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ARCS Learning Model in Offline and Online Learning: A Narrative Literature Review

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Abstract
The Covid-19 pandemic requires the implementation of offline learning to change to online. This condition is a challenge for teachers and students in generating learning motivation when studying online. This narrative literature review aims to empirically compare the ARCS (Attention, Relevance, Confidence, and Satisfaction) learning model with offline learning before the pandemic and online learning during the covid-19 pandemic. This article reviews and compares empirical research on the ARCS model in offline and online learning. The review of this article focuses on: (1) The ARCS model in offline learning before the covid-19 pandemic; (2) The ARCS model in online learning during the covid-19 pandemic and (3) a comparison of ARCS models in offline and online learning. The authors' findings show that the ARCS model consistently improves student motivation, learning outcomes, and activity in both offline and online learning. While other variables that are improved have differences between the ARCS model in offline and online learning, namely offline learning increases participation, collaboration, and persistence. Online learning successfully increases confidence, attention, and academic achievement. The Media used in offline learning places students as the subjects of learning activities, while in online learning the media used places students as actors in learning activities.

INTRODUCTION

The Covid-19 pandemic has attacked all social structures globally. At the beginning of the emergence of the corona virus in 2019, it was estimated that only the economic and health sectors would be affected. But in reality the pandemic situation affects all areas of people's lives, including health, economy, education, government, and others. One area that has been heavily affected by Covid-19 is education. The influence of Covid-19 on educational activities in Indonesia caused learning activities that were initially face-to-face during the pandemic to be carried out online (Crawford et al., 2020). The implementation of online learning is in accordance with the decision of the Minister of Education and Culture, Nadiem Anwar Makarim with the approval of President Joko Widodo by issuing Circular Letter Number 4 of 2020 concerning Implementation of Education during the Covid-19 Pandemic. This decision regulates the implementation of learning during the pandemic to be carried out in limited face-to-face meetings and can be online.This decision is a challenge for educational institutions and teachers. Online learning activities are a challenge in the world of educators (Cao et al., 2020).

The application of online learning is an alternative to implementing Limited Face-to-Face Learning with the help of technology. Utilization of Zoom media, Google Classroom, WhatsApp groups can support online learning. Online distance learning activities are carried out by utilizing electronic devices in line with utilizing the internet, electronic devices, and technology (Lage-Cal et al., 2020). With limited face-to-face meetings, there is a concern that learning activities may become ineffective as students have to learn independently without direct interaction with educators. Online learning facilitates students and teachers during the Covid-19 pandemic because through this platform, students can meet virtually to

acquire information and learning experiences for the development of knowledge and skills. This is an innovative breakthrough in the field of education that has emerged due to the Covid-19 pandemic (Singh & Singh, 2017).

Online learning has several obstacles experienced by both teachers and students regarding the effectiveness of the learning model. A teacher is required to be able to utilize the right learning model to overcome the obstacles encountered in carrying out online learning (Yuliyanto & Yamin, 2022). The learning model is an additional component so that a learning activity can achieve the expected goals. The application of online learning helps teachers carry out learning effectively, but there are obstacles experienced(Frehywot et al., 2013; Minuti et al., 2018). These obstacles include not conveying motivation, self-confidence, and positive values taught by teachers to students during online learning where teachers and students can only interact virtually or not face to face in class. Online learning is sometimes used as an opportunity for students not to take part in learning and not submit assignments for various reasons(Albelbisi & Yusop, 2019). This shows the low motivation of students in online learning. So that online learning requires the support of learning models that support student motivation to actively participate in online learning, the ARCS learning model is a learning model that can increase student motivation to participate in learning.

The low motivation of students has a major impact on the poor understanding of knowledge by students during learning activities. According to (Sugrah, 2020), the learning process must take place constructively. Students create an image of internal knowledge and study it into personal experience, so that constructivism can be interpreted as a learning that occurs based on the active involvement of students in constructing meaning and knowledge. Mattar (2018) explains that an educator must create learning activities that have real relevance for students. The success of an activity process is inseparable from the implementation of an appropriate learning model. Constructivism is a theory that supports collaborative and interactive learning activities both offline and online.

