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KỶ YẾU ĐIỆN TỬ HỘI THẢO QUỐC GIA

NGHIÊN CỨU LIÊN NGÀNH VỀ NGÔN NGỮ VÀ GIẢNG DẠY NGÔN NGỮ LẦN THỨ III

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AN INVESTIGATION INTO THE EFFECTIVENESS OF APPLYING THE ARCS MODEL OF MOTIVATIONAL DESIGN TO MOTIVATE VIETNAMESE EFL E-LEARNERS

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Abstract: This study aimed to investigate the effectiveness of applying the ARCS Model of Motivational Design proposed by Keller (1984) to promote the motivation of Vietnamese EFL e-learners. An English reading course was designed on Moodle platform with the integration of ARCS-based motivational strategies and implemented with the participation of EFL students from University of Foreign Languages, Hue University. 20 students participated in an online Likert-type survey and then some were chosen to attend a follow-up interview. The findings showed that most of the course attendees agreed that the e-learning course had a positive effect on their motivation. It was also revealed that some strategies in each ARCS category (i.e. Attention, Relevance, Confidence, and Satisfaction) had more significant impacts on the students' motivation than the others. In addition, the study results also indicated that among four components of the ARCS Model, the motivational strategies in the Satisfaction category had the most influential effects on students' motivation in the e-learning course.

Key words: ARCS Model, EFL, e-learning, e-learners, motivational design

1. Introduction

Despite many advantageous conditions and rapid growth rates, the development of e-learning in Vietnam is currently facing many challenges two of which include how to decrease the high dropout rates from the e-learning courses and how to promote learners' positive attitudes towards the new learning method. Being passionate about ICT and its benefits in the educational sector, I understand that the emergence of e-learning is an essential tendency of modern education in which people who do not keep pace up with this streamline may be left behind. However, I am also aware of the aforementioned challenges in the implementation of e-learning in Vietnam in general and in my institution in particular. My passion and awareness encouraged me to adopt the ARCS (i.e. Attention – Relevance – Confidence – Satisfaction) Model of Motivational Design developed by Keller (1984) to design an e-learning course for my EFL students at University of Foreign Languages, Hue University and investigate its effectiveness on students' motivation. The rationale for choosing this topic was twofold.

Firstly, I was attracted by the ARCS Model of Motivational Design because of its practicality and systematicality. For one thing, as Keller (1987c) said, the ARCS Model is 'a problem-solving, heuristic approach to motivational design' (p.1). Therefore, rather than describing the nature of students' motivation theoretically, the ARCS Model provides teachers as well as designers with a practical guideline to resolve students' motivational problems with specific strategies. It is also applicable for different instructional modes including face-to-face, blended or e-learning, so teachers can use it in accordance with their particular teaching situations. For another thing, as the ARCS Model was developed on the ground of various motivation theories, it addresses different dimensions of students' motivation thoroughly. Therefore, the influence of instruction on students' motivation can be effectively maximised.

Secondly, the findings from this study may be beneficial for the future development of e-learning in my university in particular and in other Vietnamese tertiary institutions in general. Recently, an e-learning system has been built to serve the purpose of innovating the teaching and learning methods at University of Foreign Languages, Hue University (see the link http://hucfl.hueuni.vn/). All teachers have been encouraged to renew their traditional techniques with the assistance of the new virtual learning environment. However, because of the unfamiliarity of e-learning, many teachers do not know how to design effective e-learning materials which can keep students persistently motivated. Therefore, if the application of the ARCS Model of Motivational Design in the present study is proved effective and appropriate for Vietnamese learners, the model can be suggested as a practical framework for novice e-learning designers. More broadly speaking, the findings are also hoped to have some helpful contributions to the e-learning design in other Vietnamese universities where e-learning is becoming more and more popular in teaching and learning foreign languages, especially English.

2. Literature review

2.1. Motivation and motivation in e-learning

As Dick and Carey (1996) stated, learners' motivation is regarded as the most important factor affecting the success of instruction. The study about the nature of motivation and its roles in education has yielded a fruitful literature. Authors such as Pintrich and Schunk (1996), William and Burden (1997) and Dörnyei (1998) considered motivation as a mental process that involves the instigation and maintenance of action. In the same vein, Keller (2010) said that motivation explains 'what people desire, what they choose to do, and what they commit to do' (p.3). Dörnyei and Ushioda (2011) also agreed with Keller by stating that motivation is responsible for people's choice of a particular action, their persistence with it and their effort expended on it. In other words, it is motivation that determines the direction and magnitude of human behaviour.

According to Cocea and Weibelzahl (2007), learner motivation always has a crucial role in the success of instruction regardless of whether it is delivered in face-to-face classroom, in blended learning, or in e-learning. Many studies have shown a positive influence of virtual learning environment on learner motivation. Rovai and colleagues' (2007) comparison between student motivation in traditional classroom and in e-learning courses revealed that e-learning students tended to be more intrinsically motivated. Kim and Frick (2011), in their study about motivation during online learning, also pointed out that the self-directed e-learning affected student motivation positively. However, although the novelty of technology may make the instruction appealing at the first sight, learners' interest may fade when they get accustomed to these innovative features (Keller &Suzuky, 2004). This explains why despite a large number of initial registrations, the high rate of dropouts in e-learning courses is an undeniable fact (Dupin-Bryant, 2004). In his review of the factors affecting student persistence in e-learning, Hart (2012) said that the decision to drop a course is sometimes unrelated to knowledge but may reflect students' lack of persistence. Therefore, motivation in e-learning settings as well as in traditional learning contexts involves two elements: learners' desire to learn needs to be instigated and their effort in learning needs to be sustained. Unlike traditional classroom and blended learning in which face-to-face interactions with teacher and peers can exert a significant impact on learners' motivation, e-learning relies much on the instructional design as a way to keep learners motivated (Smith, 2008). Therefore, the matter of how to motivate e-learners is the matter of how to design e-learning instructional materials which can promote students' motivation.

