Research for proposing the subcategories of the volitional element for the ARCS-V model

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ABSTRACT

In this paper, the authors discuss the significance of proposing the subcategories of the volitional elements for the ARCS-V model which has been expanded from the ARCS model by John M. Keller recently. There are some steps for motivating learners. One earlier step is to make learners form intention to implement for a goal, and the next is to have them keep their volition until they reach the goal. Three categories for each element of Attention, Relevance, Confidence and Satisfaction which provides some hints for instructors and learners have been identified in the ARCS model, but any particular category for the volitional element has not been identified yet according to the authors' research while Keller pointed out that 'commitment' and 'action control' will be the key factors for the volitional phase of learning. Refer to these points, volition-related researches are reviewed. One of these is Kuhl's 'action control theory' that he discussed about 'motivation', 'action control', and 'performance control' to try to explain and predict human action. All through these research reviews, the authors pick up some keywords to classify categories for volitional element of the ARCS-V model and then attempt to outline practical hints which instructors and learners can use. The proposal and the hints for volitional elements are going to be described as practical as possible, so that it allows instructors and learners to use the hints easily and they will come close to meet successful outcomes. The authors discuss if the proposal can be one of resources to make the ARCS-V model more persuasive in the volitional phase at learning. The implications of the findings at the proposal are also discussed. It is our hope to contribute to the ARCS-V model research and all the classrooms where there are motivational problems to be solved.

Keywords: ARCS model, ARCS-V Model, motivation, volition, intention

INTRODUCTION

A variety of researches regarding the motivational problems have been done for these years, and many theories and models are constructed and introduced as outcomes from the researches (Uebuchi, et al, 2004). The ARCS model, which is one of the most popular instructional design (ID) models and is known as a model directly dealing with the attractiveness of the instruction and the learner's motivation, was advocated by Keller in1983 and introduced to Japan in 1987 (Suzuki, 2010). Since then, many ARCS-related researches have been done in Japan and 34 papers which included analytical, descriptive, prescriptive and evaluation related studies were published in 15 years from 1995 to 2010 (Suzuki et al, 2010). One of the current characteristic studies is that Nakajima et al (2010) expanded the ARCS model

by adding another element of Assistance & Tools (AT). In the model called The ARCS+AT model, faculty at a university are taken as "a learner" for utilizing e-learning, the university will assist them from a viewpoint of motivation with a checklist and some tools which the model provides. The ARCS+AT model is aimed to provide a framework for solving issues of utilizing e-learning at universities.

Regarding the expansion of the ARCS model, it was started by the ARCS model proponent, Keller (2008) and is ongoing. In the expanded model called the ARCS-V model, the category of volition is newly focused. The motivation that a learner once gets will be expected to last until he/she gets to the goal but it will be often interfered by many factors, so the volition should be assisted or guided properly. The ARCS-V model integrated the volitional point of view into the original ARCS model. Although it was expanded, the study for that is not done much when comparing to that of the ARCS model (Suzuki, 2010), so the purpose of this paper is to explore the detail of the ARCS-V model, reviewing related references and discussing about proposing the subcategories of the volitional category.

THE ARCS MODEL AND ITS EXPANSION

It is the design process that is built into the ARCS model that makes it a practical, application-focused theory instead of being purely a descriptive or prescriptive theory. (Keller, 2009). Keller integrated a large amount of motivation-related concepts and theories into four categories of ARCS and combined them with the systematic approaches of designing motivation for learning. This allows the ARCS model to be useful for wide area of teaching and learning, so that the ARCS model provides instructors and learners opportunities and tools not only for diagnosis of the cause of the motivational problems in a class, but also for strategies for solving them.

As described above, the ARCS model consists of four categories; Attention, Relevance, Confidence and Satisfaction. Each category is constructed with the theoretical evidence, and has subcategories which are aimed to provide instructors practical hints for their issues. Referring to Keller (2009), the four categories of the ARCS model and subcategories for each are shown in **Table 1**. To show more information about the ARCS model, process questions for instructors who will use the ARCS model are also described.

Table 1. Four categories of the ARCS model and subcategories and process questions (Keller, 2009)

Category	Subcategories	Process question for Instructor
Attention	A-1 : Perceptual Arousal	What can I do to capture their interest?
	A-2 : Inquiry Arousal	How can I stimulate an attitude of inquiry?
	A-3 : Variability	How can I maintain their attention?
Relevance	R-1 : Goal-Orientation	How can I best meet my learner's needs? (Do I know their needs?)
	R-2 : Motive Matching	How and when can I link my instruction to the learning styles and personal interests of the learners?
	R-3 : Familiarity	How can I tie the instruction to the learners' experiences?
Confidence	C-1 : Learning Requirement	How can I assist in building a positive expectation for success?
	C-2 : Success Opportunities	How will the learning experience support or enhance the learners' beliefs in their competence?
	C-3 : Personal Control	How will the learners clearly know their success is based upon their efforts and abilities?
Satisfaction	S-1 : Natural Consequences	How can I encourage and support their intrinsic enjoyment of the learning experience?
	S-2 : Positive Consequences	What will provide rewarding consequences to the learners' successes?
	S-3 : Equity	What can I do to build learner perceptions of fair treatment?

