

# Integration of Interactive Multimedia with Local Potential as a Learning Innovation in Digital Era

Mochamad Kamil Budiarto<sup>1</sup>, Hermanu Joebagio<sup>2</sup>, Sudiyanto<sup>3</sup>

<sup>1,2,3</sup> Master Program of Educational Technology, Faculty of Teacher Training and Education Sebelas Maret University

<sup>1</sup> kamiltp@student.uns.ac.id, <sup>2</sup> hermanu.joebagio@gmail.com, <sup>3</sup> soeddie.fkipuns@gmail.com

**Abstract:** Technological progress has had an impact on various fields of life, such as the field of education. The learning process is one of the systems that is influenced by digital technology, ongoing learning has been combined with the presence of innovative digital learning media. With the combination of technological advancements and learning systems, it is expected to have an impact on upgrading the quality of education. Reflections on improving the education's quality can be seen based on the competencies of students who have gone through a series of educational processes. Craft and Entrepreneurship are subjects that have just been applied to the implementation of the 2013 curriculum. The government has prepared a 2013 curriculum to equip students with the competencies needed in the era of digital technology. The development and utilization of technology on those learning processes will be able to assist students in understanding the material presented so that it is expected to produce students with competencies who are able to compete in the era of technology digital. Multimedia learning is one alternative computer-based that can be used by teachers to ease learning activities. The research method used in this article is a literature review, namely by finding and analyzing sources that are relevant to the object of this study.

**Keywords:** *multimedia learning, craft learning and entrepreneurship, innovative digital learning media*

## Introduction

Technological development is developing so fast that it influences the behavior of human life. Changes brought about by advances in digital technology actually have some influence in the lives of individuals, (Setiawan, 2017) revealed that technology can be utilized as well as possible to support life as well as being a new challenge that must be watched out for.

Technological advances have caused some of the needs for competencies and skills needed to change, now young entrepreneurs are starting to emerge business platform like *startup* that can take advantage of the benefits in this current situation, besides that the loss of several types of jobs that cause opportunities to find work to become increasingly competitive. With the competitive level of individuals that seeking employment opportunities, technological era advances has several choices in playing a role in society. The choice meant is the choice to become an entrepreneur or just keep working with the needs of new competencies so that it can be an answer to the challenges in the era of digital technology.

Learning on it's implementation is an activity that must be well designed and managed. Learning is a concept of two activities namely learning and teaching which must be designed, implemented and managed so that the goals or competencies that have been set can be achieved (Supriadie, 2012), so education must be able to prepare superior generations through the implementation of quality learning. Teachers are required to utilize or combine technology in order to provide useful competencies and skills to answer challenges in the digital technology era. The existence of technology in learning situation will be able to establish a dynamic learning condition without knowing time limit.

In the field of education, Indonesia is still lagging behind neighboring countries in ASEAN, based on data compiled from the Education Index and issued by the Human Development Reports, in 2017, Indonesia ranks seventh in ASEAN with a score of 0.622. The highest score was achieved by Singapore, which was 0.832. The second rank is occupied by Malaysia (0,719) and followed by Brunei Darussalam (0,704). In the fourth position, there are Thailand and the Philippines, both of which have a score of 0.661 (quoted from <https://tirto.id/>). The rating reflects that the quality of education in Indonesia still needs to be improved and identified the causes of stagnation in the growth of human resources resulting from the implementation of education nationally. The presence of digital technology in learning activities is expected to become one of opportunities to upgrade overall education quality. This digitalization could break the rigidity in learning and learner's context, the major advantage in the digital era is that students playing a role as a center subject in instructional processes. Digitalization facilitated a 'flexible approach' in learning, now on, the student wants to learn anywhere, anytime, at his own speed, through his own ways and styles and also at his own terms or condition (Singh, 2016).