2.2. An overview of the ARCS Model of Motivational Design

2.2.1. Definition of motivational design

According to Keller (2010), the ultimate goal of the instructional design is to produce effective and efficient instruction. However, he also argued that instruction cannot be effective if it is not appealing, and conversely, instructional materials can be very appealing without being effective. Discussing what makes the 'best' instruction, Smith and Ragan (2005, p.22) noted that:

The best instruction is that which is effective (facilitates learners' acquisition of the identified knowledge and skills), efficient (requires the least possible amount of time necessary for learners to achieve the goals) and appealing (motivates and interests learners, encouraging them to persevere in the learning task).

This is to say, the instructional design and motivation cannot be separated if the objectives of instruction are to encourage learners to learn and to facilitate their learning. Bearing this in mind, Keller (1983) suggested the term *motivational design* which is concerned with how to improve the appeal of instruction to motivate students.

2.2.2. The ARCS model of motivational design

Working within the boundaries of expectancy-value theory, the ARCS Model assumes that learners are motivated in learning when they know that the learning success is achievable and that the learning outcomes are personally beneficial. Based on this assumption, the ARCS Model aims to provide useful motivational strategies which can be systematically incorporated into the traditional instructional design process in order to solve the motivational problems in various teaching and learning contexts.

The A component in the ARCS Model stands for *Attention* which is also considered as the most preliminary condition for learning process to take place (Keller, 1987a). It is said that learning is impossible if learner is inattentive; therefore, 'the motivational concern is for getting and sustaining attention' (Keller, 2010, p.45).

The letter R in ARCS represents the second motivational category that is *Relevance.* Keller (2010) pointed out that a sense of relevance occurs when the learning content is usefully and purposively related to learners' 'goal choice, psychological needs and motives, future orientation, interests, intrinsic motivation, personal and social values, and emotional states' (p.99).

The C element of the ARCS Model is the representative of the *Confidence* category. The concept of confidence, according to Keller (2010), refers to 'people's expectancy-related beliefs regarding the degree to which they can predict and even control the outcomes of their behaviour' (p.135). The fear of failure can dismiss learners' motivation in the learning process despite its inherent interest and relevance to them.

The S category which stands for *Satisfaction* is defined as 'feelings of mastery and pleasure of having succeeded at a task which was meaningful and challenging' (Keller, 2010, p.166). The sense of satisfaction is believed to be obtained if the first three motivational conditions are met (ibid.).

2.2.3 ARCS-based motivational strategies

Keller (2008) realized that in order for learners to be motivated in learning, four necessary motivational conditions need to be satisfied. Therefore, he developed four sets of motivational strategies in accordance with four motivational categories to promote learner motivation. Each set of

the motivational strategies has been divided into different subcategories which will be summarised in the following table:

Table 1: ARCS-based motivational strategies

Categories	**Sub-categories**	**Motivational strategies**	**Categories**	**Sub-categories**	**Motivational strategies**
Attention	Perceptual arousal	*Incongruity* *Conflict* *Concreteness* *Humour*	**Confidence**	Learning Requirement	*Learning Requirement*
	Inquiry arousal	*Inquiry* *Participation*		Success Opportunities	*Difficulty* *Expectations*
	Variability	*Variability*		Personal Responsibility	*Attributions* *Self-confidence*
Relevance	Goal Orientation	*Present Worth* *Future Usefulness*	**Satisfaction**	Intrinsic satisfaction	*Natural Consequences* *Negative Influence avoidance*
	Motive Matching	*Need Matching* *Choice*		Rewarding Outcomes	*Unexpected Rewards* *Positive Outcomes*
	Familiarity	*Experience* *Modelling*		Equity	*Scheduling*

2.2.4. Systematic process of motivational design

An important component of The ARCS Model is a systematic process of the motivational design consisting of ten steps 'which have been implemented in many different cultures and schools at all levels' (Keller, 2010, p. 194). These steps are organized into four generic design phases including *define*, *design*, *develop* and *evaluate* (Keller, 1987a). The brief overview of the motivational design process is illustrated in the following figure:

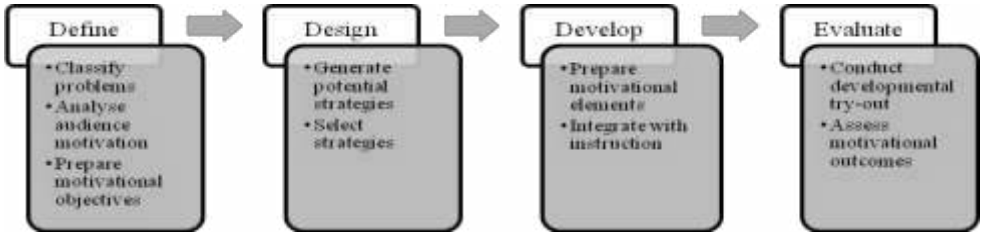

Figure 1: Systematic process of motivational design (adapted from Keller, 1987a)

2.3. Previous studies

The ARCS Model of Motivational Design has been applied and validated in many multicultural contexts and in different instructional modalities (Keller and Suzuki, 2004). However, as the current study is merely concerned about the application of this model in e-learning settings, much attention will be paid to the previous studies which similarly considered the use of the ARCS Model in designing e-learning instruction in order to enhance learners' motivation.

Chang and Lehman (2002) conducted an experimental study to examine the effects of the Relevance component of the ARCS Model in the computer-based interactive multimedia (CBIM) program on enhancing the intrinsic motivation of EFL learners in Taiwan. The study showed that students who learned the CBIM program with an embedded relevance motivational strategy achieved higher scores than students who learned from the same program without this kind of strategy in the motivation perception survey.

