



INTERNATIONAL JOURNAL OF
MODERN EDUCATION
(IJMOE)
www.ijmoec.com



A REVIEW OF THE APPLICATION OF ARCS MODEL IN EFL TEACHING

Liao Juan^{1*}, Zurina Yasak²

¹ Faculty of Technical and Vocational Education, Universiti Tun Hussein Onn Malaysia, Malaysia
Email: olivialiao2023@yahoo.com

² Faculty of Technical and Vocational Education, Universiti Tun Hussein Onn Malaysia, Malaysia
Email: zurina@uthm.edu.my

* Corresponding Author

Article Info:

Article history:

Received date: 23.01.2024
Revised date: 15.02.2024
Accepted date: 03.03.2024
Published date: 21.03.2024

To cite this document:

Liao, J., & Yasak, Z. (2024). A Review Of The Application Of Arcs Model In EFL Teaching. *International Journal of Modern Education*, 6 (20), 510-521.

DOI: 10.35631/IJMOE.620037

This work is licensed under [CC BY 4.0](https://creativecommons.org/licenses/by/4.0/)



Abstract:

This article review the research on applying ARCS model in EFL teaching. A total of 48 articles related to applying ARCS model in EFL teaching published between the years of 2014 to 2023 were identified from the databases of Google Scholar, ERIC, Scopus and CNKI. It was found that ARCS model has been widely integrated with other instruction models such as flipped classroom, when being applied in EFL teaching. Besides, ARCS model has also been applied in designing digital English learning resources, AR/VR and games.

Keywords:

ARCS, Model, EFL Teaching

Introduction

The study aims to investigate how ARCS motivational model was applied in EFL teaching settings. Motivation is a key element of learning. In fact, people usually attribute the success of language learning to the strength of motivation (Dörnyei & Hadfield, 2014). Most teachers and researchers agree that motivation plays a crucial role in determining the effectiveness of learning (DÖRNYEI, 2002). In second language acquisition, motivation is also a key factor that determines learning effectiveness. Researchers such as Garden pointed out that learners'

attitude and motivation predict the performance of second language learning (Garden et al., 1985). Csizer & Dörnyei (2005) also pointed out that motivation is one of the key factors that determine how successful second language acquisition would be and motivation is closely related to the success of learning; Without sufficient motivation, even the smartest learners will not be able to truly master the practical knowledge of a foreign language (Dörnyei & Hadfield, 2014).

Dörnyei (2001) defines motivation as something related to the direction and intensity of human behavior, that is, “the choice of a particular action, the persistence with it and the effort expended on it. In other words, motivation is responsible for why people decide to do something, how long they are willing to sustain the activity and how hard they are going to pursue it” (p. 8).

In view of the importance of motivation in second language acquisition, many researchers have devoted themselves to studying how to improve learners' learning motivation. John Keller proposed the ARCS motivation model in 1983. The ARCS model is an instructional design model that is used to design motivational strategies of learning environment to promote and sustain student motivation (Keller, 1987). There are four components in ARCS model : Attention, Relevance, Confidence and Satisfaction. Attention refers to gaining students' interest and stimulating their curiosity in learning; relevance refers to meeting students' needs and goals so that they have a positive attitude; confidence refers to helping students believe that they will succeed; satisfaction refers to enhancing students' sense of achievement through internal and external rewards (Keller, 1987b).

John Keller (2010) designed three supporting strategies for each component of ARCS model. The attention getting strategies include Perceptual Arousal, Inquiry Arousal and Variability; The Relevance Producing Strategies include Goal Orientation, Motive Matching and Familiarity; As for Confidence Building Strategies, there are Learning requirements, Success opportunities and Personal control; For the Satisfaction component, the supporting strategies are Natural consequences, Positive consequences and Equity.

