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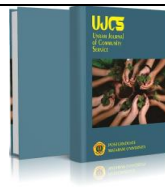

Engaging Students with Innovative Teaching Methods through Digital Media at SMK Cut NYADIEN School Semarang

Rana Sharjeel Akhtar[1]*, Jarot Tri Bowo Santoso[1]

[1] Economics Education, Universitas Negeri Semarang, Semarang, Indonesia.

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Corresponding Author:
Rana Sharjeel Akhtar
ranasharjeelakhtar@students.unnes.ac.id

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Abstract: This study discovers the efficiency of innovative teaching methods combined with digital media to engage students at SMK Cut Nyadien School Semarang. By leveraging digital tools such as Microsoft applications, YouTube, Google, and Artificial Intelligence (AI), this research estimates how these resources impact student teamwork, innovation, and overall engagements. The study employs a pre-test post-test design with a sample of 28 students. Statistical tests, including normality tests, homogeneity tests, and paired sample t-tests, were shown to evaluate the significance of the interference. The results shows that digital media significantly enhanced student collaboration and innovation scores. Moreover, platforms like YouTube and Google were essential in providing resources for self-directed learning, while AI technologies supported personalized learning experiences. Group studies, study trips, and problem-solving activities additionally contributing to an improved learning environment. These results advocate that digital media and related technologies can significantly improve student engagement and learning results in vocational education.

Keywords: Innovation; Teaching methods; digital media; Vocational Education; AI Technologies.

Introduction

Interactive learning media helps students to knowledge the idea which makes them involve with it and gives them the possibility to plan a deeper understanding by submerging themselves in the learning material itself (Aulia et al., 2024) . Engaging with a teacher and other students in a classroom is started with the aim of providing actual learning as a simultaneous condition rises. Using the specific aspect, it is always centered on the pupils' comprehension, integration, and articulation of L.E. In this framework of the information age and globalization, the improvement of educational quality, as well as information and communication technology, is very important (Mukhadik et al., 2023). The judgement of the Director General about Vocational Education Ditjen Diksi, there are five features to which human resources need to be equipped in order to manage with the challenges of the digital stage. These are Internet of Things, artificial intelligence (AI), also human-machine interface, sensor technology and robotics, and the main thing is 3D printing technology (Elmunsyah et al., 2024). The teaching programs is effort to use background tasks, collective learning, the development of computational thinking, and programming task. These policies are linked to active teaching and learning plans and can be used and organized to foster not only the involvement of learners but also for encouragement of deep learning (Hutagalung, 2021). One of the appropriate means for this is to utilizing computer-based digital media, together with technologically advancement and many digital media in the teaching-learning process have been developed and it can also be completed through digital

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media. Digital media can be utilized to provide the learning material in a more contextual, audio and visual interesting and interactive manners (Purnamasari et al., 2020).

The innovation offered in this PKM activity is the interactive video-based e-learning. The material in the interactive videos is visually present and encourage to students to actively participates with content in the interactive video class, after which there will be thoughtful questions, reproductions, or problem-solving activities (Irwan, 2024). The descriptions of digital learning include and use of the most modern resources that combine technology, digital resources and teaching to inspire students with a view to advancement the learning process. Digital media technologies, including satellites, internet websites, microphones, multimedia including podcast facilities, audio and also video will enhance the effectiveness of the teaching and learning process (Bakar & Khalid, 2021). The goals of education is not just for students to understand the lessons and read the book only, but also furthermore it joins the aim of teaching the students an understanding of the study material, delivering a textbook is also inspiring the self-sufficiency, creativity and even innovation (Kalyani & Rajasekaran, 2018).

Cooperation between vocational high schools and industries is vital for actual implementation of the Merdeka Belajar curriculum. These partnerships allow the development of vocational education programs that are applicable to the job market and also give students an opportunity to practice, and improvement their probabilities of getting jobs in the long run by training them in readiness for ease of entry into the job marketplace (Ahmad et al., 2024). The utilization of digital media in IRE is of great importance as it helps to raise students' interest and inspiration, increase their knowledge, as well as the quality of the process of learning and the results (Kharismatunisa, 2023).