Marshall and Wilson (2013) integrated several ARCS-based tactics into an animal care e-learning module in order to motivate the San Diego Zoo Global's e-learners. They highlighted five best-practice tactics including case studies, rich visuals, module organization, interaction, and learning guidance and described the alignment of each to ARCS model components. Their work showed a practical application of the ARCS Model of Motivational Design to the real learning context and a good balance of four motivational components. Additionally, they pointed out that one tactic can help to address different motivational problems at the same time instead of solving each problem at a time.

Prior to Marshall and Wilson (2013), Chanlin (2009) also integrated motivational strategies of four ARCS categories into the instruction in order to promote learners' motivation. The study was conducted with the participation of 40 Taiwanese students who attended a web-based computer ergonomics course lasting for 12 weeks. In the implementation of the course, students' motivational problems were identified so that appropriate instructional adjustments based on motivational tactics of the ARCS Model could be made in order to improve the situations. The findings revealed a positive correlation between the number of students' postings in web-based discussions and their final achievements. The study then concluded that the students who were more engaged in the discussions were more likely to perform better.

2.4. Research gaps

The previous studies mentioned above have shed light on how the ARCS Model of Motivational Design have been applied in the practice of e-learning instructional design. However, these studies have also revealed some research gaps which need more exploration and investigation in order to have a better insight into the effects of the ARCS motivational strategies in promoting e-learners' motivation. Firstly, the ARCS Model has been validated in many countries but it seems to be a novel concept in the Vietnamese context. Secondly, the previous studies either applied a certain component of the ARCS Model or involved in a certain stage of its motivational design process, so there is a need to know whether a systematic application which involves all of four ARCS components and includes all of four motivational design stages would be effective. Thirdly, although this model has been applied in many disciplines, there have been not many applications in English Language Teaching. Lastly, despite the fact that many researchers have been keen on the use of the ARCS Model in instructional design in general and e-learning design in particular, there has been no serious attempt to determine the relationships among four components of the model and compare the effects of these different components on the promotion of learners' motivation.

2.5. Research objectives

In order to fill the aforementioned research gaps, this study aims to investigate the effectiveness of applying Keller's (1984) ARCS Model of Motivational Design to motivate Vietnamese EFL learners in the e-learning context. This broad objective will be broken down into two smaller ones. Firstly, the study attempts to identify the general effects of applying the ARCS Model of Motivational Design on the students' attitudes towards the e-learning course. Secondly, it also tries to find out the specific effects of this model on individual aspects of students' motivation.

Therefore, the current study aims to seek the answers to three following questions:

1. What is Vietnamese EFL e-learners' general perception about the e-learning course designed with the application of the ARCS Model of Motivational Design?

2. Which strategies in each category of the ARCS Model of Motivational Design are the most effective in motivating Vietnamese EFL e-learners?

3. Which component of the ARCS Model of Motivational Design in the e-learning course has the most effective impact on Vietnamese EFL e-learners' motivation?

3. Research methods

3.1. E-learning course design based on the ARCS Model

As aforementioned, this study applied the ARCS motivational design process and integrated ARCS-based motivational tactics proposed by Keller (1984) into e-learning instruction design in order to examine whether this application is effective in motivating Vietnamese e-learners. The e-learning course, therefore, can be considered as part of the data collection as the research participants responded to the survey and the interviews based on their experience in the course. The application of the ARCS Model in the e-learning course design is specifically described as follows:

Stage 1: Define

At the very first stage, an announcement about the e-learning reading course was made so that students who were interested in participating in the course could register through an online registration form. A pre-course survey was designed and delivered to students online in order to collect information about their demographics, their English level, their needs and expectations from the course, their accessibility to technology and the Internet. These pieces of information were useful to define students' objectives to take part in the course; hence, help the course designer to maximize the effectiveness of the course in promoting students' motivation.

Stage 2: Design

Based on the information collected from the pre-course survey, the objectives of the web-based reading course were determined. In reference to Keller's ARCS Model, five strategies in each ARCS motivational category were selected based on their feasibility and compatibility with the e-learning design, specifically the Moodle platform. The strategies selected to be used in the e-learning course design are summarized in the following table:

Table 2: ARCS motivational strategies used in the e-learning course design

ARCS categories	**ARCS motivational strategies and tactics used in the e-learning course**	
Attention	Conflict	Use debatable topics such as *technology* (Lesson 1), *family holidays* (Lesson 2), *food and health* (Lesson 4) for reading lessons
	Variability	Vary the online activities such as *games*, *pictures*, *videos* and *various*

		quizzes and interaction patterns such as teacher-student (using *Dialogue*), student-student (using *Discussion*), and teacher-students (using *Forum*).
	Concreteness	Give specific instruction for each activity in each lesson
	Inquiry	Build problem-solving activities through critical warm-up discussions
	Participation	Engage students' participation in discussions and games
Relevance	Experience	Use the topics which are popular for students based on their preference and activate their prior knowledge through warm-up activities before they read
	Present worth	State explicitly how the course could help develop students' reading skills which are currently weak
	Need matching	Use various multimedia materials to suit different learning styles such as pictures, videos, games, lively course interface, etc.
	Future usefulness	Vary the test-oriented format of reading quizzes which will help students prepare for their later proficiency tests such as *True/False*, *multiple choice*, *matching*, etc.
	Choice	Offer students choices on how they can learn the lessons such as *time*, *place*, *order of activities*
Confidence	Expectation	Ask students to set the goal for themselves in each lesson (using *Checklist* function of Moodle)
	Learning requirements	Set clear objectives for each lesson so that students know what they are expected to do
	Difficulty	Grade the difficulty levels of reading tasks
	Confidence	Encourage students' independent learning through scaffolding feedback to facilitate their reading (Use *Scribble* application, *Page* function of Moodle)
	Attribution	Give students chances to reflect on their effort in learning through self-reflection activities (Using *Journal* function of Moodle)
Satisfaction	Rewarding outcomes	Provide students with congratulatory feedback on their performance in each lesson (Using automatic feedback in *Quiz* and personal feedback via *Dialogue*)
	Natural consequences	Ask students to apply what they have gained from the reading text into follow-up discussions and post-reading activities
	Avoidance of negative influence	Create a pressure-free learning atmosphere through non-judgement quizzes and friendly discussions
	Scheduling	Repeat reinforcement at fluctuating, non-predictable intervals
	Positive outcomes	Positively affirm the value of what they have learned in the course