Some researchers have reviewed the studies on how the ARCS model was applied in teaching. Li and Keller (2018) conducted a review on the use of the ARCS model in education and found that the ARCS model has been implemented in a diversity of educational settings around the world. Another finding is that most reviewed studies adopted quantitative methods, and they also found those empirical studies focused on the following outcomes: affective domain, cognitive domain, learner behaviors and psychological traits. Fang (2023) did a systematic review of empirical studies on the application of ARCS model from 2011 to 2022. They reviewed 55 empirical studies in terms of pedagogical design, theoretical foundation and measurement tools. Regarding the effects of ARCS model, 17 studies stated the ARCS model improved students' motivation and 14 studies reported that the ARCS model was beneficial in enhancing students' academic performance as well as learning effects in other aspects.

Although a few researchers have reviewed the application of the ARCS model in education, there is few research which reviewed how ARCS model is applied in the specific field of EFL teaching. Therefore, this study aims to investigate and analyze how the ARCS model is applied in the field of EFL teaching.

The study was conducted to answer the following questions:

1. What are the educational settings of the ARCS model applied in the reviewed studies?
2. How has ARCS model been applied in EFL teaching in the past decade?

Method

This study used a systematic review method, which conforms to the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) 2020 checklist. The checklist includes 27 items and the PRISMA statement with a four-phase flow diagram (Moher et al., 2010). Therefore, this systematic review is composed of the four phases: (1) identification phase, (2) screening phase, (3) eligibility phase, (4) inclusion phase.

A search was conducted in the English databases Google scholar, ERIC, Scopus and Chinese database web of CNKI. The key words used in search include “ARCS” and “EFL”, “ARCS” and “English”, “ARCS” and “flipped classroom”, “ARCS” and “Second language teaching”. The time range for the publication is from 2014 to 2023.

When selecting the relevant articles from the databases for this study, certain criteria are followed. The criteria for inclusion and exclusion are shown in table 1. It should be noted that this study focuses on investigating how ARCS model has been applied in EFL teaching, thus articles which only used ARCS questionnaires and surveys or merely evaluated the effects of ARCS model are excluded.

Table 1: Criteria For Inclusion And Exclusion

Inclusion criteria	Exclusion criteria
(1) Journal articles	Book, proceedings, review and meta-analysis paper
(2) Articles published from 2014 to 2023	Articles that are not published between 2014 to 2023
(3) ARCS model is applied in EFL teaching	ARCS model is not used in EFL teaching
(4) Study educational settings ranging from primary schools to higher education	Articles that are not written in English

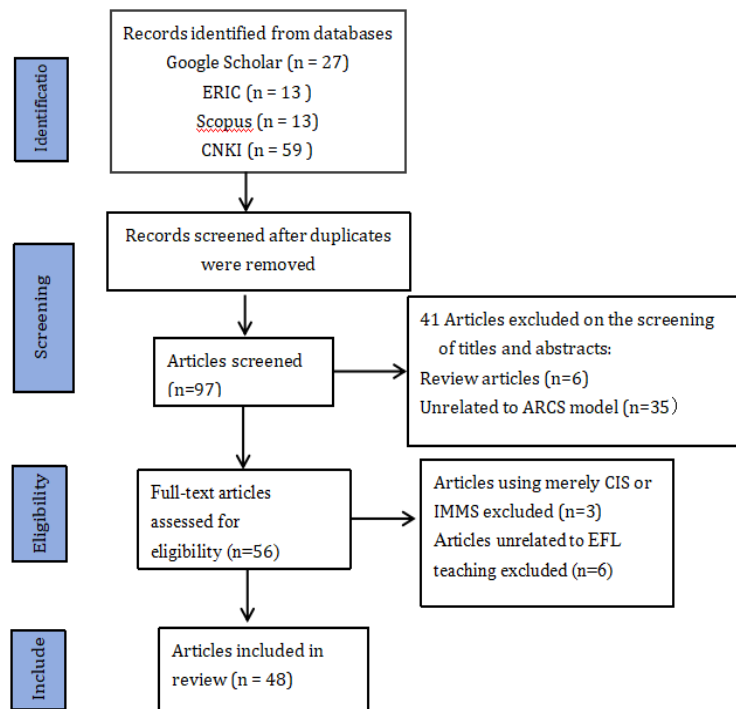


Figure 1. Flow of the Systematic Review Process

A total of 112 articles were identified after searching for the key words on google scholar, Eric, Scopus and CNKI with the time setting between 2014 and 2023. After checking the duplicated articles, 15 duplicates were removed. When the titles and abstracts of the remaining 97 articles are screened, 6 systematic reviews were removed; Besides, there are 35 articles in which ARCS model is merely mentioned instead of being applied in EFL teaching. After removing those articles, there are a total of 56 articles remained which were assessed in full-text. After further examining those full-text articles, three articles were excluded as they only used ARCS questionnaires, namely IMMS or CIS while the ARCS model was not used in these studies Another six articles were also exclude as they are not related to EFL teaching. There were 48 articles selected based on the criteria.