Teachers as one of the components in the implementation of education, especially learning, so she or he should be able to improve competence that can deal with the education in the digital age, so as to create an innovative and quality learning conditions, teachers must be able to use the latest learning aids as innovations in the implementation of learning activities (H. Iksan & Mohd Saufian, 2017). This is because, currently teachers are facing the accustomed students that are already familiar with the use of technology, so the use of technology in the learning process is one of the factors that teachers need to pay attention to. It is believed that ICT can help the Indonesian government for achieving its goals. With Computer Assisted Instruction (CAI) can make an educational method more innovative, CAI could be presenting subject material to students with different forms of interactive and instructional media. Unlike traditional large group instruction, CAI allows individual students to experience content that is consistently appropriate for their pace of learning and provides meaningful feedback (Oludare Jethro, Moradeke Grace, & Kolawole Thomas, 2012)

Technology integration in learning process will certainly encourage teachers to always innovate and make efforts to take advantage of the technology integration process. One of the subjects taught at high school (SMA) is Craft and Entrepreneurship (PKWU). This subject has been developed since the implementation of the 2013 curriculum. The 2013 curriculum is expected to be a foundation and orientation for teachers to create a better learning process and a quality of learning. Craft and Entrepreneurship subjects are designed to equip individuals or students can find, create, redesign and develop craft products in the form of engineering, cultivation, cultivation, and processing through a series of activities that must be carried out (Wati, 2018).

The subject of craft and entrepreneurship aims to foster student entrepreneurial spirit through a series of learning processes that aimed on the creation of works (production), and efforts to sell them (Fardila, Subekti, & Setiawati, 2015). However, conditions as the purpose of the subject are not in accordance with the facts in the field, the learning process is still directed at the cognitive abilities of students so can students do the test questions and has not been emphasized in the students' psychomotor skills that able to create a work and attempt to sell the product.

So it needs innovation in the implementation of learning in accordance with technological progress so that the material delivered in the learning process can be represented as a whole. Multimedia Learning is a presentation of material using words together with the use of pictures.

The words are presented in a verbal form that is using commonly spoken text, then images are material that is presented in the form of pictorial forms such as graphics, photos, animations, and videos (Mayer. E, 2009).

Multimedia learning has a huge potential to be applied in the learning process this is indicated by the study that multimedia is one of the media that plays a role in instilling character values in students (Suyantiningsih, Munawaroh, & Rahmadona, 2016). Computer availability and use of computers in learning process make multimedia very suitable to be applied, considering the important thing of combining a digital technology to create dynamic and better learning conditions. According to (Malik & Agarwal, 2012) revealed that multimedia is a very powerful tool to be able to support student learning activities with the flexibility of multimedia that can be used in various fields or other subjects on learning processes.

Based on the series of descriptions above, multimedia is one of the alternative learning media in the era of technological advancements as it is today, bearing in mind that some research results show that multimedia has the potential to support the learning process, the integration of crafts and entrepreneurship subjects with multimedia technology is needed to equip competences of being a young entrepreneur who is able to create opportunities through using local potential or the surrounding environment in students' lives.

## **Method**

This research will explore several relevant studies relating to the development of multimedia learning for the learning process. The method used in this research is literature study method. Literature study is the activity of collecting data through analysis of books, research articles, research reports and documents relating to the problem to be solved (Nazir, 2013). Literature sources that will be used in this study are sourced from scientific articles published in national, international research journals and articles published in national and international proceedings. The data that has been collected is then analyzed based on theories that support it so that it can be concluded to be a descriptive research result.

## **Results and Discussion**

Based on the results of a review of some of the results of research and literature sourced from research articles that have been published in journals in recent years. The following describes the development of instructional multimedia that is integrated with local potential. The results of the analysis of relevant research studies begin with; a) multimedia learning, b) local potential, c) the importance of developing multimedia based on local potential for subjects and entrepreneurship.

### ***Multimedia (Interactive) Learning***

There is a common belief that the use of ICTs in education, it was needed to build skills and contribute to more constructivist learning, it is also needed because it can increase activity and also increase greater responsibility of students (Mikre, 2011; Nurjanah, Suryadi, Sabanda, & Darhim, 2014). Multimedia is a medium that is composed of a combination of two or more elements which include text, graphics, video or animation into a single unit (Ziden & Abdul Rahman, 2013). Mayer (Mayer. E, 2009) states that multimedia as a presentation of material using words together with the use of images. The words are presented in a verbal form that is using commonly spoken text, then pictures are material that is presented in the form of pictorial

forms such as graphics, photos, animations, and videos. Multimedia can be interpreted as a combination of two or more components that attached to a learning media.

