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Reliability of the M-Classy-Art Module Fashion Illustration Website Based Self-Learning Support Sisem National Dual Training (NDTS) Apprenticeship

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Abstract

The use of mobile learning as a learning material needs to be expanded in teaching and learning skills. The problem that exists is the lack of website-based learning and multimedia through mobile applications developed for NDTS apprentice skills learning specifically for the fashion design illustration competency unit in the Women's Clothing Manufacturing sector. Therefore, the purpose of developing M-Classy-Art is to be used as a learning support material as well as to improve the apprentice's self-learning. The objective of this study is to develop and evaluate the reliability of the fashion illustration competency self-learning module to identify acceptance and usability among apprentices based on the apprentice's education level, marital status between single and married apprentices and the apprentice's age towards M-Classy-Art. A total of (n=30) apprentices were selected as respondents in a pilot study using a questionnaire instrument. Overall, M-Classy-Art has been successfully developed and tested for product reliability. As a result of reliability, the pilot shows that the multimedia integrated in M-Classy-Art meets the requirements such as the use of text, video, audio, animation and graphic elements, 90.3% strongly agree and 9.7% agree. A pilot study shows that multimedia is accepted as a support material in learning. In conclusion, M-Classy-Art based on a mobile website has a high reliability value. M-Classy-Art is accepted by every layer of apprentices, considering the apprentices have different educational background, marital status and age factors.

Keywords: M-Classy-Art Reliability, Fashion Illustration, Mobile, Multimedia, NDTS Apprentice.

Introduction

The development of information and communication technology (ICT) in the modern era has had a great impact not only on the development of the country but also on the world of education today. This development has brought a new transformation in the world including skills education. The world of education today is no longer conventional but is outside the box

approach that reaches far ahead and is surrounded by an environment that is more oriented towards information and communication technology which has changed the way people learn (Rahman, 2017: Varga, 2020). The teaching and learning process nowadays is no longer limited to the classroom and the use of books only as there are others various technological tools that have helped the teaching and learning process that can happen anywhere and at any time (Tereshchenko et al., 2020; Varga, 2020). Therefore, the knowledge delivery system has experienced another technological evolution when. Mobile learning or m-learning was introduced to increase the level of the self-learning process Yusri (2015). In Malaysia, mobile-based skills learning is considered to be still new from the aspect of implementation and the readiness of instructors for technological changes. This statement is supported by Kibaru (2018), where mobile learning is a new concept implemented in the skills learning process and it emphasizes the ability to move the learning process without being bound to the physical location where the learning process takes place. Next, according to Abdillah & Musa (2021), who titled the readiness of apprentices and instructors for the new norm of digital teaching and learning process in their study states that mobile learning as the delivery of learning content using mobile electronic devices is a method to make learning a topic to be more interesting and effective. This study is to examine the development and reliability of the fashion design illustration module that refers to the NOSS code C141-005-2:2021-C01 for the Malaysian Skills certificate syllabus level 2 in the field of Women's Clothing Manufacturing. In measuring the evaluation of the module, the researcher only measured the difference in the level of education of the apprentice, the marital status of the apprentice and the age of the apprentice through a questionnaire conducted through the survey method. The results of the developed product will receive expert validation and be tested for reliability so that this M-CLASSY-Art self-learning module can benefit apprentices from different backgrounds. In general, the M-CLASSY-Art self-learning module of fashion illustration competence using the medium of electronic devices can be used as a learning alternative for apprentices and a teaching aid for SLDN teaching staff in particular. Learning strategies through the development of a self-learning module M-CLASSY-Art Fashion Illustration can be used by apprentices with methods that are very relevant in this era of technology. The development of this M-learning module can stimulate the ability of apprentices to engage in independent learning and act as a solution to their daily skill problems. The activity of this M-CLASSY-Art module is also interesting and creative hands on, at least the apprentices do not miss out if they are not present in the learning or training session, instead they can access it through their respective smartphones. Therefore, this study can have a good impact on skill apprentices. It is very important to ensure that apprentices master and understand the concepts in the Fashion illustration unit. The effect of this mastery will help apprentices increase their interest, always be faced with learning technology, always have the nature of experimenting with the unit of competence and be able to produce disciplined human capital and practice independent learning which will greatly help them either during their apprenticeship or in the world of work later.