Results and Discussion

Research Question 1: What Are The Educational Settings Of The ARCS Model Applied In The Reviewed Studies?

Table 2: Distribution by Region

Region of Publication	No. of articles
China mainland	35
Taiwan	6
Malaysia	1
Indonesia	2

Korea	1
Japan	1
Turkey	1
Iran	1

Distribution by Region

As is shown in table 2, most reviewed studies were conducted in China, mostly mainland China (35 out of 48). Authors from Taiwan, China are the second largest contributor (6 of 48). The other studies are mainly Asia countries (5 of 48): Malaysia, Indonesia, Korea and Japan. Only two studies were done in countries in the Middle east (Iran and Turkey).

Figure 2: Country of Publication

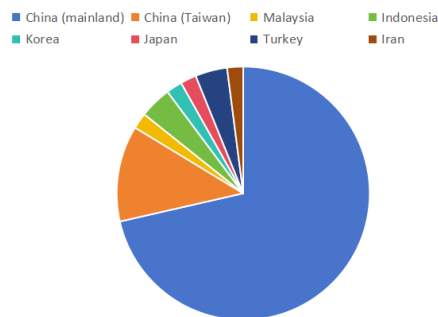
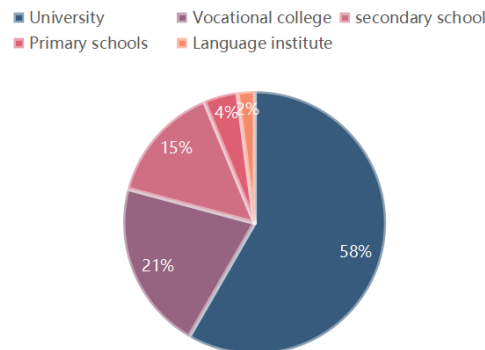


Figure 3: Distribution by Educational Settings



Distribution by Educational Settings

As it is displayed in figure 3, over half of the research (28 out of 48, 58%) were carried out in universities. The second largest proportion of the studies were conducted in vocational colleges (21%). 15% of the studies were done in secondary schools, including junior high schools, senior high schools and secondary vocational schools. Only two studies were conducted in primary schools. Besides, there is one study focusing on language institute.

Research Question 2: How Has ARCS Model Been Applied In EFL Teaching In The Past Decade?

Table 3: Application of ARCS Model in EFL Teaching

Dimensions		N	Studies
Instruction models	Flipped classroom	5	Wu (2015), Hong (2019), Sun and Xu (2019), Fu et al. (2019), Mirzaei (2022)
	Other forms of Blended learning	8	ONO (2015), Ke and Hu (2022), Zheng (2023), Yi and Wu (2020), Wang (2020), Li (2020), Ma (2020), Zhang (2022)
	Online learning	2	Jeong (2019), Sha et al. (2018),
	Mobile learning	1	Chang et al. (2016)
Ou	Face-to-face Instruction model	21	Pan (2018), Fu (2022), Liu (2017), Yao (2016), Li (2015), Xu (2020), Zhang (2015), Wang(2017), Xiong (2017), Niu (2015), Xu (2018), Liu (2020), Huang (2021), Kuang and Wang (2016), Yin (2015), Li (2022), Ou and Li (2021), Cheng (2021), Lubis (2023), Kurt and Keçik (2017), Lestari (2021)
Digital learning resources	Microlecture	4	Dong and Song (2021), Li (2019), Peng (2015), Zhou (2018)
	English learning APP	1	Han and Song (2019)
Instruction activity/aid	eBOOK	1	Annamalai (2016)
	AR	2	Chang et al. (2020), Lin and Wang (2022)
	Game	3	Chang et al. (2017), Wu (2018), Hao and Lee (2019)

After reviewing the journal papers on the application of ARCS model in EFL teaching from Google Scholar, Eric, Scopus and CNKI in the past ten years, it was found that the reviewed papers fall into three categories based on the application or integration mode of ARCS model: (1) Integration with other instruction models, (2) Application in digital learning resources, and (3) Application in instruction activity or aid.