The ARCS model is considered capable of encouraging enthusiasm or motivation to learn, participation, self-confidence and learning outcomes obtained by students. Several previous studies support this statement. Mawaddah (2015) researched student worksheets and found the development of student worksheets (Student Worksheets with the ARCS model can encourage an increase in student learning outcomes. In line with that, Fadilah & Yahya (2016) said that the use of ARCS-based modules can motivate students to students learn independently outside the classroom and easily understand the material.

Based on previous research, the authors aim to compare the ARCS model in learning activities both offline before the pandemic and online during the Covid-19 pandemic. This study includes studies related to: (1) the ARCS model in offline learning before the covid pandemic; (2) the ARCS model in online learning during the Covid-19 pandemic and (3) Comparison of the ARCS model in offline and online learning.

METHODS

Article writing uses a research method, namely a narrative literature review by comparing and analyzing the results of previous research, and looking for theoretical foundation references that are in accordance with the problems studied . The purpose of the author in choosing this method is to assess, summarize, and communicate some of the results of writing about the ARCS Model in offline and online learning. This paper utilizes secondary data obtained by collecting data related to the appropriate topic by utilizing various sources. The sources used as library material in this writing are writings that have been made previously by different authors. In this case, the sources we use as literature are obtained from articles contained in the Google Scholar database. In searching for articles, we have several provisions related to the criteria used as a source of literature, including:

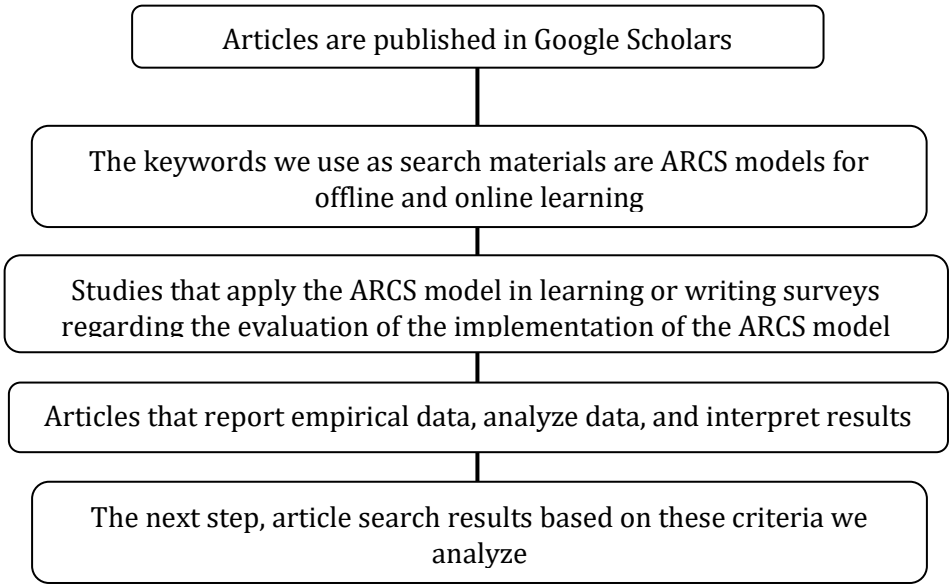

Figure 1. Article search terms

RESULTS AND DISCUSSION

Following results studies about the deep ARCS model activity learning offline before Covid-19 pandemic and online during Covid-19 pandemic.

Deep ARCS models offline learning before covid pandemic

The ARCS model, developed over 30 years ago (Li & Keller, 2018), was designed to continuously enhance motivation in study participants engaged in educational activities. Numerous studies have shown that while the ARCS model has been applied in various countries, the process of implementing it to increase motivation in educational participants may vary. This variation arises from the psychological circumstances and cultural backgrounds of each participant. Many articles have reviewed the application of the ARCS model in learning, and researchers from both domestic and international sources have extensively studied its implementation.

