

The Use of Digital Economy Learning Media in the VUCA Era: A Literature Review

Efni Cerya¹, Reza Nur Wahid², Yuriza Maulidina³, Abna Hildayati⁴

¹²³⁴ Universitas Negeri Padang, Padang, Indonesia,

*Corresponding author. Email: ✉ efnicerya@fe.unp.ac.id

ABSTRACT

Facing the VUCA era, a generation that is capable of analytical, critical and innovative thinking is needed. For this reason, this study aims to answer the challenges of the era of economic learning media for the digital era in the VUCA era. By using the review literature, it can be concluded that android-based interactive learning media that can improve students' analytical, critical and innovative thinking are needed in this VUCA era. For further research, it is expected to be able to make interactive learning media based on android which is equipped with discussion spaces between students and teachers.

Keywords: Digital, learning media, vuca era.

1. INTRODUCTION

The rapidly changing environment and technology have forced organizations, companies, and institutions to prepare for the VUCA Era. VUCA stands for Volatility, Uncertainty, Complexity, and Ambiguity. Volatility means being susceptible to change, Uncertainty is uncertainty or can occur at any time, Complexity is a situation full of complexity, and Ambiguity is a situation that causes confusion. In the VUCA era, industrial and technological advancements play an important role.

The term VUCA was originally introduced by the American military to describe the geo-political situation at that time. The US Army War College introduced the term VUCA to describe geopolitics in Afghanistan and Iraq after the cold war. [1]–[3]. Then this term is used by many corporations to describe the rapid advancement of technology that demands very rapid management changes. The VUCA era depicts situations that lead to uncertainty and are volatile, causing confusion [4].

According to Adamson (2012), VUCA is a way of assessing and providing for changes in general situations and events that are completely unpredictable. The VUCA era greatly influenced various fields of human life, including education [5] Not only companies that have been disrupted by the presence of today's technology. However, if educational institutions do not make immediate modifications and modify their

responsibilities in the world of education, they risk being disrupted [3]. Learning nowadays must be able to adapt to changing circumstances in order to increase educational quality.

Education today faces a combination of its greatest challenges, namely economic uncertainty, accountability, globalization, and new technologies. VUCA is an acronym that effectively reflects the complicated, changing, and dynamic environment in which education operates. Educational institutions should work to improve their ability to adapt and alter new knowledge, information, and change models [6].

Education, being a social process, continues to evolve in response to changing circumstances. A teacher must be able to determine models, methods, tactics, and learning media that are appropriate for the conditions of students and the times when determining the success or failure of the educational process. Today's education incorporates learning and innovative abilities, as well as information skills, media, and technology. The rapid development of technology must be accompanied by the abilities and skills of educators in applying learning media that can be used to respond to technological advances.

According to Gagne, media are various types of components in the learner's environment that can provide stimulation for learning [7]. Media can help convey messages so that they are not verbal and provide opportunities for students to interact directly with

learning resources. Some research finding found that learning media has an influence in increasing learning success in achieving learning objectives. Many educators are now using digital learning material in the execution of the teaching and learning process, one of which is textbooks, which are being phased out in favour of digital products such as e-books.[8].

In addition, many other learning media innovations have been carried out, such as digital comics. The digital comic media used can be a combination of text, images, and learning videos so as to provide audio and visual simulations that will increase students' enthusiasm for learning. The results of previous research indicate that digital comic learning media is very feasible to be used as a learning medium media[9].

Another example of digital learning media is educational games (Economic Quiz). This learning media is packaged on a CD and run on a computer or laptop. This learning media can be used by students to study independently at home so that it can increase students' understanding of the material. The results of the study indicate that the development of educational game-based learning media is feasible and effective to be used as a learning medium [7].

In addition to educational games, other digital learning media can be in the form of digital hand-outs based on Android. This digital hand out is displayed in the form of an android application in which there are multiple-choice questions that can be assessed and if students answer the questions incorrectly, there is feedback in the form of mentioning the material that must be re-studied. The results of the study show that digital hand out learning media can facilitate students' understanding through appropriate media with positive responses and able to improve learning outcomes [10].

2. RESEARCH METHOD

The research method used is literature review or literature study. The method of obtaining library data or research whose study objects are studied through varied library information is referred to as this sort of research. Scientific journals, books, encyclopaedias, newspapers, magazines, and documents that examine or critically review the knowledge, ideas, or findings contained in the literature, academically oriented literature, and formulate its theoretical and methodological contributions to a particular topic are examples. The literature review is prepared by conducting searches related to the research subject [11], [12].