Attention

In the attention category which aims to catch learner's interests, some concepts of arousal theory, curiosity, boredom, and sensation seeking are represented in the term of "attention". Physiologically-based & cognitively-based curiosity (James, 1890), specific exploration & diversive exploration (Berlyne, 1965), sensation seeking (Zuckerman, 1979) and so on are integrated into this category. Then, "Perceptual Arousal", "Inquiry Arousal" and "Variability" were selected as subcategory titles which will provide strategies for catching learner's attention (Keller, 2009).

Relevance

In the relevance category which aims to make learners realize that it is related to themselves and feel that it is worth challenging, the value-related concept from the Expectancy-Value theory is dealt. The Expectancy-Value theory appears when the outcomes that learners will meet can be desirable and they feel they can do it. Tolman's theory which explained that behavior is purposeful and is persistent, patterned, and selective (Tolman, 1932), three needs: achievement, affiliation, & power (McClelland, 1976), absolute interest (Schank, 1979) and so on are integrated into this category. Then, "Familiarity", "Goal-orientation", and "Motive Matching" were selected as subcategory titles which will provide strategies for having learners realize the relevance (Keller, 2009).

Confidence

In the confidence category which aims to reduce learners' uneasiness and encourage them to expect for their success in the near future, personal control is one of the most important concepts. Locus of control (Rotter, 1966), origin-pawn concept (deChams, 1968), self-efficacy (Bandura, 1977) and so on are integrated into this category. Then, "Learning Requirement", "Success Opportunities", "Personal Control" were selected as subcategory titles which will provide strategies for encouraging learners to have confidence to do it (Keller, 2009).

Satisfaction

At the satisfaction category which aims to make learners feel "I am glad I did it!", conditions will be given to learners to gain satisfaction from the consequences and then reinforcement will be done. Also, the concept of being fair is important in this category. Based on theories like classical conditioning, operant conditioning, fair or unfair (Adams, 1965) and so on, these are integrated into one category and then "Natural Consequences", "Positive Consequences" and "Equity" were selected as subcategory titles which will provide strategies for giving learners satisfaction and making them feel that they would like to learn more (Keller, 2009).

As we described earlier, the ARCS model is currently on work of expansion and got another concept of volition as a new category. Keller (2008) pointed out this category when he presented "First principles of motivation to learn". The definition of the term "volition" is "A concept of all the actions and attitudes related to the persistence of effort to reach a goal." On the other hand, the definition of "motivation" is "a meaning of what people hope, what they select and perform, and what they devote all their energies to. (Suzuki, 2010)". By the way, the macro model which supports the ARCS model also was expanded to the MVP model of Motivation, Volition, and Performance (Keller, 2010). However, subcategories of the Volition of the ARCS-V model have not been proposed. Therefore, by referring to the context of defining each category and subcategory for the ARCS model, we will propose subcategories of Volition in the next section.

PROPOSING THE SUBCATEGORIES OF THE VOLITIONAL CATEGORY

The Volition in the expanded ARCS-V model is attempted to supplement the concept of volition which is not explained in detail in the original ARCS model. So it must be significant to fill that blank by making practical explanations or proposals to the volitional part for the benefit of instructors. First, we will propose the subcategories for the Volition in the same style of each ARCS category. To make clear of the area followed by "volition", see **Figure1**.
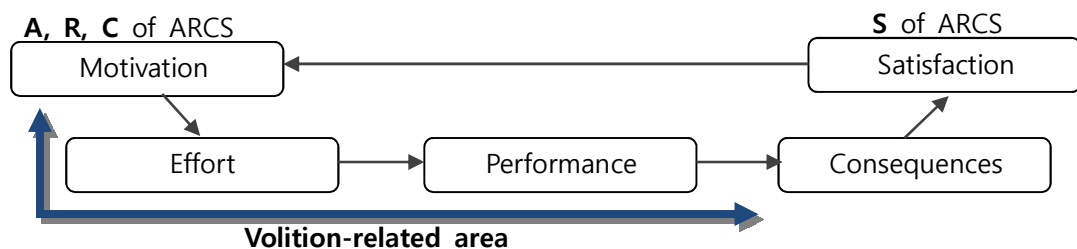

Figure 1. Volition-related area in the cycle of the ARCS-V model

In the area of volition-related area shown in Figure.1, we can find some steps in that area. At the earliest step, learners are motivated, and then they prepare for making their effort, and output their performance until they meet a goal. To check and see if there is any problem of volition at each step, it is worth picking up strategic keywords which are supported by theoretical evidences. The keywords we picked up are as follows:

Implementation Intention

An intention once motivated and formed will become "Implementation Intention" that is going to conduct efforts to reach the goal. This will lead the person to goal-oriented actions (Gollwitzer, 1996). At the same time, "volition" for maintaining the efforts will be accompanied to that. It is important for instructors to assist learners to form an intention-volition link, first. For practicing this, instructors should focus on the transition to intention implementation by having learners create a plan which reflects the intention.