Research examining the ARCS model in Indonesia has been conducted by various scholars. Nurohmani et al. (2015) found that the deep ARCS learning model implemented in offline learning can significantly enhance the motivation of participating students in accordance with their learning styles. Furthermore, Nirbita (2017) discovered that the ARCS model effectively encourages student participation in submitting and answering questions during class discussions. Stephanie (2014) stated that there are differences in the motivation and learning outcomes between students who learn with the ARCS model and those who do not. Participants also tend to prefer group studying and exhibit greater perseverance when studying independently.

Additionally, Nugroho & Wahyuni (2018) concluded that the application of the ARCS model, specifically through the use of video tutorials, greatly supports online marketing lessons in vocational education by enhancing both student motivation and engagement. Aryawan et al. (2014) conducted a test of the ARCS model in the context of social knowledge, and the results indicated a significant improvement in student motivation through the implementation of the ARCS learning model.

Many ARCS models have been studied and developed in several countries. Following numerous research studies that examine ARCS as a solution for effective learning in many countries, a study conducted in Malaysia by Leong (2015) found a significant change in motivation and learning achievement among participants after using the ARCS learning model. Another study in Malaysia, conducted by Annamalai (2016), utilized the ARCS model to create ebook teaching materials. A related research study in a polytechnic institution discovered that implementing the ARCS model in the design of ebook teaching materials can greatly enhance the motivation of all participants in their studies.

Studies on the ARCS model have been conducted in various countries, including Thailand. Piriyasurawong (2019) conducted a study in Thailand and found enhancements in motivation and achievement among participants using the ARCS model. Similarly, research conducted in China by Zhang (2017) indicates that the ARCS learning model greatly stimulates participants' desire for independent study, especially when utilizing technology. Zhang (2015) also discovered that the ARCS model effectively motivates participants in listening activities. In Taiwan, Chanlin (2009) implemented a study focusing on the ARCS model as the main theme in summarizing motivational approaches in web-based learning activities, which yielded positive results in terms of motivation. Furthermore, Ibharim &Shukuri (2022) obtained significant findings by designing learning activities guided by the ARCS model to improve English language reading skills, resulting in increased motivation, learning performance, and sustainable intentions to learn. Liao (2008) and Wu et al. (2012) revealed the significant impact of the ARCS model on motivating participants in their studies.

Research has also examined the impact of the ARCS model in Turkey. Asiksoy & Özdamli (2016) investigated the effect of ARCS on motivation in non-formal educational settings. Another study conducted by Karakis et al. (2016) yielded encouraging results, showing that the ARCS model effectively enhances motivation and significantly improves learning outcomes for participants. Researchers from the United States, such as Li & Keller (2018) and Doering et al. (2010), have also conducted studies highlighting the positive correlation between the ARCS model and motivation stimulation. Furthermore, studies conducted in various countries prior to the Covid-19 pandemic have demonstrated the positive impact of the ARCS model on offline learning, including increased motivation, engagement, and positive attitudes among participants. The emergence of positive attitudes associated with the ARCS model in offline learning is evident in previous studies. The result is presented by figure 1:

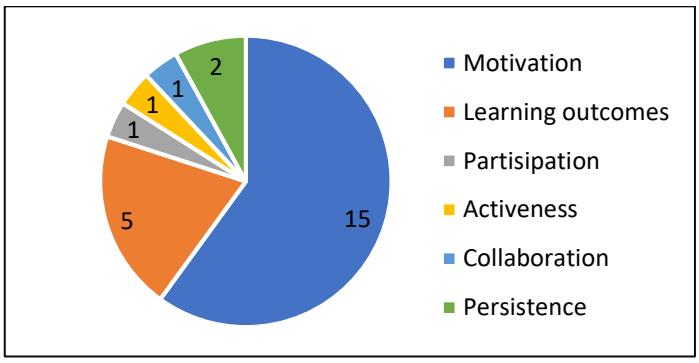

Figure 2. Attitude positive that appears with the ARCS model in offline learning (research 2000-2018)