3. THEORETICAL FRAMEWORK

3.1. VUCA Era

VUCA have four dimensions [2], [11] : 1) Volatility can be defined as frequent, rapid, and significant changes whose duration may be unknown. Dynamic, rapid, and

intense change in an environment where the challenges are unpredictable or unstable and may be of unknown duration. 2) Uncertainty is described as the inability to foresee the future. This is a situation in which the events and outcomes are unknown. Lack of predictability in the face of situations and events where the nature of the event is known but its existence or outcome cannot be predicted in advance. 3) Complexity is defined as a condition full of complexity. Complexity is a phenomenon that has many interrelated parts that result in overloaded information networks. Complexity in this case is any combination of problems and organizational chaos, where the situation has many interrelated parts and variables where some information may be available but can also be overwhelming to process. 4) A lack of clarity is defined as ambiguity. Ambiguity is a phenomena or condition that can be interpreted in multiple ways. The blurring of reality and confused meaning of the situation in which the casual relationship is not at all clear and must face the unknown of the unknown is referred to as ambiguity in this case.

3.2. Media

The word "media" is derived from the Latin word "medium," which meaning "intermediary" or "introduction." Media is defined by the Association for Education and Communication Technology (AECT) as all formats employed in the distribution of information. The National Education Association defines media as items that are manipulated, heard, seen, read, or talked about in teaching and learning activities and have an impact on learning effectiveness[12]. According to Gagne, media are components in a student's learning environment that encourage them to learn well.[13].

Learning media, according to Oemar (1986), are tools, methods, and tactics used to improve communication and interaction between teachers and students in the educational and school-teaching process. The term "media" refers to a variety of components in a learner's environment that can be used to stimulate learning [7]. Students can interact directly with learning resources through the use of media, which can help express messages that are not vocal.

Everything that can be utilized to channel messages (teaching materials) in order to excite students' attention, interests, thoughts, and feelings in learning activities in order to attain learning goals is referred to as learning media [15]. Good learning media must meet several criteria, including: the suitability of learning materials, ease of use, and attractiveness to students, so that optimal learning objectives can be achieved. [16].

Sadiman et al. (2000), Depending on the perspective of view, learning media are divided into many categories.

3.2.1. *Based on its nature*

- 1) Audio media, namely media that can only be heard, or media that only has sound such as radio and sound recordings.
- 2) Visual media, namely media that can only be seen, does not contain sound elements. Examples are photos, slide films, transparencies, paintings, drawings and so on.
- 3) Audio-visual media, which is a type of media which in addition to containing sound elements also contains elements of images that can be seen, for example video recordings, various sizes of films, sound slides, and so on.

3.2.2. *Based on the range*

- 1) Media that has a broad and simultaneous reach, such as radio and television. Through this media, students can study actual events simultaneously without having to use a special room
- 2) Media that has limited coverage by space and time, such as slide films, films, videos, and so on.

3.2.3 *Based on the tricks or techniques used*

- 1) Media that can be styled or arranged such as films, slides, film strips, and transparencies. This type of media requires a special projection tool such as a film projector.
- 2) Media that cannot be arranged or arranged such as pictures, photos, paintings, radio, and so on.

3.3. *Economic Learning*

Economics learning is very important in social life because in economics it is studied and discussed about daily activities. The word economy comes from the Greek word *Oikonomia*, which means household management. The origin of the word is *oikos* which means household and *nomos* which means rules, regulations, or laws. Economics deals with all kinds of subjects. In essence, it is aimed at understanding how society allocates its scarce resources [18]. Economics plays a very important role in regulating the principles of the basic needs of society. By studying economics, a person can be trained to be able to manage or manage nominal values properly and wisely.