Integration with Other Instruction Models

They can be further divided into 5 subcategories according to the type of instruction model with which ARCS model is integrated with: (1) Integration with flipped classroom, (2) Integration with other forms of Blended learning, (3) Integration with online learning, (4) Integration with mobile learning and (5) integration with face-to-face instruction.

In EFL teaching, the ARCS model is often used in combination with hybrid teaching models such as flipped classroom. There are 5 articles which focus on the application of ARCS in flipped classroom (Wu, 2015; Hong, 2019; Sun & Xu, 2019; Fu et al.,2019; Mirzaei,2022), and two of them only apply ARCS model in designing pre-class tasks in flipped classrooms (Wu, 2015; Hong, 2019), while in the other three studies the entire teaching process was designed in

accordance with the four elements of the ARCS model (Sun & Xu, 2019; Fu et al. 2019; Mirzaei, 2019).

There are 8 articles dedicated to integrating the ARCS model with other blended teaching models (ONO, 2015; Ke & Hu, 2022; Zheng, 2023; Yi & Wu, 2020; Wang, 2020; Li, 2020; Ma, 2020; Zhang, 2022) to explore how to enhance students' attention, establish relevance with students, improve students' self-confidence and reinforce students' sense of satisfaction in EFL teaching; two of the papers (Yi and Wu, 2020; Li, 2020) use Rain Classroom as the platform of implementing blended teaching, and one combines SPOC with ARCS model (Zhang, 2022).

In addition to the blended teaching model, some scholars have combined the ARCS model with online learning (Sha et al., 2018; Jeong, 2019) and mobile learning (Chang et al., 2016). Jeong (2019) designed a motivational strategy for four stages of online cooperative language learning based on the four elements of the ARCS model. The experimental subjects were 64 college students in South Korea. The results confirmed the effectiveness of the ARCS model.

It is worth noting that among all those journal articles on the applying the ARCS model in combination with other teaching models, all Chinese papers discuss it theoretically, while the studies conducted in Japan, Iran and Korea are empirical research (ONO, 2015; Jeong, 2019; Mirzaei, 2022). In the study of ONO et al. (2015), corresponding specific teaching strategies were designed based on 12 strategies under the four elements of ARCS, and an empirical study was conducted on 76 senior Japanese students, confirming the effectiveness of the integration of the ARCS model and the hybrid teaching model: students' vocabulary acquisition has improved, and strengthening the confidence and satisfaction strategies in the ARCS model has achieved the expected effect on motivation. Mirzaei et al. (2022) combined the ARCS model with flipped classroom and applied it in EFL expository writing teaching, a 9-week experiment was conducted on 31 Iranian EFL learners in the experimental group and 28 in the control group, and the results showed that ARCS-flipped group's performance in writing was better compared with that of the control group, besides, the former's motivation was enhanced.

In the reviewed articles, there are 20 articles (as shown in table 3) which are dedicated to exploring how the ARCS model is applied in the process of face-to-face EFL instruction. Most of them are theoretical studies (18 out of 20). In six studies a certain unit or module of the textbook was used as an example to illustrate the application of the ARCS model in the teaching of various English courses (Niu, 2015; Yao, 2016; Wang, 2017; Pan, 2018; Ou & Li, 2021; Cheng, 2021), and only two articles are empirical studies (Kurt1 & Keçik, 2017; Xu, 2018). Kurt and Keçik (2017) used 30 students from a university in Turkey as the research subjects. the empirical study was carried out to develop teaching plans according to the ten steps of the Keller ARCS model. The results confirmed that applying the ARCS model to language teaching has a positive impact on improving students' learning motivation; Xu (2018) selected two classes of sophomores majoring in Business English management at a higher vocational and technical school as experimental subjects to conduct an empirical study on developing teaching strategies based on the ARCS motivation model for the course of International Trade Spoken English. The results showed that the students' scores in the experimental group were significantly improved.