The characteristics of multimedia that makes multimedia have its own features, this is indicated that multimedia being able to provide an interactive process and providing ease of feedback, multimedia providing freedom and convenience for students to choose learning topics with systematic control (Munir, 2010: 235). The use of technology in the classroom allows students to have competence regarding a particular technology, then in the learning process that is supported by the use of technology will bring about the independence of student learning because the learning process remains student-centered (Sert & Boynueğri, 2017). Interactive multimedia used in the learning process will be able to attract the attention of students so that students will focus on implementing learning activities. Role of the teacher in supporting, advising, and coaching of students becoming less than transmitting knowledge, so this why advancement and innovations of technology such as multimedia interactive in the educational filed can make a visible impact on academic development (Raval, 2014).

Multimedia computer-based learning has become one of the breakthroughs in developing digital teaching materials, to support the delivery of material by teachers. (Neo & Neo, 2010) has found on his research of multimedia learning and the results of the study shown that by setting an authentic task, by a multimedia project, into a constructivist learning environment, students became highly motivated on learning processes and get more active in their learning process, by using multimedia interactive also provided strong support and encouragement for educators to incorporate multimedia technology and constructivist learning.

The use of multimedia learning that includes animation, games as one of the learning media is proven to increase students' interest and desires in learning so that the learning process becomes more efficient (Sun in Saputri, Rukayah, & Indriayu, 2018). The development of learning multimedia can make students easier to carry out learning activities because multimedia interactive has a presentation format in accordance with the characteristics of the material. As declared by Wawan Sudatha & Made Tegeh (2009) that learning multimedia has 4 different formats, tutorial, drill and practice, simulation and games. Therefore multimedia learning becomes one type of interactive learning media and is decent to support learning activities.

As explained above, learning multimedia has become an important part in supporting the learning process in the digital age. With the complexity of the components inherent in multimedia, it makes learning media that will be able to create a meaningful, effective and efficient learning process. It is important for teachers in the current era of digital technology to have competence in creating or utilizing ICT in the field of education through the use of interactive multimedia in the learning process that takes place in schools.

### ***Local Potential***

Local potential is a resource that is in a particular area and can be used as a form of integration between potentials that can be developed in an area with a topic in a particular subject so that it can provide real learning experiences for students (Mumpuni, Susilo, & Rohman, 2014). Local potential is one alternative for the development of subject matter by the teacher so that the learning process becomes more contextual. Contextual learning or Contextual Teaching and Learning (CTL) is learning process that stressed on the relationship between learning material and the environment that exists in the lives of students so that learning material will become easier for students to understand (Jhonson, 2008: 65). The combination of

subject matter that is associated with the local potential that exists in the environment of students will be one of the right innovations when it has started many students who forget about useful things in the surrounding environment.

Research conducted by (Ibrohim, 2015) by utilizing the potential of the environment for the development of natural science/biology learning tools can improve the effectiveness of biological science learning in schools. Another study was also carried out by (Agustin, Wahyuni, & Bachtiar, 2018) who developed a physics module based on the local potential for high school students. From the results of the study it was said that the local potential based physics module was categorized as feasible to be developed and students made it easier to understand the material that was presented through the module, this is proven in the study produced as much as 50% of students become easier to associate the concept of subjects with everyday life.

Based on the description of the local potential approach in an effort to create contextual and innovative teaching material and can be applied in a variety of subjects provided there is an analytical result related to the relationship between subject matter with local potential held in a particular area where the student or school is located.