Based on Figure 2, it can be explained that the results of studies related to the ARCS model in offline learning activities before the pandemic (2000-2018) indicate that motivation is the most positively influenced aspect due to the implementation of the ARCS model. Out of the 16 articles reviewed, 15 of them support the enhancement of motivation through the ARCS learning model. Furthermore, the results of learning have also been extensively researched and show improvement as a result of implementing the ARCS model, which is validated by 5 previous studies. In addition to motivation and learning outcomes, the ARCS model in online learning also improves self-confidence, participation in learning activities, engagement, collaboration, and perseverance.

Several learning media, such as videos, ebooks, websites, audio listening, and text reading, have been identified in the reviewed research as supporting the notion that the ARCS model can increase motivation and foster a positive attitude among participants in offline learning.

ARCS model in online learning during the Covid-19 pandemic

The spread of Covid-19 has made the Indonesian government concerned about the safety of educators and educational participants during offline learning. As a result, learning during the Covid-19 pandemic is conducted online. This, of course, presents a new challenge for educators to increase the motivation of educational participants. Using an effective learning model will help teachers in motivating participants to study independently during online learning. The ARCS learning model is a

recommended approach for increasing the motivation of educational participants during online learning.

The ARCS model is an approach designed to solve problems in learning by incorporating motivational components and providing encouragement to educational participants. Participants can build knowledge and understand newly acquired materials within the framework of problem-solving or by solving problems in the learning process using the ARCS model (Reynolds et al., 2017). The ARCS model can effectively enhance motivation and facilitate the study of educational participants (Li & Keller, 2018).

There have been numerous studies conducted on the ARCS model in online learning during the Covid-19 pandemic. Rahmadianti (2022) examined the effectiveness of the ARCS learning model in enhancing study results and participant motivation, specifically in the context of online poetry writing activities. Sakinah (2022) demonstrated that the ARCS model can increase motivation and improve study results for educational participants in online learning during the pandemic. Similarly, Setyowati et al. (2022) found that participant motivation increased after implementing the ARCS learning model in online learning. Trianti & Hidayati (2021) lso conducted a similar study and concluded that motivation levels of educational participants in online learning experienced consistent improvement with the ARCS method. Furthermore, the application of the ARCS model in online learning during the pandemic led to increased study results for educational participants (Nissa et al., 2021)

Huda (2022) analyzed the influence of e-modules incorporating the ARCS model to increase motivation for online learning and obtained significant results. Khoiriyah et al. (2021) discovered that the ARCS model can enhance motivation and study results for educational participants during online learning. These studies conducted in Indonesia were not the only ones investigating the ARCS learning model in online learning.

Researchers from various countries have conducted similar studies as well. Ma & Lee (2021) conducted research on the ARCS learning model in online and blended learning activities in China, which resulted in increased motivation for all educational participants during online and blended learning amid the Covid-19 pandemic. Ucar & Kumtepe (2020) revealed that the ARCS model increased motivation, academic achievements, and learning outcomes. Ibharim & Shukuri (2022) conducted research demonstrating that the use of digital games as a display tool in online learning can increase motivation for all educational participants.

Durrani & Kamal (2018) ound that the ARCS model increased motivation and attention among educational participants in online learning during the Covid-19 pandemic. Enhancing motivation and attention among educational participants in online learning during the pandemic ultimately leads to increased learning effectiveness. Piriyasurawong (2019) stated that implementing the ARCS model in learning can improve study results and the abilities of educational participants in discussions. Durrani et al. (2022) nvestigated the connection between participant motivation and learning effectiveness, as well as the influence of the Cross Question Games media on motivation during online learning using the ARCS model. The study found that participant motivation significantly influences learning effectiveness, and the ARCS model combined with the Cross Question Games media can increase participant motivation for online learning during the Covid-19 pandemic. The influence of ARCS becomes even more significant in enhancing participant motivation for online learning. Mirzaei et al. (2022), as well as improving learning outcomes.