Literature

National Dual Training System (NDTS)

The implementation of the National Dual Training System (NDTS) program in Malaysia is an adaptation of the dual system that has been implemented in Germany MLVK, 2005 (JPK, 2009). The NDTS program that was introduced in Malaysia in 2005 is seen to look back on the history of cooperation through the formation of a team for the Bilateral System Project

(DSP) between Malaysia and Germany (Pang, 2010). A study by Rahim et al (2017), NDTS 's National Dual Training System in Malaysia focuses on the need to produce Knowledge Workers or k-workers in this country, that is, an industry-oriented training system. The combination of industry and training centers is able to produce a workforce that is multi-skilled and knowledgeable as well as versatile that is willing to learn continuously. According to Pang (2014), National Dual Training System. 'Dual' means training in two learning situations. The actual workplace (industry) which includes 70% to 80% practical training (performance) and the Training Center which includes 20% to 30% theoretical learning (knowledge). NDTS apprentices undergo full-time skills training using a skills syllabus based on the National Occupational Skills Standard (NOSS). Through the complete NDTS training path, the apprentices will be awarded the Malaysian Skills Certificate. This certification offers five (5) certification levels. Starting with the awarding of the Malaysian Skills Certificate (SKM) Level 1, Malaysian Skills Certificate (SKM) Level 2, Malaysian Skills Certificate (SKM) Level 3, Malaysian Skills Diploma (DKM) Level 4 and Malaysian Advanced Skills Diploma (DLKM) Level 5 (JPK 2021 https://www.dsd.gov.my).

M-Learning

Mobile learning or M-learning can make a topic more interesting to follow (Elkhateeb et al., 2019). M-learning is a method that provides convenience for apprentices and instructors, where they can undergo training regardless of place and can be conducted at any time (Fariduddin et al., 2019). In order to ensure that the m-learning process runs smoothly and effectively, the use of materials for the M-learning process also needs to be emphasized. Research on M-learning through What'sapp Application displays Kamal's Page by Hikmah et al. (2021) showed that apprentices were more interested in their learning. A study conducted by Hassan et al (2021) entitled Learning Effectiveness and M-Learning Teaching on student learning at Hulu Langat Community College aims to identify the level of effectiveness and challenges faced by students. The study of Zakaria et al (2017), entitled The Use of Multimedia in Teaching and Learning of South Zone Polytechnic TVET Lecturers aims to identify the level of technology use among lecturers. A study by Rashid et al (2017), also used video demo elements as an online demonstration tool to teach. Video demonstration is a way to train apprentices to observe and perform an activity according to the correct procedure. The conclusion of this study is that multimedia videos are able to display the order of image movement in an orderly and systematic manner, while apprentices have the opportunity to repeat the teaching material frequently if they do not understand. However, video elements should be interactive because interactive videos have a better effect on apprentice learning. This is proven through the study of Adenan (2019), who found that lectures that use interactive video demos have a better effect in terms of understanding and memory consistency of the content compared to lectures that only use conventional videos. The results of these past studies show that m-learning can attract interest and make it easier for apprentices to learn. Therefore, learning aids in the form of m-learning for the fashion illustration competency unit for NDTS apprentices in the women's clothing manufacturing sector particularly should be developed to facilitate learning for NDTS apprentices.