Stage 3: Develop

The five most popular topics based on the result of the pre-course survey were chosen for the 5-lesson reading course designed on Moodle (link to the course: https://ereading.gnomio.com/). Authentic English texts were collected from different sources including well-known newspapers, blogs and so on and annotated with the use of Scribble application to provide students with necessary scaffolding guide. Pictures and videos related to each topic were also prepared to include as warm-up activities at the beginning of each lesson. The selected motivational strategies were then incorporated in the development of the online reading course on Moodle platform. The development of the online

reading course was an ongoing process and was modified every week to guarantee that it matched students' needs. Following are some illustrations of the online course:

Course home page

One sample reading lesson

Stage 4: (Implement and) Evaluate

The online reading course was implemented with the participation of 20 students who registered during the period from March to May 2016. For each lesson, students were informed when it was opened and when it was supposed to be completed through announcements in a closed group on Facebook. The researcher, and also the online instructor, interacted regularly with students on the course platform in order to reply to their discussions and support them with what they needed. After the course finished, the data collection was conducted in order to investigate the effects of the course on students' motivation from students' perspectives.

3.2. Research Design

In order to collect participants' opinions about the course, a study was conducted with the adoption of a mixed method approach which is seen as 'a third approach in research methodology' (Dörnyei, 2007, p.42). This research adopted the 'QUAN -> qual' model suggested by Dörnyei (2007) which means the quantitative findings attained from a survey would play a primary role in answering

the research questions whereas the qualitative responses in the follow-up interviews would provide supplementary data to support for the survey results.

3.3. Participants

The participants of this study were recruited based on both convenience sampling which is defined as a way of choosing the research participants to whom the researcher has an easy access (Cohen et al., 2011) and criterion sampling which means the participants from whom the data were collected also had to meet several predetermined criteria (Dörnyei, 2007). Firstly, they had to be English major students of English Department. Secondly, these students needed to attend the online reading course which was particularly designed to serve the purpose of this study. These criteria were predetermined in order to keep the study's focus and assure the reliability of participants' responses.

All 20 participants are in their third and last academic year at University of Foreign Languages, Hue University, Vietnam. They are in their early twenties and have been learning English as a foreign language for approximately 10 years. These EFL students, who have completed their first two foundation years at university to develop their skills and knowledge of English language, are now specializing in different majors including English Language Teaching, Interpretation, and Translation and so on. Although their English proficiency is expected to be at upper-intermediate or above, some of these students still have as low English proficiency as intermediate level.

3.4. Instruments

The research was conducted with the employment of two data-collection instruments. A *web-based questionnaire* including twenty Likert-type items with four responses (i.e. strongly disagree, disagree, agree, strongly agree) was designed to collect quantitative data from the research participants. The twenty statements were designed and divided into four categories based on the ARCS Model of Motivational Design and in reference to the Instructional Material Motivational Survey (IMMS) both developed by Keller (1984). An *email interview* was structured to include six open-ended questions aiming to collect the participants' opinions about the e-learning course. Moreover, as mentioned in the research design section, these interview questions were intentionally designed to support the quantitative data collected from the web-based survey.

3.5. Data collection and data analysis

The procedures of data collection were totally conducted online in a sequential order. The questionnaire was converted into an online version using Google Form and shared with the participants through emails and Facebook. The participants followed the link, completed the questionnaire and finally submitted it. After students finished the survey, six of them were chosen to participate in the follow-up interviews based on the report of their participation in the online course.

After the data were collected, two sources of data were first separately analysed.While the quantitative data from the survey were calculated with the assistance of SPSS, the qualitative data from the interviews were coded and labelled in reference to the motivational strategies which Keller (1987a) suggested in the ARCS Model. These two sources of data were then supportively combined and interpreted to answer the research questions in order.

4. Findings and discussions

The quantitative data collected from the survey were analysed with the assistance of SPSS to identify the central tendency in the responses. The overall reliability of all the scales on standardized Cronbach's Alpha was 0.820 (n=20 on 20 items) and the internal consistency for all the survey scale was 0.807, which suggested a good reliability of the survey result.

4.1. Research question 1: *What is Vietnamese EFL e-learners' general perception of the e-learning course designed with the application of the ARCS Model of Motivational Design?*

In order to answer the first research question, frequency distribution was chosen to report the survey data because it can show the general picture of the participants' responses; hence, it can facilitate the interpretation of the findings. The following diverged stack bar chart shows the tendency in the participants' responses to the survey:

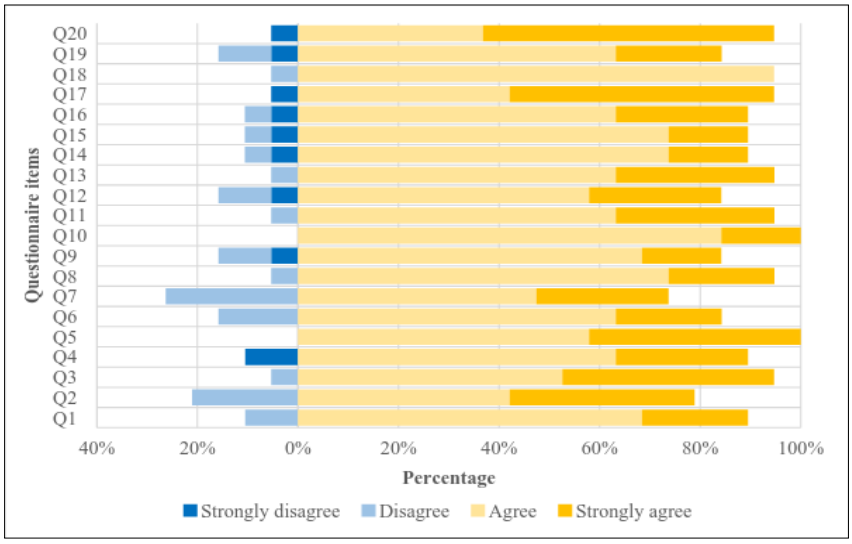

Figure 2. Frequency distribution of the participants' responses to the survey items

The area on the right of 0% point in Figure 1 represents the percentage of respondents who agreed and strongly agreed with the items provided in the survey while the one on the left represents the percentage of those who disagreed and strongly disagreed. It is obvious from the chart that the representatives on the right are much more dominant than the ones on the left. Generally, this frequency distribution of participants' responses pointed out that most of the students who attended the course were in agreement with all of the survey items which were written in favour of the e-learning course design. In addition, the responses of 6 students in the follow-up interviews also revealed a similar finding to the first research question because when asked whether they think the e-learning course was generally appealing, all of 6 participants answered 'yes'.From the survey and follow-up interview findings, it can be inferred that Vietnamese EFL e-learners generally had a positive perception of the e-learning course designed with the application of the ARCS Model of Motivational Design.

4.2. Research question 2: *Which strategies in each category of the ARCS Model of Motivational Design are the most effective in motivating Vietnamese EFL e-learners?*

4.2.1. The most effective strategies in Attention dimension

Table 3: Summary of the mean scores in the Attention category

Category	Statements	Mean
Attention	1. The course content provided me with some surprising information. (*conflict*)	3.1
	9. Thanks to a variety of the multimedia materials, my attention was maintained through the course. (*variability*)	2.95
	19. I had chances to participate in many discussions through the course. (*participation*)	3.0
	13. I could understand the instructions in each lesson clearly. (*concreteness*)	3.25
	14. The course provided me with opportunities to think more critically. (*inquiry*)	3.0

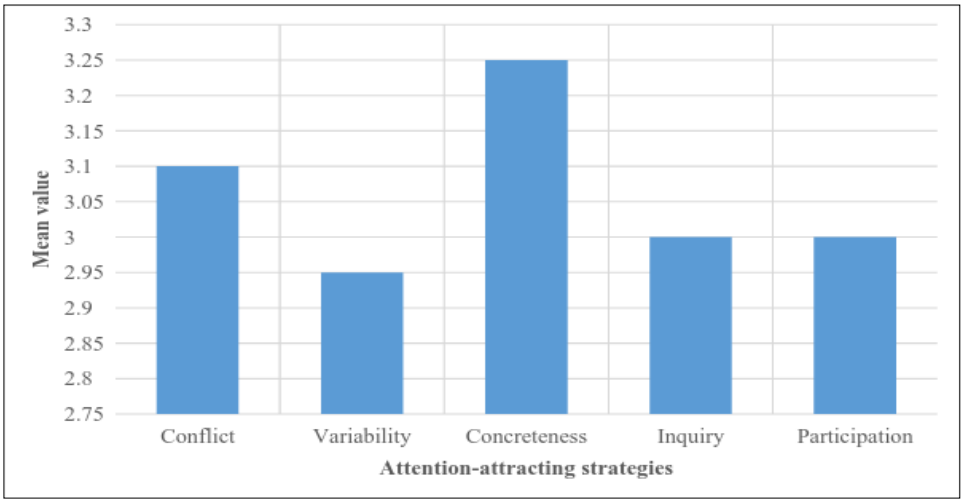

Figure 3: Learners' perceptions of the attention-attracting strategies in the online course

The survey result indicates that students most highly appreciated the clarity of the instructions in the e-learning course which helped them to understand what they were expected to do in each activity. Keller (1987a), in his ARCS Model, mentioned the concreteness strategy including such activities as showing visual representations and giving examples of any important concepts, as well as using content-related illustrations. However, I would argue in the context of the e-learning reading course that the concreteness should be also shown through the use of unambiguous language to instruct students how to perform the tasks. Therefore, the highest mean score in the concreteness item points out that the e-learning course was effective in terms of providing clear instructions. Meanwhile, the low mean score in the variability implies that the materials and activities in the e-learning course might not be various enough to maintain students' attention.

However, the interview data revealed some surprisingly different results. No interviewee mentioned anything concerning the concrete instructions of the e-learning course when they justified their answer to the question '*Do you think the online course was interesting?*'. Perhaps, although most of the students agreed in the survey that the instructions of the e-learning lessons were clear for them to understand, different in-depth justification from the interviewees reveals that students might perceive this clarity as a necessary rather than an interesting factor of the course. In contrast, a half of the interview participants focused on the variability of the learning materials in their responses. Besides, two participants said that their opportunities to participate in such online activities as discussions and games also kept them attentive in the course. In terms of the course content, two out of six interviewees evaluated that the topics and reading texts were interesting to them. Noticeably, rather than mentioning any ARCS components of the e-learning course design, some interviewees

considered the technology element of the course as a both attractive and distractive factor which affects their attention.