Overall, the positive attitudes of educational participants towards the ARCS learning model in online learning during the Covid-19 pandemic have been supported by previous studies, yielding the following results:

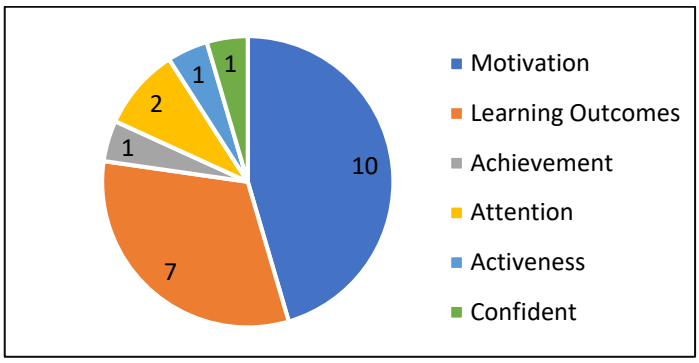

Figure 3. The positive attitudes that emerge with the ARCS model in online learning during the Covid-19 pandemic have been the subject of research studies conducted between 2000 and 2018.

Based on Figure 3, we can conclude that the ARCS model supports the emergence of positive attitudes among educational participants during online learning amid the Covid-19 pandemic. The ARCS model effectively promotes participant motivation, as validated by 10 out of 14 previous studies. Additionally, the application of the ARCS model has been found to improve learning outcomes, as supported by 7 previous studies indicating its positive impact on participant study results. In addition to motivation and study results, the ARCS model also enhances learning performance, attention, engagement, and self-confidence among educational participants in online learning activities.

During the Covid-19 pandemic, efforts to enhance learning effectiveness have been made through the implementation of the ARCS model in online learning. The ARCS model has demonstrated its ability to increase motivation, improve learning outcomes, enhance achievement, capture attention, foster active participation, and instill self-confidence. Moreover, the ARCS model can be effectively combined with various learning media to further enhance motivation, learning results, achievement, attention, engagement, and self-confidence. Some of the learning media that have been reviewed in conjunction with the ARCS model in online learning include poetry writing assignments, spoken texts, digital games, Cross Question games, and e-modules.

Overall, these findings emphasize the importance of utilizing the ARCS model in conjunction with appropriate learning media to promote positive attitudes, motivation, and learning outcomes among educational participants in online learning, particularly in the context of the Covid-19 pandemic.

Comparison of the ARCS model in offline learning before the Covid-19 pandemic and online learning during the pandemic

Reveals the positive attitudes of the participating learners that can be influenced by the ARCS learning model. There are both similarities and differences regarding the implementation of the ARCS model in online and offline learning. In online learning, the effectiveness of the ARCS model in increasing motivation and learning outcomes of the participants is not diminished. However, the application of the ARCS learning model during the Covid-19 pandemic requires teachers to be more creative and utilize supportive learning media for online activities.

A more detailed comparison of the ARCS model in offline learning (2000-2018) and online learning during the Covid-19 pandemic (2010-2022) is presented in Table 1, which illustrates the utilization of various mediums in ARCS studies conducted before and after the pandemic.