4. DISCUSSION

4.1. *Development of Economic Learning Media*

Economic learning media continues to develop along with technological advances. The learning media that used to be used by educators was the blackboard. Economic material that requires calculations, educators generally use the blackboard to explain the learning material to be delivered, for example, the material on national income and accounting. Learning media continues to develop, such as the use of PowerPoint media. Power point has become a common medium and

is widely used in the teaching and learning process. In addition, PowerPoint is also very easy to publish and can be used as a medium for self-study [13]. Kurniawati (2013) in her research stated that the media used by the accounting subject teacher in class XI IPS SMA Negeri 22 Surabaya is power point and is supported by the use of whiteboards, media cards, transaction documents and forms. Similar research also found the use of monopoly games that can be used in learning economics and accounting [15]

Currently, the learning media used in economics learning continues to develop. For example, the learning media used in the basic accounting equation material. There are many developments in learning media that are based on technology. One of them is the Android-based ECCAPY (Educative Accounting Happy) media on trading companies adjusting journal material. Media Eccapy is designed as an innovation that can be used by teachers to encourage students' learning motivation by changing ordinary learning activities to learning activities that use more creative, innovative, and practical ways. [16].

Another economic learning media is Game Book Accounting, which is a learning media used by teachers to understand the subject matter to students through games. Games Book Accounting is a book in which there are a series of interesting games that allow learning to know, learn to understand, learn to follow, and learn to do. With the Games Book Accounting media, it is expected to be able to provide uniqueness in learning so that it is more interesting and able to develop interest, motivation, encouragement, and curiosity of students to always learn and understand the material provided. [17].

4.2. *Advantages and Disadvantages of Digital Learning Media*

Android-based learning media has advantages and disadvantages. The advantages of android-based learning media are: 1) Easy to use, attractive, and simple, 2) Learning can be anywhere, 3) Study offline or not connected to the internet. The weaknesses are as follows: 1) Need an android with high enough specifications so that the learning media program can run smoothly, 2) The product only discusses certain material in one subject.

Meanwhile, learning media in the form of e-books have advantages and disadvantages [18]. The advantages are as follows:

- 1) Easier to find because it can't be separated, or tucked away because it's already stored on a cellphone, tablet, or laptop
- 2) Easy clipping for the required pages, which can be scribbled and annotated.
- 3) The price of e-books is cheaper than regular or conventional books. This is the main reason why people prefer e-books over regular books.

- 4) E-books are more environmentally friendly. By using e-books we have saved paper produced from trees. We also save ink, because e-books require no ink at all.
- 5) The e-book delivery or download system is faster than the conventional book delivery system which takes days.
- 6) Available in many languages, easy to copy or publish.

The disadvantages of e-books are as follows:

- 1) Requires software to open it, such as a computer or other tool
- 2) The eyes are not used to reading on the monitor screen so that it makes the eyes sore and tired
- 3) Not all e-book formats have a good security format
- 4) There is a culture of piracy because all the conveniences make people lazy to buy and use the crack version more
- 5) Rarely read because there are too many files on the hard drive and CD. Due to pile up document so that people become lazy to read it.

4.3. Examples of Digital Economy Learning Media

One of the digital economic learning media that is currently being developed is in the form of digital comics. Rahmatullah et al. (2020) Rahmatullah et al. (2020) in their research, developed digital comics learning media on international economic cooperation material for class XI MIPA class XI SMA Negeri 1 Plampang for the 2019/2020 academic year. The results of this study indicate that the digital comic learning media is very feasible to be used as a learning medium. Digital comics have a good impact on students because the media developed is able to increase the activity and enthusiasm of students in learning economics on international economic cooperation materials.

Several research findings show that there are differences in the effect of using image media on student learning achievement [19]–[22]. If it is seen from the average value of student learning achievement, it can be concluded that students who follow the learning process using digital comic media have better learning achievements than students who use ordinary picture media. Digital comics can help and make it easier for students to understand economic subjects and can increase enthusiasm for learning. This is in line with research conducted by Sukmanasa et al. (2017) that the use of digital comics learning media can increase students' interest in participating in learning.

In addition to digital comics, another example of digital economics learning media is android-based interactive learning media. Wahyono (2019) in his research carried out the development of android-based interactive learning media using a development procedure adopted from a modified 4D model. The development activities carried out resulted in an Android-

based interactive learning media that was valid and suitable to be used for accounting subject matter as an information system and basic accounting equations. Economics learning in classes that use Android-based interactive learning media is more effective than classes that do not use Android-based interactive learning media.

Another digital economy learning media is the use of e-modules. Wijayanti & Ghofur (2021) developed learning media for e-module Bank and Android-Based Payment System for class X. SMA Negeri 1 Gedangan student. The e-module media is an interactive media that can improve students' understanding because students can learn with their own learning styles by using an android smartphone as a learning tool. By using e-module media, students can learn independently and without time limits, meaning that students can study anywhere so that it can have a good impact on Android-based learning. This is in line with the research of Dewi et al. (2018) stated that learning using e-module media has a good level of understanding achievement because the use of e-modules provides learning opportunities according to the speed of each individual, independent, and interesting because it is equipped with exercises. The existence of repetition that students can do independently makes students better understand the material.

