase is the phase in which the learning module will be used (Kemp, Morrison & Ross, 1998). The production of learning modules in the development phase is based on the design results implemented in the previous phase. In addition, the development of learning modules should also include user guides, lesson content, training and stimulation to attract interest (Baharuddin et al., 2002). The development phase will proceed to the implementation phase once the learning module has been completed.

In this phase, the researchers provide details on the development of the module. The Nationhood Studies course consists of nine main topics. Each topic will be developed by PdPC activities that are based on 21st Century Learning concepts.

Table 3: Topics of the PdPC Activity Module for the Study of 21st Century Learning Concepts

Topic	Activity	21st Century Elements
History of Malaya Development -Prehistoric era -First kingdoms	Glorious	Elements: Critical Thinking, Collaboration, Creativity Skills: Information & Media Skills
Colonization -Portuguese, Dutch, British, Japanese, Siamese -Effect	This is Our Country	Elements: Critical Thinking, Collaboration, Communication Skills: Life & Career Skills
Building the Nation -The rise of the national spirit -Malayan Union -Federation of Malaya -Process towards independence	Bangsaku Malaysia	Elements: Creativity, Critical Thinking, Communication Skills: Learning & Innovation Skills
The formation history of Malaysia -Early formation, obstacle, effects	My Homeland	Elements: Critical Thinking, Collaboration, Creativity Skills: Information & Media Skills
Constitution - Concepts, history, elements of tradition, amendments, Constitutional monarchs.	My country is sovereign	Elements: Critical Thinking, Collaboration, Communication Skills: Life & Career Skills
The National	I'm a	Elements:

<p>Principal of Malaysia -Ideology, purpose, impact, importance</p>	<p>Malaysian</p>	<p>Creativity, Critical Thinking, Communication Skills: Learning & Innovation Skills</p>
<p>System of Government and Administration -Features of federalism, parliamentary democracy, state systems, power segregation, state & local governments</p>	<p>Democracy for All</p>	<p>Elements: Critical Thinking, Collaboration, Creativity Skills: Information & Media Skills</p>
<p>Government Policy the country - Includes social, economic and political policies</p>	<p>The Sea</p>	<p>Elements: Critical Thinking, Collaboration, Communication Skills: Life & Career Skills</p>
<p>Issues in Malaysia - Selfidentity, terrorism, patriotism etc.</p>	<p>I Love My Country</p>	<p>Elements: Creativity, Critical Thinking, Communication Skills: Learning & Innovation Skills</p>

Once it is almost ready to be developed, the researchers overviewed at the draft activity module intending to look at the discourse of the content and the interactions that occur between the students and the activities to be performed.

iv) Implementation

Furthermore, in the **Implementation** phase, the learning modules generated during the development phase will be used and tested in the implementation phase (Greer, 1996). The implementation phase involves the process of running a real learning module and includes a designed course framework. This is to ensure the effectiveness of the implementation of the learning module (Ummu Nasibah et al., 2015). Besides, the implementation phase is also aimed at improving the module materials provided by testing the learning module. According to Ummu Nasibah et al., (2015), several things need to be tested in the implementation phase, such as teacher preparation, student preparation and background and classroom environment.

v) Evaluation

Finally, the fifth phase, the **Evaluation** phase, will be conducted as a process for testing and evaluating the suitability of the learning module developed. The evaluation phase is aimed at ensuring that the learning module runs smoothly and achieves objectives (Cozby, 2001; Siti Noranizahhafizah, 2019). According to Allen (2006), there are two types of assessments to test learning modules, namely formative assessment and summative assessment. Formative assessment aims to improve the effectiveness of the learning module. While summative assessment is intended to evaluate the whole of the learning module produced.

V. CONCLUSION

As a result of this research, it can be concluded that ADDIE Model is a complete and systematic design model for developing modules. This is because the phases are comprehensive and structured. The five phases proposed in the ADDIE Model are relevant in the development of the module as they can guide the design process as the output of each level becomes input to the next level. This description of the ADDIE Model process can help other researchers use it as a basis for designing modules. This is important to ensure that the module being developed meets the objectives you want to achieve. In summary, the PdPC activity module Nationhood Studies course in the 21st Century Learning concept developed to meet the learning outcomes set in line with the National Education Plan.

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