Appropriate Self-control

Instructors need to prepare strategies to assist learners to have self-control for learning activities properly while the plan they made with the implementation intention is being practiced. Kuhl (1985) who advocated in his "Action Control Theory" that 1) selective attention, 2) encoding control, 3) emotion control, 4) motivation control, 5) environment control, 6) parsimonious information processing will be important when controlling own actions. Instructors should induce learners to check their own emotion or capacity and also instructors should help learners control themselves by arranging their environments.

Self-monitoring

Maintaining volition will demand learners not just to control themselves but to ascertain their own current progress for learning objectively. This objectivity in learning will allow learners to realize what to learn next to get a goal in a proper way, and then volition to learn will be maintained. To monitor him/herself is one of the most important actions according to Self-Regulated Learning (SRL) (Zimmerman, 1990). Instructors should encourage learners to reflect themselves objectively in between. Portfolio system which is popular in Japan recently might be useful in this situation.

We put these keywords as titles of the subcategories of the Volition in the same style of the ARCS model's as shown in **Table. 2**.

Table 2. Subcategories Proposed for the Volition of the ARCS-V model

Category	Subcategory	Process Question for Instructor
Volition	V-1: Implementation Intention	How can I guide learners to make a practical plan for getting to their goal?
	V-2: Appropriate Self-control	How can I encourage learners to behave to keep their learning controlled?
	V-3: Self-monitoring	How can I provide learners opportunities to realize their learning progress?

DISCUSSION

It must be needed to check the validity of the proposed subcategories of the Volition of the ARCS-V model. Also, we should discuss if there is more to consider when the proposal is presented.

We can anticipate that the volition will be maintained and a learner will be able to reach the goal as results of the efforts if 1) the learner is allowed anytime until he/she gets to the goal to look back the plan for learning which was made right after the learner was motivated to go for the goal, 2) the learner can avoid anything that interferes with the efforts, and can adjust the plan to the situation by grasping own progress of learning, and 3) the instructor can assist the learner at these points above. From this point of view, the subcategories we proposed will be adequate, as long as "V-1: Implementation Intention" aims to support learners to make an actual plan for the goal and make a commitment and start efforts, "V-2: Appropriate Self-control" aims to help learners to avoid the overwhelming load by conducting self-

control, "V-3: Self-monitoring" aims to help learners to make clear how much left for the goal and then modify the plan.

However, we came to realize that we need to study how the original ARCS model could be influenced from the appearance of the volitional element, also we need to study if it should be revised at some parts. Keller (2010) explained that the main elements of the concept of learner's volition were "implementation intention", "action control", and "self-regulation". Based on this point of view, we checked if each subcategory of the ARCS model is related to the concept of volition (See **Table 3**).

Table 3. Results of checking the volition in the ARCS model

△	A-1 ： Perceptual Arousal	○	R-1 ： Goal-Orientation
△	A-2 ： Inquiry Arousal	○	R-2 ： Motive Matching
○	A-3 ： Variability	○	R-3 ： Familiarity
○	C-1 ： Learning Requirement	×	S-1 ： Natural Consequences
○	C-2 ： Success Opportunities	×	S-2 ： Positive Consequences
○	C-3 ： Personal Control	×	S-3 ： Equity

Note: "○"- Related, "△"-Related in some situations, "×"-Not-related

From the results of checking, we found that the expansion of the ARCS model by Keller did not just add another new factor, but focused again on the cognitive concept which has already been there in the ARCS model. The ARCS-V model was arranged to make it clear. After all, accompaniment to the expansion has caused a necessity to check the original ARCS model if any modification is needed or not.

CONCLUSION

The purpose of this paper is to discuss about proposing the subcategories of the Volition for the ARCS-V model. We selected three subcategory titles, "Implementation Intention", "Appropriate Self-control", and "Self-monitoring" as results of this study. Also, we discussed about the validity of the proposal and the implication of what we pointed out, which is about the influence from focusing the volitional aspect to the definition of the original ARCS model. We found that further research will be needed. We will continue this study and will propose practical volitional strategies for assisting the diagnosis and solution for the motivational/volitional problems. Then the contribution to the progress of the ARCS study will be made. We will also present this study in Japan.

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