### ***The Importance of Multimedia Based on Local Potential Craft and Entrepreneurship Learning Subject in Senior High School***

One of the major challenge of this era of digitization in context of learner and learning is to ensure promotion of 21st Century Skills or New Forms of Skills in learners that includes digital literacy and basic skills of ICT (Singh, 2016). Using ICT in learning processes can make students having a competency and skills that 21st Century needs. On the subject of crafts and entrepreneurship, is the one of the new subjects found in the 2013 curriculum. These subjects are obtained by sending students without exception. One of the competencies developed in this subject is the ability to modify, develop material to create an existing or new work so as to create an innovative product.

Based on Permendikbud No. 59 of 2014 concerning the 2013 High School / Madrasah Aliyah curriculum in Appendix 3 PMP of Crafts and Entrepreneurship (in Wati, 2018) The material of craftsmanship and entrepreneurship consists of four aspects namely engineering, crafts, cultivation, and processing.

#### 1. Crafts

The craft can be associated with the work of the hand that produces a Sunda object that meets the demands of vision and objects that have functional value. The scope of material that can be delivered can be sourced from local potential and applied arts, as well as contemporary design (modernism)

#### 2. Engineering

Engineering is closely related to several abilities possessed by individuals, namely: designing, reconstructing and making an object that can be utilized in everyday life.

#### 3. Cultivation

Cultivation consists of cultivating plants and animals whose scope of the material consists of the process of breeding, planting, harvesting, storing and packaging in order to distribute the marketing process of cultivated products. One of the educational benefits of cultivation technology is that it can foster a systematic way of thinking based on the potential of local wisdom.

#### 4. Processing

A processor of the transformation process (deformation) from raw materials to processed products. The processing process also includes handling and preserving

materials. The educational benefits of food processing technology for the development of learners' personalities are increasing food diversity, providing economic value and arising awareness of the importance of handling, processing and preserving food.

Some factors that can affect one's entrepreneurial interest according to (Alma, 2011) there are, 1) aspects - aspects that are inherent in a person's personality, 2) sociological factors that are related to family relationships, whether among his family is an entrepreneur or have a vision of being an entrepreneur, and 3) Linking, namely the relationship with the environment of an individual being. Some of these things make craft and entrepreneurship subjects so important that they can provide an overview or knowledge of the individual entrepreneurship process. The purpose of this "Craft and Entrepreneurship" learning is to foster entrepreneurial attitudes found in students through a series of work creation activities and the distribution process of selling products or works that have been created.

Based on the objectives of this subject, it is necessary to emphasize by educators that the learning process in craft and entrepreneurship subjects is not only aimed at mastering skills and cognitive abilities but it is expected that students have the motivation, the desire to be able to become entrepreneurs. Entrepreneurial motivation is obtained by students when the learning process takes place, through a series of learning activities that are related to the environment around students, so that it will be able to make it easy for students to identify potentials that can be used as objects for entrepreneurship.

There have been many studies that prove the use of multimedia in learning can overcome several problems. The following are some relevant studies regarding the development and use of multimedia in various disciplines or subjects. Interactive multimedia programs that run on computers will make the learning process more innovative, as revealed by (Shamir, Yoder, Pocklington, & Feehan, 2019) they found that at a young age, minority students and those from lower SES families were positively impacted on their academic performance, improving their learning beyond the immediate use of the software. Multimedia learning is also able to present an event in the form of visualization that allows students to see visually from the subject matter.

One study provided first and second-grade low socioeconomic status (SES) students with supplemental CAI such as a multimedia interactive program that compared their assessment scores to those of a control group who only received traditional reading instruction (Schechter, Macaruso, Kazakoff, & Brooke, 2015). Computer-Based Interactive Multimedia Instruction that will be developed is a learning program that formed more than one media such as texts, pictures, sounds, animation, and interaction that is bundled as a computer software (learning CD) which is containing a learning material such as: title, aim of study, subject material, and evaluation (Nurjanah et al., 2014).

The use of learning media with this type of learning multimedia can make it easy for students to participate in learning activities, this is because learning multimedia can be used by students both independently and in classical learning in the classroom. As research conducted by Guo & Jia, (2016) which states that multimedia can increase student interest in learning and be able to improve students' listening abilities, and according to the study learning by utilizing multimedia is claimed to be better than conventional learning. In the digital era, learning has become an active and constructive process rather than a passive and reproductive process. Learning objectives focus today is on 'knowledge creation' than on 'knowledge acquisition' and learning is more than just 'data-transfer', substantial and concrete.