4.2.2. The most effective strategies in Relevance dimension

Table 4: Summary of the mean scores in the Relevance category

Category	Statements	Mean
Relevance	11. I could relate the reading texts to what I have known and done in my life. (*experience*)	3.25
	12. I think the content of the course was worth learning. (*present worth*)	3.05
	8. The online course was suitable for my learning styles.(*need matching*)	3.15
	3. What I learned from the course will be useful for me in the future. (*future usefulness*)	**3.35**
	15. I could freely decide how to achieve my goals in the course. (*choice*)	**3.0**

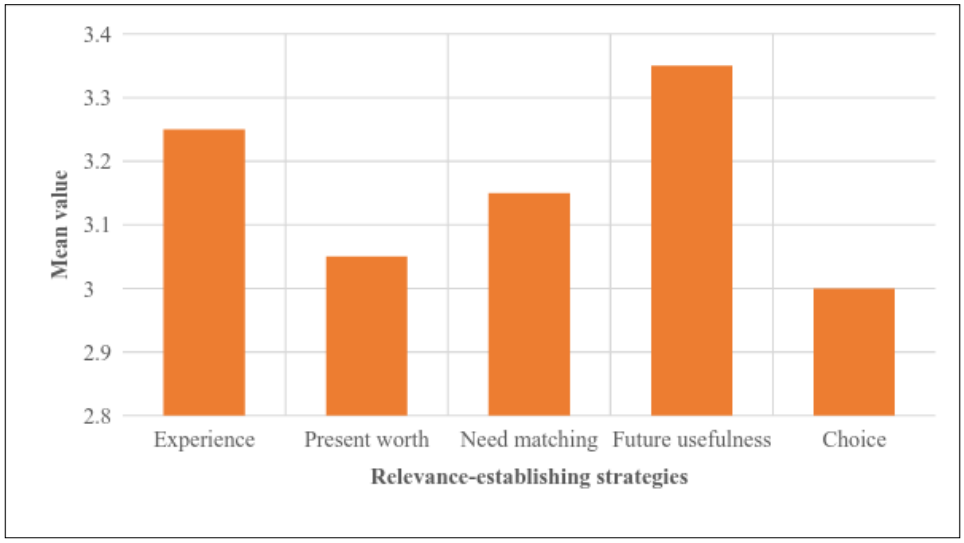

Figure 4: Learners' perceptions of the relevance-establishing strategies in the online course

As can be seen from Table 3 and Figure 3 above, the majority of students who attended the e-learning course agreed that what the course provided was useful for them in the future. According to Keller's model, the future usefulness of the instructions, along with its present worth, is related to students' goal orientation. In other words, students will be motivated to be persistent in the course if they perceive it to be beneficial for them now or later. Although the future usefulness of the e-learning course received the most agreement from the survey participants, surprisingly the interviewees paid more attention to the present worth when they were asked to give examples of the course relevance. Specifically, a half of the interviewees said that the course was relevant to their current study. Nobody mentioned how useful the course was for their later exams or proficiency tests, which is quite different from the survey findings. Meanwhile, the low mean score in the choice strategy is similar to what the interviewees mentioned in their in-depth explanation. Accordingly, the only choice which 2 out of 6 interviewees appreciated in the course was in terms of time flexibility. Considering the other respects of the e-learning course relevance, some interviewees indicated that the course also matched their learning needs.

4.2.3. The most effective strategies in Confidence dimension

Table 5: Summary of the mean scores in the Confidence category

Category	Statements	Mean
Confidence	6. I enjoyed setting my own goals before each lesson.(*expectation*)	3.05
	7. The order of tasks in each lesson was appropriate for me to achieve. (*difficulty*)	**3.0**
	4. The course allowed me to become increasingly independent in learning. (*self-confidence*)	3.2
	17. I believe that I could have been more successful in the course if I had invested more effort.(*attribution*)	**3.45**
	16. The objectives of each lesson helped me to understand what I was expected to do. (*learning requirements*)	3.1

Figure 5: Learners' perceptions of the confidence-building strategies in the online course

It is evident from the chart that there was the most agreement among students that their successful performance in the e-learning course depended greatly on their own ability and efforts rather on the other external factors such as task difficulty and luck. Keller (2010) emphasised the importance of the positive attribution to students' motivation by saying that 'if people have confidence in their ability', they will be less anxious and more 'persistent in working to achieve their goals' (p.151). The above finding reveals that the strategy to promote students' self-attribution through self-reflection activities in the e-learning course was effective to keep students motivated.

However, it is worth noticing that although all of the interviewees agreed that they felt confident in the e-learning course, they did not mention their self-attribution in their explanation. Instead, they explained how their self-confidence was gradually built up through the online course participation. In fact, according to Keller (1987a), both self-attribution and self-confidence strategies share the same objective that is to promote students' personal responsibility for their own learning. Therefore, although the findings from the survey about their perception of self-attribution and what the participants revealed in the interviews about their self-confidence seem divergent, they are actually quite related and supportive to each other. In regards of the task difficulty order which received the least agreement from the survey respondents. It is undeniable from the survey result that the majority of the course attendants might prefer the learning tasks in the e-learning course to have been graded in a more achievable manner so that they could feel more encouraged to keep up with the learning. The interviewees also briefly referred to the clear learning requirements and expectations before the

lessons as other factors which increased their confidence in the e-learning course, but not as noticeably as these three strategies mentioned above.