Table 1. Usage of Mediums in ARCS Studies Before and After the Pandemic

Variable Upgraded	Offline Before Pandemic	Online During Covid-19 Pandemic
Motivation	video tutorials; *ebooks;* audio *listening*, web, text *reading*	sheet write poetry; e- module; digital *games*; *cross question game*
Study results	reading text	sheet write poetry; e- module
Liveliness	video tutorials	
Perseverance	*reading* text	

Based on Table 1, there are differences in the use of companion media in the ARCS model between offline and online learning. In offline learning, companion media such as video tutorials, ebooks, audio

listening, web, and text reading are utilized. Participants engage in activities such as watching, reading, listening, and observing, followed by drawing conclusions in the learning process. Motivation is enhanced through the use of video tutorials, ebooks, audio listening, web, and text reading, aiming to boost participants' enthusiasm in learning. Study results and persistence are improved through text reading, which enhances participants' understanding and curiosity. Liveliness of participants is enhanced through video tutorials, allowing them to respond and react to the content demonstrated in the tutorials.

In online learning, motivation is enhanced through various activities such as engaging in sheet write poetry, using e-modules, playing digital games, and participating in cross question games. These activities require active involvement from the participants, going beyond merely being passive recipients. By playing games, participants become active players, fully immersed in the learning activity. Similarly, when using a work sheet for writing poetry, participants actively engage in the learning process, rather than just listening or watching others read poetry. The presence of the work sheet for writing poetry and e-modules has shown improved study outcomes. The availability of e-modules in a digital format further facilitates a deeper understanding of the material, as they are effectively utilized in online learning activities.

Not only does the use of different media distinguish between offline and online learning that utilizes the ARCS model, but there are also distinct differences in the enhanced variables for each learning mode, which are presented in detail in Table 2.

Table 2. Variables improved in the ARCS studies before and after pandemic

Enhanced Variables	Offline Before the Pandemic	Go Online During the Covid-19 Pandemic
Motivation	Setyadin & Joko (2013); Stefany et al. (2016); Nugroho & Wahyuni (2018); Aryan et al.; Popovich (2000); Zhang (2017); Zhang (2015); Chan (2009); Hung et al. (2013); Liao & Wang (2008); Wu et al. (2012); Asiksoy & Ozdamli (2016); Karamete & Okcu (2016); Doering, et al. (2010)	Rahmadianti (2022); Sakinah & Sitompul (2022); Setyowati & Efwinda (2022); Trianti & Hidayati (2021); Nissa et al (2021); Huda (2022); Khoiriyah & Qosyim (2021); Ma & Lee (2021); Ucar & Kumtepe (2019); Ibrahim & Shukuri (2022); Durrani & Kamal (2021); Durrani et al. (2022);
Learning outcomes	Hung et al. (2013); Karamete & Okcu (2016)	Rahmadianti (2022); Sakinah & Sitompul (2022); Trianti & Hidayati (2021); Nissa et al. (2021); Huda (2022); Khoiriyah & Qosyim (2021); Ucar & Kumtepe (2019); Piriyasurawong (2019); Mirzaei et al. (2022),
Performance		Ucar & Kumtepe (2019)
Self-confident		Piriyasurawong (2019)
Participation	Nirbita (2017); Popovich (2000)	
Liveliness	Nugroho & Wahyuni (2018);	Mirzaei et al. (2022)
Attention		Nissa et al. (2021); Durrani & Kamal (2021)
Collaboration	Stefany et al. (2016);	
Perseverance	Hung et al. (2013)	

Based on the data in Table 2, increasing motivation has been validated by previous studies in both offline learning before the pandemic and online learning during the COVID-19 pandemic. The ARCS model is specifically designed to stimulate and sustain student motivation during the learning process. Increasing motivation is the primary goal of the ARCS instructional model because motivation plays a crucial role in enhancing student engagement and learning outcomes. When students have high motivation, they are more likely to be active, enthusiastic, and focused on the learning process. High motivation can also increase self-confidence, perseverance, and interest in the learning material.