Fashion Design Illustration Competency Unit

The fashion design illustration competency unit sets a goal (outcome) that must be mastered by the apprentice, which is that at the end of learning process, the apprentices must be able to express the development of the idea in creating a fashion design. As a result of learning

this competency unit, apprentices are able to (i) identify clothing silhouettes and human body shapes, (ii) create figure sketches, (iii) draw fashion figures and (iv) master the techniques of producing fashion design ideas according to concepts and themes. If the goals (outcomes) and objectives of this competency unit are seen in more depth, it has shown that this competency unit of fashion design illustration is also in line with the rapid development of the age where apprentices need to think further with certain skills using the latest technology. This competency unit describes the four work activities (WA) required in the NOSS-based fashion design illustration competency for apprentices to be proficient in the unit. In order to facilitate the apprentice's understanding of this unit, the delivery method should also be in line with the times such as conducting the M-Classy-Art module which applies multimedia-based learning.

Multimedia Elements

The skills learning sector does not ignore the need for multimedia as a learning control power (Zulazizi & Azmil, 2020) in addition to the IR 4.0. era. Multimedia is a combination of text, graphics, audio and video with aid by technology to support understanding (Guan et al., 2018). According to Abdulrahaman et al (2020), multimedia or digital learning resources help apprentices to continue learning well with mental representations by the use of different media elements, which support information processing. Therefore, an alternative teaching aid that can be used to make PdPc more effective and interesting is to use modules that apply multimedia software (Salsidu et al 2017). A study conducted by Hisyam (2017), shows that the PdPc method using multimedia-based modules provides more understanding to apprentices compared by the use of textbooks. The results of Chen and Wang's research (2021), stated that the integration of text, graphics, audio, animation and video in multimedia software provides effective learning and teaching because the software gives a clear picture of the contents contained in the textbook. This shows that the presentation of knowledge in the form of a combination of text, animation, graphics, audio and video has more impact on the acceptance of apprentices compared to reading books or teaching via 'chalk and talk' and thus, coincides with the Cognitive Theory of Multimedia Learning applied in the development of the M module- Classy-Art.

Research Objective

1. Develop the M-CLASSY-Art self-learning module of fashion illustration competence for NDTS apprentice.
2. Assess the reliability of the M-CLASSY-Art self-learning module of fashion illustration competence for SLDN apprentices based on i) Education level of apprentices who have SPM and without SPM ii) Marital status between single and married apprentices iii) Apprentice age.

Study Method

A quantitative study with a module development design is the methodology used in this study. The chosen location is at five NDTS training centers that conduct training in the Women's Clothing Manufacturing sector in Perak. The selection of the sample in this study is divided into two, namely purposive sampling for M-Classy-Art module assessment experts (n=9) and instrument experts (n=2), and random sampling for actual respondents (n=110). The instrument used in this study is a questionnaire distributed to apprentices.

M-Classy-Art Module Development

The ADDIE model was chosen as the basis for developing the M-Classy-Art module. The ADDIE model is a model that is often used because of its effectiveness in developing a teaching software (Paris & Saedah, 2016). In addition, the study of Hadi et al (2017), found that the use of the ADDIE model in the design of learning modules had a positive effect on academic achievement or skills. In addition, the ADDIE process becomes more systematic, dynamic, and synergistic with a combination of learning techniques and theories. This shows that the ADDIE model is very suitable as a pillar in the development of the M-Classy-Art module because the learning module contains a combination of learning theory and goals. Figure 1 shows the five sequence of phases that the researcher needs to go through in completing the M-Classy-Art module development study.