4.2.4. The most effective strategies in Satisfaction dimension

Table 6: Summary of the mean scores in the Satisfaction category

Category	Statements	Mean
Satisfaction	10. I am pleased with the schedule of the online course. (*scheduling*)	3.15
	5. My teacher's feedback after each lesson helped me feel rewarded for my effort. (*rewarding outcomes*)	3.45
	18. I could apply what I had read in the text immediately to discuss after the reading tasks. (*natural consequences*)	**2.95**
	2. I found the learning environment of the online course anxiety-free. (*negative influence avoidance*)	3.15
	20. I am satisfied that I learned many useful things from the online course. (*positive outcomes*)	**3.65**

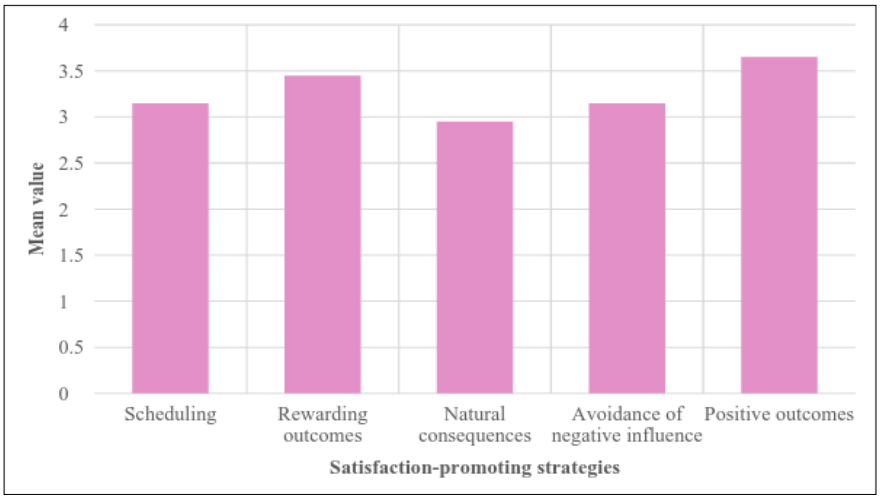

Figure 6: Learners' perceptions of the confidence-promoting strategies in the online course

Unlike the other three ARCS categories in which the survey findings and the interview findings were relatively contradictory, there was a consistent result which these two data resources revealed in the Satisfaction dimension. It is statistically shown in the above table and chart that students felt the most satisfactory with the positive outcomes which the e-learning course provided. Meanwhile, the lowest mean score in the natural consequences strategy may indicate that there should have been more opportunities for students to apply what they had learned from the e-learning course to the reality.

These results are similar to what the interviewees said about the satisfactory factors of the e-learning course. Accordingly, all of the six interviewees expressed that they felt satisfied with the positive outcomes they had gained from the course. As Keller (2010) emphasised, the pride of accomplishment and the value of the learning experience could nurture and sustain students' intrinsic interest in learning. Therefore, it can be said that the positive outcomes play a significant role in students' intrinsic satisfaction. However, as can be seen from the above chart, the course attendants also paid much attention to the rewarding outcomes which can extrinsically motivate them to engage in learning. Meanwhile, 4 out of 6 interviewees also focused on two different sources of rewarding

outcomes in their responses: high result and encouraging feedback. These findings from the survey and interviews are consistent with Keller's (2010) belief that intrinsic satisfaction should go hand in hand with extrinsic reinforcements in order to keep students persistently motivated in the instruction. In addition to these two factors, the interviewees also mentioned the negative influence avoidance and natural consequences in their answers, but not very much. No interviewee mentioned the tactic used in the e-learning course to encourage students to apply what they had read in the reading texts to the post-reading discussions. This is to say, perhaps, the opportunities to apply the reading content to the discussions were not sufficient for students, so they did not appreciate them. Otherwise, as Keller (2010) stated, 'it isn't always possible to put the new knowledge or skills to use immediately' (p.53), so students might have needed more time for the knowledge application. Noticeably, in the follow-up interviews, no participant mentioned the scheduling strategy in their answers although it also received a relatively high agreement in the survey.

It can be summarised in this section that the survey result and interview responses provided relatively divergent findings to the research question 2 which was concerned about the effective strategies in each ARCS category. It is hard to give a conclusive answer to this question based on either of the two data sources, so it may be more reasonable to consider combining both the survey respondents and the interview participants' opinions. In addition to indicating which motivational strategies were applied effectively in the e-learning course to motivate students, the findings also revealed the unsuccessfully used strategies which require more improvements in order to increase the general effectiveness of the ARCS Model in design the e-learning course.

4.3. Research question 3: *Which component of the ARCS Model of Motivational Design in the e-learning course has the most effective impact on Vietnamese EFL e-learners' motivation?*

This section aims at finding out which of four motivational components of the ARCS Model in the e-learning course has the most effective impact on the e-learners' motivation in general. In order to fulfil this aim, the mean scores of four categories, i.e. Attention, Relevance, Confidence and Satisfaction, were calculated based on the mean scores of 20 questionnaire items. The results of this calculation are presented in the following table and then illustrated in the bar chart:

Table 7: Summary of the mean scores in four ARCS categories

	Attention	**Relevance**	**Confidence**	**Satisfaction**
Mean	3.0600	3.1600	3.1600	3.2700
N	5	5	5	5
Std. Deviation	.11937	.14318	.17819	.27749

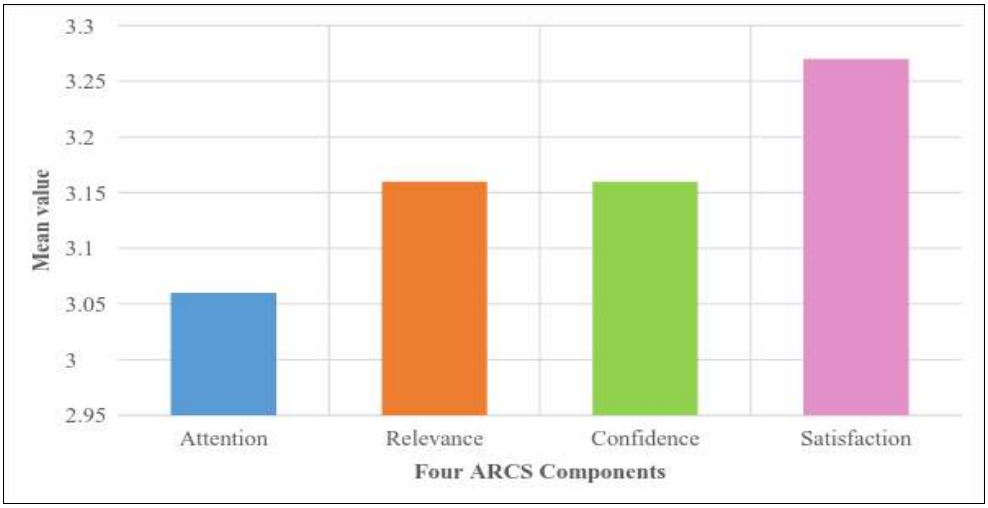

Figure 7: Comparison of the effectiveness of four ARCS motivational components on e-learners' motivation