5. CONCLUSION

The VUCA era is a situation that leads to uncertainty and is volatile, causing confusion. Advances in industry and technology are things that play an important role. The VUCA era greatly influenced various fields of human life, including education. The rapid development of technology must be accompanied by the abilities and skills of educators in applying learning media that can be used to respond to technological advances in learning media that have an influence in increasing learning success in achieving learning goals.

Media are various types of components in the learner's environment that can provide stimulation for learning. Learning media has an influence in increasing learning success in achieving learning objectives. Currently, we can see that there are many educators who use digital learning media in the implementation of the teaching and learning process, one of which is textbooks that have begun to be replaced with digital products. Economic learning media continues to develop along with technological advances. The learning media that used to be often used was the blackboard. Currently, economic learning media are digitally based, including digital comics, e-modules, to Android-based media containing economic learning materials.

REFERENCES

- [1] S. Stein, "Reimagining global citizenship education for a volatile, uncertain, complex, and ambiguous (VUCA) world," *Glob. Soc. Educ.*, pp. 1–14, 2021.
- [2] C. Potsangbam, "Adaptive Performance in VUCA Era-Where is Research Going," *Int. J. Manag.*, vol. 8, no. 6, pp. 99–108, 2017.
- [3] P. Hendrarso, "Meningkatkan Kualitas Sumber Daya Manusia di Perguruan Tinggi menuju Era VUCA: Studi Fenomenologi Pada Perguruan Tinggi Swasta," in *Prosiding Seminar STIAM*, 2020, vol. 7, no. 2, pp. 1–11.
- [4] H. Aribowo and A. Wirapraja, "Strategi Inovasi Dalam Rangka Menjaga Keberlanjutan Bisnis Dalam Menghadapi Era Volatility, Uncertainty, Compelxity, Dan Ambiguity (Vuca)," *J. Ilmu Manaj. dan Akunt. Terap.*, vol. 9, no. 1, pp. 51–58, 2018.
- [5] A. W. Wahyuni *et al.*, "Sosialisasi Pentingnya Mengasah Kemampuan Berpikir Kritis Bagi Guru Matematika di Era VUCA," *Community Educ. Engagem. J.*, vol. 2, no. 1, pp. 24–29, 2020.
- [6] R. E. Waller, P. A. Lemoine, E. G. Mense, C. J. Garretson, and M. D. Richardson, "Global higher education in a VUCA world: Concerns and projections," *J. Educ. Dev.*, vol. 3, no. 2, p. 73, 2019.
- [7] N. A. Sriwahyuni, "Pengembangan Media Pembelajaran Game Edukasi Pada Mata Pelajaran Ekonomi Kelas X IIS SMA Laboratorium Universitas Negeri Malang," *J. Pendidik. Ekon. (Economic Educ. Journal)*, vol. 9, no. 2, 2016.
- [8] D. Effendi and A. Wahidy, "Pemanfaatan Teknologi dalam Proses Pembelajaran Menuju Pembelajaran Abad 21," in *PROSIDING SEMINAR NASIONAL PROGRAM PASCASARJANA UNIVERSITAS PGRI PALEMBANG*, 2019.
- [9] D. Rahmatullah, E. Suryani, F. Fatmawati, A. Merdekawati, and F. Yahya, "Pengembangan Media Pembelajaran Komik Digital Pada Materi Kerjasama Ekonomi Internasional Mata Pelajaran Ekonomi Kelas Xi MIPA SMA Negeri 1 Plampang Tahun Pelajaran 2019/2020," *Indones. J. Teach. Educ.*, vol. 1, no. 4, pp. 179–186, 2020.
- [10] D. P. A. Pratama and N. C. Sakti, "Pengembangan Media Pembelajaran Handout Digital Berbasis Android," *J. Pendidik. Ekon. Undiksha*, vol. 12, no. 1, pp. 15–28, 2020.
- [11] M. I. Farisi, "Pengembangan Asesmen Diri Siswa (Student Self-Assessment) sebagai Model Penilaian dan Pengembangan Karakter," *Artik. disampaikan pada Konf. Ilm. Nas. "Asesmen dan Pembang. Karakter Bangsa" HEPI UNESA*, 2012.
- [12] N. Syaodih, "Metode penelitian pendidikan," *Bandung PT. Remaja Rosdakarya*, 2009.
- [13] N. Hidayati, "Analisis Penggunaan Media Pembelajaran Pada Mata Pelajaran Ekonomi Materi Akuntansi Kelas Xi Ips Di Sma Negeri 1 Gedangan Sidoarjo," *J. Pendidik. Akunt.*, vol. 1, no. 3, 2013.
- [14] N. Kurniawati, "Analisis Tentang Penggunaan Media Pembelajaran pada Mata Pelajaran Ekonomi Materi Akuntansi Kelas XI IPS Di SMA Negeri 22 Surabaya," *J. Pendidik. Akunt.*, vol. 1, no. 3, 2013.
- [15] E. (Universitas N. P. Cerya, "Penggunaan Media Berbasis Permainan Monopoli dalam Meningkatkan Prestasi Belajar Mahasiswa Pada Mata Kuliah Pengantar Akuntansi 1," *J. Inov. Pendidik. Ekon. ISSN 2302-898X*, vol. 5, No 2, no. Media Pembelajaran, p. Hal 35-45, 2014.
- [16] F. P. Istiqomah and R. I. Aghni, "PENGEMBANGAN MEDIA 'ECCAPY' BERBASIS ANDROID PADA KOMPETENSI DASAR JURNAL PENYESUAIAN PERUSAHAAN DAGANG SEBAGAI UPAYA MENINGKATKAN MOTIVASI BELAJAR," *J. Pendidik. Akunt. Indones.*, vol. 18, no. 2, pp. 62–76, 2020.
- [17] N. Umami and M. I. N. Adha, "Pengembangan Media Pembelajaran Games Book Accounting Untuk Meningkatkan Motivasi Mata Pelajaran Akuntansi Dasar Materi Siklus Akuntansi," *J. Pendidik. Ekon.*, vol. 14, no. 1, pp. 15–24, 2021.
- [18] A. Khairrani, "E-Book sebagai media pembelajaran di masa depan," 2019.
- [19] F. Martin and J. Ertzberger, "Here and now mobile learning: An experimental study on the use of mobile technology," *Comput. Educ.*, vol. 68, pp. 76–85, 2013.
- [20] C. Su and C. Cheng, "A mobile gamification learning system for improving the learning motivation and achievements," *J. Comput. Assist. Learn.*, vol. 31, no. 3, pp. 268–286, 2015.