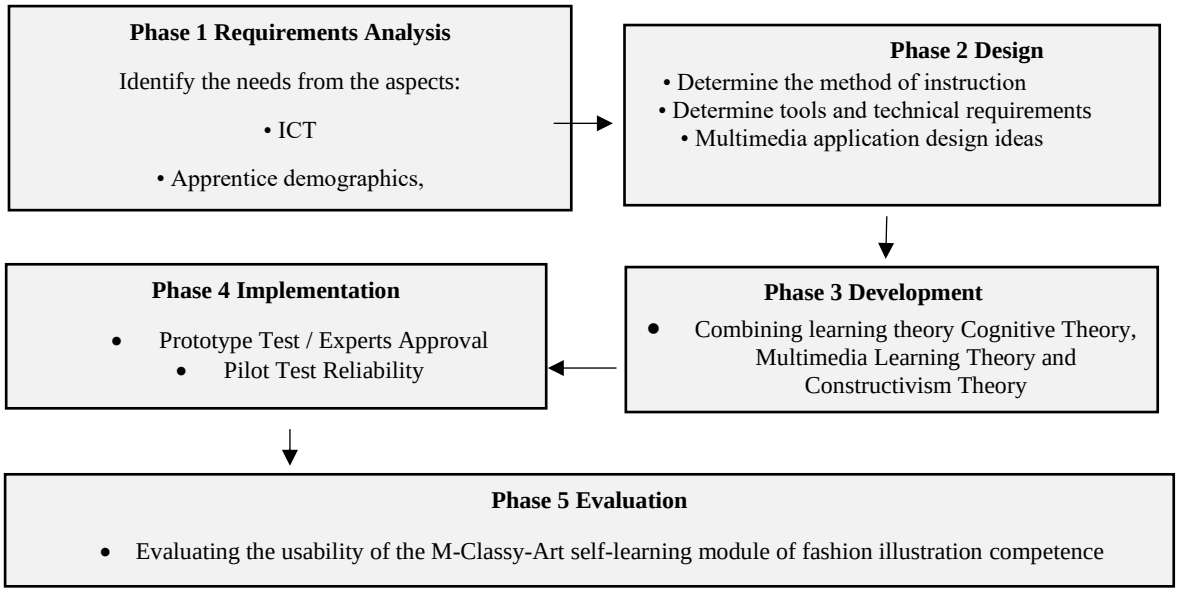

Figure 1: Shows the five phases that the researcher goes through in completing the study M-Classy-Art module development.

M-Classy-Art Design and Development

In this phase, the researcher determines instructional methods such as creating a lesson plan according to the learning theory that has been discussed in the literature review chapter, building a module development flowchart, developing a storyboard, determining technical tools and providing a learning guide for apprentices who will use them. The development phase is conducted by starting with creating a storyboard as a guide for initial ideas. This development phase is done based on the design that has been established during the design phase in stages. In this study, the researcher chose to use Visual Studio Code software (vs code) with Hypertext Markup Language (html) and Cascading Style Sheet (css) programming languages. Among the programming languages, the vs code software have user-friendly and simple interface. In addition, various multimedia element stimuli such as text, graphics, audio, video, animation and interactive user will be loaded. Separately edited videos will go through the coding arrangement on each video on the page according to the storyboard plan. The coding process is also carried out in the development phase where this coding will give instructions to the buttons placed on each display to connect each interface in M-Classy-Art. This phase also involves the process of completing the work steps done in the development phase and considered a technical problem solving phase. This is because if the developed

website has any problems, the development phase needs to be repeated and the researcher able to fix the problems encountered. In this phase, researchers develop M-Classy-Art based on multimedia principles such as text, graphics, audio, animation and video. The developed M-Classy-Art module takes the form of a website that can be browsed at https://m-classy-art.github.io/.

Multimedia Loading

Five multimedia elements such as text, graphics, animation, audio and video are applied as variations that create interest among the apprentices in learning and are loaded on the entire module. The note text on the Explanatory Paper Page is to be very appropriate. The graphic display in the form of a slide can be changed when the screen is pushed on the graphic slide provided. The Competency Unit page on each work activity (WA) contains a demo of systematic practical work production. The Competency Unit Page interface displays video, audio and graphics in the form of practical work steps to make it easier for apprentices to repeat the desired practical work. The video with audio on the Unit of Competency Page allows apprentices to practice outside of class time. The Assignment page provides example assignments as video assignment ideas and table text that can be downloaded for printing. Next, in the Assessment section, there are 2 buttons, namely the Final Knowledge Assessment button, where the apprentice must answer the final assessment by pressing the provided link and taking it to the google form column to allow the apprentice to continue answering according to the instructions, and the Quiz Game button, which to test the apprentice's knowledge level.