An important quality of a teacher should have is the command of all forms of learning approaches. This implies that the teacher is not only expected to hold the content area and he is teaching but also have knowledge on how to undertake the delivery of learning material to the learners. Such innovative learning models can also improve professionalism for teachers on a lasting basis (Baskoro et al., 2021). A number of learning management systems or e-learning platforms were established in this manner by the professors so that their students are able to have easy access to plenty of resources and tasks and how students may use these platforms. Students may use these platforms from the comfort zone of their homes as well (Iqbal et al., 2021). If there is a need to boost students' reading abilities, then there are any explanation factor should be the text which inspires both wider range of reading skills and higher order thinking skills development as well (Atiullah et al., 2019). The chiefs of technology have always been able to contribute important meaningfully only through the development of learning processes (Resmanti et al., 2024). The educator assesses the attitude of tolerance with respect to PPK learning at Elementary Schools in the framework of technological advances by developing Android as an application which aids in the growth of attitudinal assessment instruments (Triyono et al., 2019). We can see high learning motivation in learners' behaviors during the learning activities. Such behaviors include active review, providing opinions, summarizing, note taking and writing resumes, practicing, doing exercises and also evaluations when requested, studying, listening to lectures as predictable, and responsibility class work. On the other hand, if a student is not interested to learn or is finishing the learning unwell completed tasks, this probably leads to low motivation and less time consumed on the studying (Nugroho).

Engaging in the information superhighway through its many facets, in most cases, information is encoded in a variety of forms, and is retrieved in a variety of ways. Who speculated that 'students may use higher-order thinking skills when they use technology' the meaning of these two statements is well captured by the envisioning of learning processes through the application of technology is able to connect up and create active responses in the learning process. This will make the students use their both intellectual and emotional intelligence to the multimedia (Teoh & Neo, 2006).

Method

This study was designed to look at how effective innovative teaching methods were integrated with digital media in increasing student engagement at SMK Cut Nyadien School Semarang. This was an experimental research design with pre-test and post-test without control (intervention using teaching methods based on digital media). A battery of statistical tests, including tests of normality, homogeneity of variance, and hypothesis testing number of tests examines the effect of the involvement. The sample was questionnaire form and do Interview and observation how many students are using Digital media things of students SMK Cut Nyadien school in the city of Semarang. The contributors were separated into two groups: an experimental group, who received the new teaching method using digital media, and a control group, who continued with traditional teaching methods. Both the pre-test and post-test assessments regarding engagements and innovation were filled by all responders.

Result and Discussion

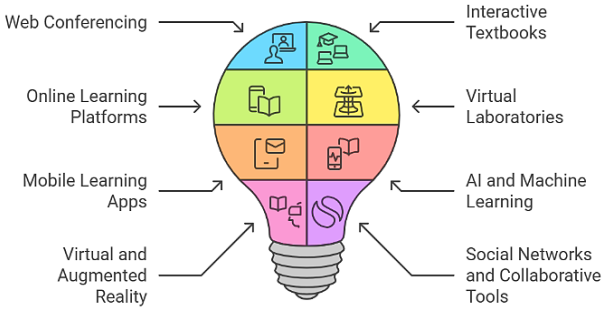

Figure 1. Echancing Education with Technology

Table 1. Normality Test

	Shapiro-Wilk		
	Statistic	df	Sig.
Pretest Media Digital	.933	28	.075
Postest Media Digital	.906	28	.109
Pretest Inovasi	.866	28	.234
Postest Inovasi	.971	28	.611

Note: Digital MEDIA pre-test data is declared to have a normal distribution of 0.075 > 0.05, while digital media post-test data is declared to be normally distributed because > 0.05 seen in the table of 0109 > 0.05. So, the pre-test score is superior or higher than the digital media post-test score. Furthermore, the pre-test and post-test innovation data stated that the post-test value was higher at 0.611 > 0.05 while the pre-test value was lower at 0.234 > 0.05. The normality test successfully met the requirements that the data had a normal distribution and was accepted.