Application Of ARCS Model In Designing Digital Learning Resources

There are 7 articles focusing on applying ARCS model in designing digital learning resources, which are further categorized into (1) Microlecture, (2) English learning APP, and (3) e-book.

The researchers designed Microlectures based on the four components of ARCS model (Peng, 2015; Zhou, 2018; Li, 2019; Dong & Song, 2021). Peng (2015) elaborated how to design Microlecture for college English in accordance with ARCS components: Attention, Relevance, Confidence and Satisfaction. Zhou Rong (2018) proposed a pyramid model for designing Microlectures for college English, arousing and maintaining students' interest with a variety of tools and means. Li (2019) analyzed the potential problems in designing microlectures for the course of English writing and suggested some solutions. With regard to teaching English in primary schools, Dong and Song (2021) proposed the principles for designing Microlectures in accordance with ARCS model: the principles of practicability, systematicness and diversified evaluation.

Regarding the application of ARCS model in designing APP, there is only one article (Han and Song, 2019). Han and Song (2019) used the ARCS model to enhance learners' attention, relevance, confidence and satisfaction when designing an English listening APP, and conducted an empirical study with 60 sophomores of science students from a university in Liaoning as experimental subjects. It is verified that the design can not only effectively improve students' interest in learning, but also effectively improve students' listening competence.

As to the third category, in Annamalai (2016) study, the content layout and motivational strategies of the e-book for Polytechnic Language Classroom were designed according to the four components of ARCS model. It also conducted an empirical study with 60 polytechnic students as subjects, and the results indicated that the students viewed the e-book as motivating and interesting.

Application In Instruction Activity Or Aid

In the reviewed papers, three studies by researchers from Taiwan focused on combining ARCS model with games (Chang et al., 2017; Wu, 2018; . In Chang et al. (2017) study, ARCS model was integrated with a game design model to develop a Kinect- and game-based interactive learning system, and an empirical experiment was conducted with 60 students in university. The results implied that the students in the experimental group had better improvement in terms of grades, besides, those students' motivation has been enhanced in Attention, Relevance, Confidence and Satisfaction. The study conducted by Wu (2018) combined ARCS model with mobile game to design a mobile game-based English vocabulary practice system. In this study games were designed according to the 12 supporting strategies for each component of ARCS model. Hao and Lee (2019) study integrates ARCS model and AR games for English learning. The AR games were designed based on the supporting strategies of the four components in ARCS model. The research subjects are 147 student of Grade 5. Results indicated that students in the experimental group (AR learning) had notably higher motivation in learning compared with those in the control group (traditional learning).

Besides combining ARCS model with games, two studies by Taiwanese researchers integrate the model with augmented reality (Chang et al., 2020; Lin & Wang, 2022). In Chang et al. (2020) study, the teaching program is designed by integrating ARCS model with augmented reality and the results showed that students' concentration, confidence and satisfaction in

learning English. In the other study by Lin and Wang (2022), ARCS model was also combined with augmented reality to stimulate students' learning motivation and the efficacy of integrating AR with ARCS model has been proved in the experiment with 39 freshman in a Taiwan university being research subjects.

Conclusion

This study seeks to investigate how ARCS model was applied in EFL teaching settings in the past decade. It is found that the most studies on applying ARCS model in teaching EFL courses were conducted in China, while the studies in this domain in other countries were quite limited. It was also found that ARCS model has been widely combined with other instruction models such as flipped classroom and online learning when being applied in EFL teaching. Besides, ARCS model has also been applied in designing digital English learning resources including Microlectures, English learning APP and e-books. Furthermore, researchers from Taiwan focused their studies on integrating ARCS model with games or augmented reality in EFL teaching. It should be noted that most studies conducted in mainland China are theoretical while those done in Taiwan and other countries are empirical studies. The current study focuses on reviewing studies on how the ARCS model has been applied in EFL teaching in various educational settings. However, it did not evaluate the effects of applying the ARCS model in this field. It is suggested that researchers investigate the effects of applying the ARCS model in EFL teaching in the future. In addition, the factors affecting the EFL learning outcomes when the ARCS model is applied is another meaningful direction to explore.