M-Classy-Art Reliability

In order to obtain the reliability of M-Classy-Art, a pilot study was conducted to determine the elements to be integrated in the fashion design illustration learning module. A total of 30 apprentices have been selected as a pilot study and the apprentices must be trained in the fashion design illustration competency unit. The reliability and validity of the questionnaire used must be tested first in a pilot study to reduce errors in the actual study (Yunus et al., 2016). Questionnaire is a method of collecting data from respondents' responses to written questions prepared by the researcher (Shariff, 2017). The researcher needs to ensure that the respondents can follow each activity and understand the objectives in the module.

Reliability Results

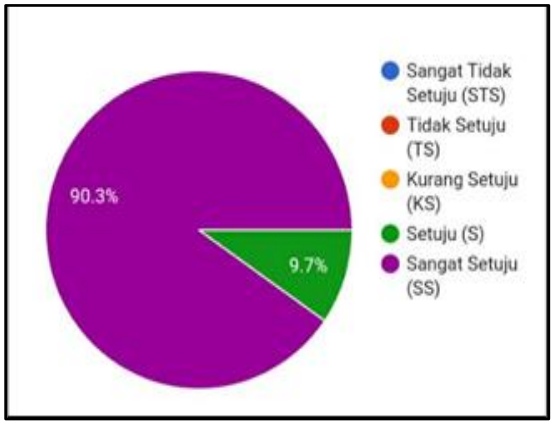

Figure 2: Showing the percentage of reliability of M-Classy-Art which is 90.3% strongly agree and 9.7% agree that the work steps organized in the form of video, audio and text make it easier for apprentices to follow practical and theoretical work. This helps the apprentice's self-learning of the fashion design illustration competency unit.

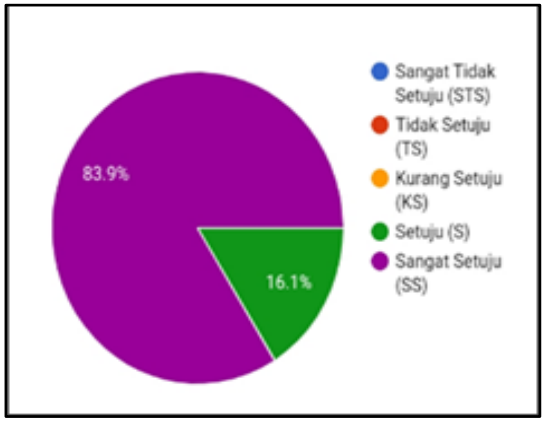

Figure 3: Shows the percentage of reliability of M-Classy-Art to the audio elements in the form of music that is interesting and comfortable to listen to after the apprentice tries to use the M-Classy-Art prototype. 83.9% strongly agree and 16.1% agree. This shows that the percentage of very agreeable is high for the audio elements in the form of music.

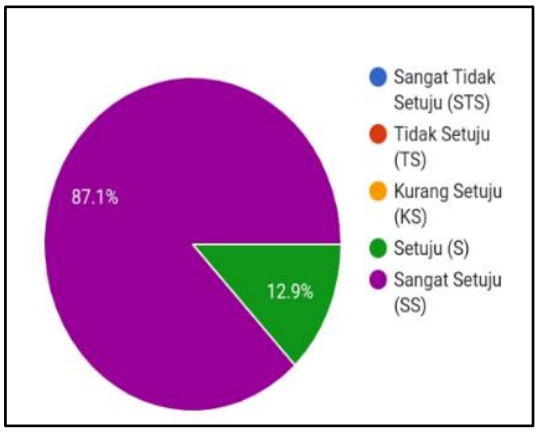

Figure 4: Showing the percentage of M-Classy-Art's reliability on the size of the writing as a text element used is clearly readable after the apprentice tried using the M-Classy-Art prototype. 87.1% strongly agree and 12.9% agree. This shows that the percentage of strong agreement is high that the text elements used are appropriate.