Table 2. Collaboration Pretest_Postest Homogenity Test

		Sig.
Pretest_Postest Inovasi	Based on Mean	.445
	Based on Median	.602
	Based on Median and with adjusted df	.603
	Based on trimmed mean	.438

Note: Collaboration data is declared homogeneous or has a variance of sig 0.97 > 0.05

Table 3. Paired Samples Test

		Sig. (2-tailed)
Pair 1	Pretest Media Digital - Postest Digital	.004
Pair 2	Pretest Inovasi - Postest Inovasi	.008

Note: Hypothesis test data is stated to have an effect on the pre-test and post-test scores on collaboration scores, seen in the calculated t table of 4.384 while the t table is 1.7011 so that the calculated t value > t table or 4.384 > 1.7011. If we look at the significant value of sig 0.004 < 0.05, it is declared a significant value.

The hypothesis test data is stated to have an effect on the pre-test and post-test scores on the INOVASI scores, seen in the calculated t table of 1.834 while the t table is 1.7011 so that the calculated t value > t table or 1.834 > 1.7011. If we look at the significant value of sig 0.008 < 0.05, it is declared a significant value is less than 0.008 < 0.05.

The results of this study recommend that digital media can play a significant role in improving both collaboration and innovation among students at SMK Cut Nyadien School Semarang. The normality tests confirmed that the both of pre-test and post-test data are collaboration and innovation were normally distributed, agreeing for the usage of parametric tests. The homogeneity tests showed that the alterations in both collaboration and innovation scores were reliable between the pre-test and post-test, making the hypothesis testing valid. The results suggesting that the digital media-based teaching methods effectively enhanced student engagement. These findings are reliable with earlier research that highlighting the benefits of using technology to adoptive interactive learning environments and improving student consequences.

The addition of digital media into the teaching methods at SMK Cut Nyadien School Semarang has significantly improved student engagement, collaboration, and innovation (Fajra & Novalinda, 2020). Learning Applications like Microsoft students' collaborations, PowerPoint for presentations simplified the communication and teamwork, while YouTube and Google provided easy access to vast learning resources, fostering self-directions learning and deeper understanding (SITOHANG, 2021). Artificial Intelligence (AI) plays a key role by offering Individualizing learning experiences, helping students tailor their education to personal needs. Social media platforms also contribute to increases the interaction and enabling students to share ideas and collaboration outside of the classroom (Hendradi et al., 2022). Furthermore, the study trips and group studies augmented the learning experience by agreeing students to apply theoretical knowledge in real-world life and solve problems together. These innovative teaching methods not only improved collaboration and innovation scores but also prepared students for future challenges by encouraging critical thinking, problem-solving, and creativity, highlighting the substantial benefits of digital media integration in education (Putri & Kismiyati, 2024).

Conclusion

This study proves the efficiency of innovative teaching methods using digital media in refining

student engagement, collaboration, and innovation at SMK Cut Nyadien School Semarang. The statistical analysis, including's like normality tests, homogeneity tests, and paired sample t-tests, confirm that digital media is significant and the positive impact on the students' collaboration and innovation scores. The integration of digital tools such as Microsoft applications, AI, YouTube, Google, and social media platforms boosted both individual and group learning experiences. By easing personalized learning, promoting collaboration and problem-solving, and providing access to varied educational resources, these tools significantly improved the educational process. The Joining study trips and group studies further supported the knowledge environment, contribution student's real-world experiences and opportunities to apply their knowledge in practical life. These results suggest that the sustained addition of digital media, coupled with collaborative learning achieves, can significantly improve student assignation and learning consequences.

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