Acknowledgements

The authors would like to acknowledge and extended special gratitude to my associate, Wang Rui, who provided generous assistance and support for this study.

References

- Annamalai, S. (2016). Designing motivating mE-book for polytechnic language classroom using ARCS model. *European Proceedings of Social and Behavioural Sciences*.
- Bernaus M, Gardner R (2008) Teacher motivation strategies, student perceptions, student motivation, and English achievement. *Modern Language Journal* 92(3): 387–401.
- Chang, C., Chang, C. K., & Shih, J. L. (2016). Motivational strategies in a mobile inquiry-based language learning setting. *System*, 59, 100-115.
- Chang, Y. H., Hwang, J. H., Fang, R. J., & Lu, Y. T. (2017). A Kinect-and game-based interactive learning system. *Eurasia Journal of Mathematics, Science and Technology Education*, 13(8), 4897-4914.
- Chang, Y. S., Chen, C. N., & Liao, C. L. (2020). Enhancing english-learning performance through a simulation classroom for EFL students using augmented reality—A junior high school case study. *Applied Sciences*, 10(21), 7854.
- Cheng, P. (2021). English learning motivation design based on the principle of "ARCS Motivation Design Model" - Taking the course "Tourism English" as an example. *English Square (01)*, 122-124.doi:10.16723/j.cnki. yygc.2021.01.036.
- Csizér, K., & Dörnyei, Z. (2005). The internal structure of language learning motivation and its relationship with language choice and learning effort. *The modern language journal*, 89(1), 19-36.
- Dong, L. & Song, Y. J. (2021). Analysis of primary school English micro-course teaching design from the perspective of ARCS motivation model. *Education and Teaching Forum* (22), 93-96.

- Dörnyei Z (2001) New themes and approaches in second language motivation research. *Annual Review of Applied Linguistics* 21: 43–59.
- Dörnyei, Z. (2002). The motivational basis of language learning tasks. *Individual differences and instructed language learning*, 2, 137-158.
- Dörnyei Z (2006) Individual differences in second language acquisition. *AILA Review* 19(1): 42–68.
- Dörnyei Z, Csizér K (1998) Ten commandments for motivating language learners: results of an empirical study. *Language Teaching Research* 2(3): 203–29.
- Dörnyei, Z., & Hadfield, J. (2014). *Motivating learning*. Routledge.
- Fang, X., Ng, D. T. K., Leung, J. K. L., & Xu, H. (2023). The applications of the ARCS model in instructional design, theoretical framework, and measurement tool: a systematic review of empirical studies. *Interactive Learning Environments*, 1-28.
- Fu, J. H. (2022). Application and research of ARCS motivation model in reading teaching for non-English majors in universities. *Modern English* (15), 49-52.
- Fu, S. Q., Zhou, Y. W. & Zhu, Q. X. (2020). Research on curriculum design of flipped classroom based on ARCS model. *Overseas English* (07), 11-13.
- Gardner, R. C., Lalonde, R. N., & Moorcroft, R. (1985). The role of attitudes and motivation in second language learning: Correlational and experimental considerations. *Language learning*, 35(2), 207-227.
- Hao, K. C., & Lee, L. C. (2021). The development and evaluation of an educational game integrating augmented reality, ARCS model, and types of games for English experiment learning: An analysis of learning. *Interactive Learning Environments*, 29(7), 1101-1114.
- Han, L. & Song, P. X. (2019). Design and application of English listening APP based on ARCS model. *Software Guide (Educational Technology)* (07), 87-90. doi:10.16735/j.cnki.jet.2019.07.031.
- Hong, Y. (2019). Design and arrangement of pre-class tasks in flipped classroom—taking the "Advanced English" course for English majors as an example. *Journal of Chifeng University (Chinese Philosophy and Social Sciences Edition)* (05), 142-145. doi:10.13398 /j.cnki.issn1673-2596.2019.05.037.
- Huang, Y. (2021). ESP classroom speaking teaching design based on ARCS motivation model. *Modern Communication* (06), 156-158.
- Jeong, K. O. (2019). Online collaborative language learning for enhancing learner motivation and classroom engagement. *International Journal of Contents*, 15(4), 89-96.
- Ke, H. H. & Hu, A. J. (2022). Research on the listening teaching strategies of higher vocational English level 4 based on ARCS. *Journal of Wuhan Shipbuilding Vocational and Technical College* (02), 78-82.
- Keller, J. M. (1987) Strategies for stimulating the motivation to learn, *Performance and Instruction*, 26(8), 1–7. <https://doi.org/10.1002/pfi.4160260802>.
- Keller, J. M. (2010) *Motivational Design for Learning and Performance: The ARCS Model Approach*. Boston, MA: Springer.
- Kuang, D. & Wang J. (2016). IELTS speaking teaching design based on ARCS motivation model. *Journal of Hubei Radio and Television University* (06), 41-44.
- Kurt, P. Y., & Kecik, I. (2017). The effects of ARCS motivational model on student motivation to learn English. *European Journal of Foreign Language Teaching*.
- Lestari, F. D. (2021). *English Teaching and Linguistics Journal (ETLiJ)*. learning, 16, 08.
- Lewin, K. (1951). *Field theory in social science: Selected theoretical papers*. Harpers.