The finding indicated that when the ARCS Model was applied in the design of the e-learning course, four of its components did not have equal roles in motivating students to participate in the learning activities. Specifically, the strategies used to promote students' satisfaction about their learning experience seemed to work the most effectively whereas the strategies used to attract students' attention to the course were perceived to have low effectiveness. Moreover, the strategies used to establish the relevance between the course content and students' personal needs were evaluated as effective as the ones used to build their confidence in learning.

Moreover, in order to have a deeper insight into the students' viewpoints on the roles of the four ARCS components in motivating them in the e-learning setting, the researcher explicitly required six interviewees to rank these four factors from 1 to 4 based on their order of importance, in which 1 means the most important and 4 means the least important. According to the ranking result, 3 out of 6 interviewees considered Relevance as the most important component in the ARCS Model where as 2 interviewees ranked Attention as the most significant one. The other interviewee thought the number 1 component should be Satisfaction. This result seems different from what was found in the survey.

In regards of the expectancy-value theory of motivation on which the ARCS Model was developed, it can be inferred from the mismatch above that, the e-learning course was successful in creating for students a positive expectancy about both their efficacy and the learning outcomes through the use of Confidence and Satisfaction strategies. However, in terms of the value aspect, students seemed to desire a more valuable online course which is not only more interesting to capture their attention but also more relevant to match their current motives and goals. This inference is interestingly similar to the conclusive statement in relation to the findings of the research question 1. Accordingly, in the justifications why the e-learning course was appealing to them, the interviewees also paid much more attention to the value of the course than their own expectancy. Therefore, it can be concluded that in order to promote students' motivation to participate persistently in an e-learning course, it is important to make students realise how valuable the learning experience can be through the use of appropriate strategies to address the Attention and Relevance dimensions of students' motivation.

5. Conclusion

Although this study was conducted on a small scale with a humble number of participants, its findings suggested some significant implications for both e-learning EFL teachers and material designers. For the other EFL teachers who intend to apply the ARCS Model of Motivational Design in their e-learning contexts, there are also some helpful suggestions to consider. Firstly, it is important to apply this model in a systematic way so that the measurement of its effectiveness can be more accurate and reliable. Moreover, the chosen motivational strategies should be feasible and suitable for the virtual learning environment on which e-learning courses will be built. Last but not least, in order to evaluate the effectiveness of applying the ARCS Model in a certain e-learning course, both formative and summative assessment can be done. Additionally, as the study findings pointed out that the value of online learning was perceived as a more important factor which motivated students to be engaged in the e-learning course, more attention should be paid to this aspect by the course designers. For e-learners who are expected to be highly independent and responsible for their own learning in the virtual environment, the benefits of the course should be 'advertised' through the use of strategies belonging to the first two categories of the ARCS Model, i.e. Attention and Relevance. It would be recommended that the ARCS Model applied in the e-learning setting should be like ARCS so that the distinction between the roles of the four motivational categories could be more obvious.

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KHẢO SÁT TÍNH HIỆU QUẢ CỦA VIỆC ÁP DỤNG MÔ HÌNH THIẾT KẾ TẠO ĐỘNG LỰC ARCS VÀO VIỆC THÚC ĐẨY ĐỘNG LỰC HỌC CỦA CÁC HỌC VIÊN VIỆT NAM HỌC TIẾNG ANH TRONG MÔI TRƯỜNG TRỰC TUYẾN

Tóm tắt: Nghiên cứu nhằm mục đích khảo sát tính hiệu quả của việc áp dụng Mô hình thiết kế tạo động lực ARCS của Keller (1984) vào việc thúc đẩy động lực học của các học viên Việt Nam học tiếng Anh trong môi trường trực tuyến. Một khóa học kỹ năng đọc được thiết kế trên Moodle dựa trên việc vận dụng các chiến lược tạo động lực của Mô hình ARCS và được triển khai với sự tham gia của các sinh viên chuyên ngành Tiếng Anh tại Trường Đại học Ngoại ngữ, Đại học Huế. 20 sinh viên tham gia trả lời một bảng khảo sát được thiết kế theo định dạng Likert và một số sinh viên được chọn để tham gia phỏng vấn. Kết quả của nghiên cứu cho thấy, phần lớn những sinh viên tham gia vào khóa học đồng ý rằng khóa học trực tuyến có ảnh hưởng tích cực lên động lực học của họ. Nghiên cứu cũng chỉ ra rằng một số chiến lược được sử dụng trong mỗi thành tố của Mô hình ARCS (bao gồm *A-Sự chú ý*, *R-Sự liên quan*, *C-Sự tự tin* và *S-Sự hài lòng*) có tác động quan trọng lên động lực của người học hơn những chiến lược khác. Bên cạnh đó, theo kết quả nghiên cứu, trong số các thành tố của Mô hình ARCS, những chiến lược tạo động lực thuộc nhóm *Sự hài lòng* có ảnh hưởng lớn nhất đến động lực học của người học trong khóa học trực tuyến.

Từ khóa: EFL, Mô hình ARCS, người học trực tuyến Thiết kế tạo động lực, học trực tuyến