Learning outcomes and student engagement have been consistently proven to be enhanced by the presence of the ARCS model in both online and offline learning. However, participation in collaboration and perseverance are only increased by the ARCS model in offline learning, and no studies with similar findings were found for online learning. On the other hand, in offline learning, the ARCS model enhances student self-confidence and attention in online learning activities. This is consistent with the study by Piriyasurawong and Pornpan (2019), where the ARCS method increased student self-confidence, which indirectly led to increased engagement and participation in online learning. Refer to the table below for a more detailed view of the similarities and differences in variables enhanced by the ARCS learning model in online and offline learning.

Table 3. Similarities and Differences in Variables Enhanced by the ARCS Learning Model in Online and Offline Learning

Variable	Offline Before the Pandemic	Online During the Covid-19 Pandemic
Motivation	[✓]	[✓]
Learning Outcomes	[✓]	[✓]
Performance	[✓]	
Self-confidence	[✓]	
Participation	[✓]	
Engagement	[✓]	
Attention	[✓]	[✓]
Collaboration	[✓]	
Perseverance	[✓]	
Activeness	[✓]	[✓]

The checkmark [✓] indicates that the variable has been validated in relevant studies. If there is no checkmark, it means that there is no supporting research for that variable in the mentioned context.

The ARCS model consistently enhances student motivation in both offline learning before the pandemic and online learning during the COVID-19 pandemic. This is supported by numerous studies showing increased motivation with the implementation of the ARCS model. The ARCS model has been proven to improve student learning outcomes in both offline and online learning. Previous studies indicate significant improvements in learning outcomes when using the ARCS model.

In addition to motivation and learning outcomes, the ARCS model also enhances other variables. In offline learning, the ARCS model improves student participation, collaboration, and perseverance. In online learning, the ARCS model enhances self-confidence, attention, and academic achievement. There are differences in the variables that are enhanced between offline and online learning when using the ARCS model. Offline learning tends to focus more on participation, collaboration, and perseverance, while online learning focuses more on self-confidence, attention, and academic achievement. Learning media also play a role in the implementation of the ARCS model. Several studies have shown that learning media such as writing poetry sheets, spoken texts, digital games, question and answer games, and electronic modules can enhance motivation, learning outcomes, and student engagement in learning with the ARCS model. Overall, the table provides evidence that the ARCS model is effective in enhancing motivation, learning outcomes, and other variables in both offline and online learning settings

CONCLUSIONS AND SUGGESTIONS

A. Conclusion

The ARCS model has been widely studied in both offline and online learning settings, conducted by researchers both domestically and internationally. The research findings consistently demonstrate that the ARCS model enhances motivation, learning outcomes, and student engagement in both offline and

online learning. However, there are some differences in the variables that are improved when implementing the ARCS model in offline and online learning settings.

In offline learning, the ARCS model improves student participation, collaboration, and perseverance. The use of media in offline learning places students as active participants in the learning activities. On the other hand, in online learning, the ARCS model enhances student confidence, attention, and academic achievement. The media used in online learning positions students as active participants in the learning process.

These findings indicate that the ARCS model effectively enhances various aspects of the learning experience, regardless of whether it is offline or online. The model consistently boosts motivation, learning outcomes, and student engagement. However, the specific variables that are improved may differ depending on the learning context.

Overall, the ARCS model proves to be a valuable approach in both offline and online learning environments, enhancing motivation, learning outcomes, and student engagement. The choice of media used in each context differs, with offline learning focusing on student involvement in learning activities, while online learning emphasizes active student participation.

B. Suggestion

Based on these conclusions, it is recommended to consider the specific learning context when applying the ARCS model to maximize its effectiveness. In an offline learning environment, educators should focus on activities that encourage participation, collaboration, and perseverance, by utilizing media that actively engage students in practical assignments. For online learning, strategies must be tailored to increase student confidence, maintain attention, and improve academic achievement by leveraging digital tools that encourage active engagement and self-paced learning. Additionally, educators should explore blended approaches, which blend elements of offline and online learning, to create more comprehensive learning experiences that leverage the power of the ARCS model.

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