- [21] T. Mößle, M. Kleimann, F. Rehbein, and C. Pfeiffer, "Media use and school achievement—boys at risk?," *Br. J. Dev. Psychol.*, vol. 28, no. 3, pp. 699–725, 2010.
- [22] F.-R. Kuo, C.-C. Hsu, W.-C. Fang, and N.-S. Chen, "The effects of Embodiment-based TPR approach on student English vocabulary learning achievement, retention and acceptance," *J. King Saud Univ. Inf. Sci.*, vol. 26, no. 1, pp. 63–70, 2014.
- [23] E. Sukmanasa, T. Windiyani, and L. Novita, "Pengembangan Media Pembelajaran Komik Digital Pada Mata Pelajaran Ilmu Pengetahuan Sosial Bagi Siswa Kelas V Sekolah Dasar di Kota Bogor," *JPsD (Jurnal Pendidik. Sekol. Dasar)*, vol. 3, no. 2, pp. 171–185, 2017.
- [24] H. N. Wahyono, "Pengembangan Media Pembelajaran Ekonomi Interaktif Berbasis Android Sebagai Upaya Peningkatan Aktivitas dan Hasil Belajar Siswa," *Gulawentah J. Stud. Sos.*, vol. 4, no. 2, pp. 74–77, 2019.
- [25] K. Wijayanti and M. A. Ghofur, "Pengembangan Media Pembelajaran E-Modul Bank Dan Sistem Pembayaran Berbasis Android Untuk Peserta Didik Kelas X," *J. Pendidik. Ekon.*, vol. 14, no. 1, pp. 1–14, 2021.
- [26] A. S. Dewi, H. Sitompul, and E. Napitupulu, "PENGEMBANGAN E-MODUL PEMBELAJARAN EKONOMI SMA," *J. Teknol. Inf. Komun. DALAM Pendidik.*, vol. 5, no. 2, pp. 111–125, 2018.