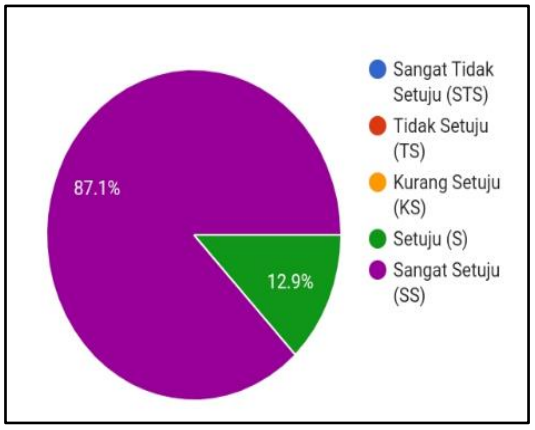

Figure 5: Showing the percentage of reliability of M-Classy-Art towards the multimedia elements in the form of animations that are used are creative for learning after apprentices try using the M-Classy-Art prototype. 87.1% strongly agree and 12.9% agree. This shows that the percentage of very agreeable is high about the animation elements used.

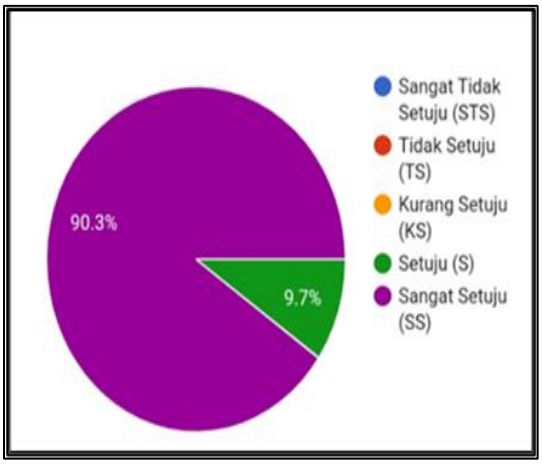

Figure 6: Shows the percentage of M-Classy-Art's reliability in support of elements such as text, video, audio, graphics and animation help facilitate the way apprentices go through training. The pie chart shows the combination of multimedia elements applied through M-Classy-Art evaluated by the respondents (n=30) consisting of apprentices at the NDTS training center. Five combinations of multimedia elements such as text, video, audio, graphics and animation in M-Classy-Art are accepted by apprentices. A percentage of 90.3% voiced the option strongly agree and 9.7% agree. This proves that the multimedia elements have supported the reliability of M-Classy-Art because the multimedia elements applied result in conveniences for apprentices to undergo training.

Conclusion

The development of a mobile learning module with a multimedia concept requires a module developer to make a more organized and systematic plan before implementation. Therefore, all the objectives, problems, scope and constraints of the study are identified in advance to determine the reliability of a module. Overall, this pilot study has already achieved its objective and answered the research question where it fulfills the scope that has been outlined. The M-Classy-Art module with a multimedia concept in the form of a website has been produced as best as practically possible based on study design models, strategies and relevant learning theories. Therefore, it is hoped that the M-Classy-Art learning module

developed can benefit every user. Accessing via mobile will facilitate learning, be used as a reference material and as alternative skill training system. This learning support material will indirectly facilitate the apprentice to understand the concept of designing fashion design illustrations effectively. Overall, this pilot study has successfully achieved its objectives and fulfilled the research questions that have been presented. The M-Classy-Art learning module developed is satisfactory yet continuous improvements is needed to be made.

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