- Li, F. F. (2015). Application of ARCS motivational design model in college English writing classes. *Journal of Higher Education* (02), 72-73.doi:10.19980/j.cn23-1593/g4.2015.02.037.
- Li, K., & Keller, J. M. (2018). Use of the ARCS model in education: A literature review. *Computers & Education*, 122, 54-62.
- Li, F. F. (2022). Research on the application of open education public English teaching based on the ARCS motivation model—taking open education English club teaching as an example. *Journal of Jiamusi Vocational College* (05), 103-105.
- Li, Q. Y. (2019). Research on English writing micro-course teaching design based on ARCS model. *Think Tank Era* (01), 186-187.
- Li, X. L. (2020). Exploration of hybrid teaching model based on ARCS motivation model. *Journal of Huaihua University* (06), 137-140.doi:10.16074/j.cnki.cn43-1394/z.2020.06.028.
- Liu, D. J. (2020). Application of ARCS motivational design model in oral English teaching. *Journal of Yan'an Vocational and Technical College* (01), 78-80.doi:10.13775/j.cnki.cn61-1472/g4.2020.01.020.
- Liu, H. J. (2016). Application strategies of ARCS motivational design principles in middle school English reading teaching. *English Square* (07), 148-149.doi:10.16723/j.cnki.yycg.2016.07.082.
- Lubis, R. A. P. (2023). THE ARCS MOTIVATIONAL MODEL IMPLEMENTED BY ENGLISH TEACHERS IN TEACHING ENGLISH AS FOREIGN LANGUAGE AT SMAN 1 KOTA BENGKULU. *Teaching English and Language Learning English Journal*, 3(1), 1-11.
- Ma, S. (2020). Research on the blended teaching model of college English listening and speaking courses based on the ARCS model. *English Square* (23), 101-103.doi:10.16723/j.cnki.yycg.2020.23.032.
- Mirzaei, A., Shafiee Rad, H., & Rahimi, E. (2022). Integrating ARCS motivational model and flipped teaching in L2 classrooms: A case of EFL expository writing. *Computer Assisted Language Learning*, 1-30.
- Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & Prisma Group. (2010). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *International journal of surgery*, 8(5), 336-341.
- Moskovsky C, Alrabai F, Paolini S, and Ratcheva S (2013) The effects of teachers' motivational strategies on learners' motivation: a controlled investigation of second language acquisition. *Language Learning* 63(1): 34–62.
- Niu, Y. M. (2015). Research on thematic reading teaching in high school English based on the ARCS model - taking Oxford module three as an example. *Contemporary Education Theory and Practice* (08), 37-40.doi:10.13582/j.cnki.1674- 5884.2015.08.014.
- Ono, Y., Ishihara, M., & Yamashiro, M. (2015). Blended instruction utilizing mobile tools in English teaching at colleges of technology. *Electrical Engineering in Japan*, 192(2), 1-11.
- Ou, G. A. & Li, R. (2021). Application of ARCS motivation model in junior high school English grammar teaching. *Journal of Xingtuan Education College* (01), 73-77.
- Pan, X. J. (2018). Application of ARCS motivation model in business English reading teaching. *Journal of Jincheng Vocational and Technical College* (06), 30-34.
- Peng, Y. H. (2015). Design of higher vocational public English online micro-courses under the ARCS model. *Journal of Taiyuan City Vocational and Technical College* (08), 81-83.doi:10.16227/j.cnki.tyccs.2015.0705.