By doing the learning process, teachers need to be able to deliver subject matter that is supported by the use of instructional media, one of the learning media that has characteristics and benefits in order to attract attention and facilitate student learning in multimedia learning,

this is because multimedia has an interactive nature, which is able to improve students' understanding of the material being studied, this is because in multimedia learning students are invited to involve themselves through activities that are auditive, visual, and kinetic and can improve student motivation to learn (Munadi, 2013). Besides that, the students of today are experiential learners, and current schooling practices are adapting to relate to this generation's interest in multimedia instruction such as a game-based learning (Bittman, Rutherford, Brown, & Unsworth, 2011).

Students consider that the need for integration between the subject matter delivered by the teacher with the potential that is in the environment around the school, this is indicated by 84.88% who consider that the importance of learning the potential and local wisdom in learning (Jayanti, Susilo, & Suarsini, 2017). Based on research conducted by (Nurwahidah, 2017) it was mentioned in the study that local potential is one approach that can be utilized in the implementation of learning, so that individuals who study or students can more easily understand learning material. other research on the use of the local potential that is packaged in the form of learning media continues to be carried out in order to create an innovative, dynamic and contextual learning conditions. Like the research conducted by (Fitria, Mustami, & Taufiq, 2017) who succeeded in developing media images for learning based on local potential with categories suitable for use in learning activities, in addition to the products developed can also affect student learning outcomes. Other research also revealed that the local potential that is packaged in the form of learning media like atlases for biology subjects can improve student learning outcomes, the researcher suggests to update the form of atlases into other media formats that are suitable to the students need's and technological advancements so it can be improved the quality of learning in school (Kusuma, Rohman, & Syamsuri, 2018)

According to (Keengwe & Georgina, 2013) that the way to teach students about the digital world can be started by integrating technology in teaching and learning activities as students' interests. So that a visualization of material related to local potential will be able to make it easy for students to master the concept of problem-solving presented in learning activities and the material to be packaged in the form of instructional multimedia will make the learning multimedia more effective for the achievement of learning objectives and able to create an innovative and dynamic learning environment.

As explained above, crafts and entrepreneurship are among the subjects that encourage students to be able to entrepreneurship but do not rule out the mastery of the concepts provided during learning activities. It said that Multimedia has very broad benefits, by utilizing multimedia during the learning process will be able to create effective and efficient situations so that learning objectives can be achieved. Therefore, schools should continue to make improvements to learning through innovative models, methods and learning media used during the learning process. Through the local potential approach which is then integrated with technology, namely interactive multimedia programs, it is expected that all the advantages that exist in both local and multimedia potential will have an impact on the mastery of concepts, student motivation in the learning process of craft and entrepreneurship so that the objectives as contained in those subjects will can be achieved, one of which is able to motivate students to doing an entrepreneurship activity through the use of local potential that exists in certain regions. Finally, the use of multimedia is very necessary in the learning process, especially for craftsmanship and entrepreneurship subjects in order to achieve learning objectives and have the competencies needed in the 21st century, namely entrepreneurial competence.

## Conclusion

Multimedia learning that is utilized in the learning process will be able to have a positive impact on the integration of digital technology in learning activities. Besides the learning process by using multimedia learning will be able to increase student motivation, this is because some of the characteristics and principles inherent in multimedia learning enable students to be interactive, independent, clear visualization of material and can be applied to any field or subject with notes in accordance with the analysis of needs, especially on learning material that must be adapted to the learning objectives and the format attached to the learning multimedia.

As discussed above, there is one innovative solution that can be followed up, namely the further development of learning media related to contextual craft subjects by linking subject matter with the potential of the surrounding environment (local potential) so that the learning process will become more motivating, interesting attention and facilitate students in understanding the material being taught. The integration of multimedia learning (computer-based) combined with lesson material accompanied by local content or potential is a reflection of creative and innovative learning in the era of digital technology.

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