- Sha, L. H., Guo, S. J., Meng, Z. J. & Sun, C. (2018). Application of ARCS motivational strategies in business English listening and speaking online courses. *Journal of Hebei Water Conservancy and Electric Power University* (04), 73-75. doi:10.16046/j.cnki.issn2096-5680.2018.04.017.
- Sun, Y. B. & Xu, X. M. (2019). Research on flipped college English classroom based on ARCS motivation theory. *Science and Technology Information* (20), 108-109. doi:10.16661/j.cnki.1672-3791.2019.20.108.
- Tolman, E. C. (1932). *Purposive behavior in animals and men*. Century/Random House UK
- Turel, Y. K., & Sanal, S. O. (2018). The effects of an ARCS based e-book on student's achievement, motivation and anxiety. *Computers & Education*, 127, 130-140.
- Wang, L. F. (2017). Application of ARCS learning motivation model in college English classroom teaching. *Journal of Xingtai University* (04), 109-111.
- Wang, W. (2022). College English smart classroom teaching reform based on ARCS motivation model. *Journal of Higher Education* (04), 140-143. doi:10.19980/j.CN23-1593/G4.2022.04.035.
- Wu, T. T. (2018). Improving the effectiveness of English vocabulary review by integrating ARCS with mobile game-based learning. *Journal of Computer Assisted Learning*, 34(3), 315-323.
- Wu, X. Y. (2015). Design of online pre-class tasks for flipped English speaking classes based on the ARCS model. *Journal of Higher Education* (08), 12-13. doi:10.19980/j.cn23-1593/g4.2015.08.005.
- Xiong, R. (2017). A brief analysis of the application of ARCS motivational design model in college English teaching. *Human Resource Development* (08), 142-143. doi:10.19424/j.cnki.41-1372/d.2017.08.077.
- Xu, K. J. (2020). Research on the application strategies of ARCS learning motivation model in junior middle school English listening and speaking classes. *Overseas English* (14), 196-197.
- Xu, Y. Y. (2019). An empirical study on teaching strategies for foreign trade English speaking classes under the ARCS motivation model. *Overseas English* (04), 237-239.
- Yao, Z. M. (2016). ARCS motivational design model and its application in secondary vocational English teaching. *Vocational and Technical Education* (17), 39-41.
- Yi, Z. & Wu, M. Y. (2020). Research on the application of ARCS model in hybrid teaching based on Rain Classroom. *China Education Informatization* (06), 16-21.
- Yin, L. P. (2015). Application of ARCS motivation model in open English teaching. *Journal of Hubei Correspondence University* (23), 138-139+153.
- Zhang, J. (2015). Improving English Listening Proficiency: The Application of ARCS Learning-Motivational Model. *English Language Teaching*, 8(10), 1-6.
- Zhang, X. D. (2022). Research on the SPOC integrated teaching model based on the ARCS motivation model—taking the comprehensive English course of Qingdao City College as an example. *Journal of Changsha Aviation Vocational and Technical College* (03), 71-75. doi:10.13829/j.cnki.issn.1671-9654.2022.03.015.
- Zheng, S. P. (2022). Exploration and practice of college English blended classroom teaching reform under the ARCS model. *Data* (12), 100-102.
- Zhou, R. (2018). Exploration into the practice of college English micro-course teaching based on the ARCS motivation model. *Journal of Ezhou University* (04), 82-84. doi:10.16732/j.cnki.jeu.2018.04.026.