The Application Of
Arcs Motivational Model In Massive Open Online Course (MOOC)

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Abstract : Massive Online Open Course (MOOC) is an emerging practice in open learning. It also becomes an alternative way of delivering interactive teaching and learning. Malaysian Education Blueprint for Higher Education (2015-2025) has discussed MOOC under the 9th Shift called "Globalized Online Learning". In this Shift, Ministry of Education declares Malaysia's aims to leverage on MOOC as a way to take advantage of technology to improve quality and widen access to education (Ministry of Education, 2015).

INTRODUCTION

In developing countries, the use of MOOCs is an alternative educational offering for professionals who look for complementary training and education. In addition, these courses allow the acquisition of new knowledge and skills in fields that could provide them the opportunity for a better income or to continue learning throughout life. MOOCs have received wide publicity and many institutions have invested considerable effort in developing, promoting and delivering such courses. However, there are still many unresolved questions relating to MOOCs and their effectiveness. One of the major recurring issues raised in both academic literature and the popular press is the consistently high dropout rate of MOOC learners. Jordan (2015) had assembled a MOOC completion rates visualisation. There were 230,000 enrolments generated on average from 218 investigated MOOCs, and approximately 15% as its average completion rate. One of the identified reasons behind the scenario is due to low motivation (Ejreaw & Drus, 2017).

It is generally true that self-study requires commitment and self-discipline. In most MOOC cases, learners may not be motivated enough to keep up with their online content (Ejreaw & Drus, 2017). Nevertheless, continuing with the course for weeks or even months is more complicated and time-

consuming. As a result, designing materials and activities to keep learners engaged and persisting in the courses that they have signed up for is a problem for practitioners working with MOOCs.

 Keller's ARCS Motivational Model (1987) focuses on creating, stimulating, and maintaining motivational environments has been researched and adopted in various learning settings (Malik, 2014; Hodges & Kim, 2013; Lee & Kim, 2012; Bae et al., 2005). This model consists of four main components for motivating learning. The categories are Attention, Relevance, Confidence, and Satisfaction. In this model, it emphasizes that, first, the course design should incorporate a variety of strategies to gain learners' attention, interest, and stimulate curiosity in the inquiry. Second, it helps establish relevance by help setting clear goals, relates the learning material to learners' past experience and future requirements. Third, it helps learners build up confidence in learning. Fourth, it helps learners establish a sense of satisfaction and accomplishment (Huang & Hew, 2017). This systematic design model has been used as a guideline in numerous studies (Kurt & Kecik, 2017; Marshall & Wilson, 2013; Chanlin, 2009).

Within the MOOC learning context, the use of motivational elements are not limited to the design of instruction, but also the ongoing use of communication tools and electronic resources provided along the process of learning and interaction (Chanlin, 2009). This paper describes the application of Keller's ARCS Motivational Model to the development of Management Information System (MIS) Massive Open Online Course (MOOC). It highlights the elements of the developed modules as best practices and describes the alignment of each to the ARCS Motivational Model components.

MOOC IN MALAYSIAN HIGHER EDUCATION INSTITUTION

The Ministry of Education Malaysia (MOE) produced the Malaysia Education Blueprint 2015-2025 (Higher Education). One of the aspirations is to globalize Malaysian higher education institutions, and MOE has introduced MOOCs to be integrated into the higher educational system. Among the reasons behind the implementation of MOOC is the ability to

access learning content, materials, and tasks with minimal or no fees as well as the ability to gain credits upon successful completion of a MOOC (Ministry of Education, 2015).

In line with the advancement, Ministry of Education Malaysia has initiated Malaysia MOOCs in collaboration with four public universities as MOOC content developers. The universities are (i) Universiti Kebangsaan Malaysia (UKM), (ii) Universiti Putra Malaysia (UPM), (iii) Universiti Teknologi MARA (UiTM), and (iv) Universiti Malaysia Sarawak (UNIMAS). The courses are compulsory courses for undergraduate students. The courses are (i) Ethnic Relation course (UKM), (ii) Asia and Islamic Civilization course (UPM), (iii) Introduction to Entrepreneurship course (UiTM), and (iv) ICT Competency course (UNIMAS). OpenLearning (https://www.openearning.com) was the learning platform chosen for the implementation of the Malaysia MOOC.

To date, Malaysia MOOCs is offering 63 exciting courses, and there are 137, 946 learners from over 80 countries who have enrolled for the courses (https://www.mohe.gov.my/en/student/initiative/mooc).

LITERATURE REVIEW

Motivation in Online Learning

Motivation has been defined as "that which accounts for the arousal, direction, and sustenance of behavior, and can be used to explain why people choose to do certain things and how much effort they put into doing them" (Keller, 2010; Keller, 1979). People with motivation toward certain things will be active in doing these things while those who are not motivated will act passively in performing tasks (Ryan & Deci, 2000). Motivation is such a complex issue in that it is dynamic and there are no widely accepted rules to predict it (Keller, 2010). Different people have motivation toward different things. Even for the same person toward the same thing, motivation is not constant in different situations or at different times (Hartnett et al., 2011).

Due to the uniqueness of online learning, learners' motivation becomes

a well-investigated issue in the online learning environment. In a literature review, Bekele (2010) found that most studies being reviewed have reported online learning environment is itself a motivator to learners and also supports learners' satisfaction. Moore and Kearsley (2011) considered learners' motivation as a very important factor that was related to learners' success in distance education. A study conducted by Clayton et al. (2010) revealed that students who preferred different educational environments – traditional courses and online courses had different motivational components. Students who chose traditional courses believed that the format suited their learning style better and thus they were willing to spend more time and put more effort into learning. For students who preferred online format, they were more confident that they could deal with the online learning.

Several indicators, according to research studies, affect students' motivation. The literature review on online learning describes that external as well as internal factors affect learners' motivation in the online learning environment (Bekele, 2010). External factors include the technologies in the course, the quality of the course design, student support service, and etc. Different strategies have to be used to judge and to promote learners' motivation in online learning environments, which is different from face-to-face instruction, in which teachers can observe students' reactions to judge their motivation or provide immediate verbal feedback or emotional support to those who with low motivation (Li, 2015)

Completion and dropout rates have been examined widely in the literature of online learning environment, and motivation and its constructs are always identified as important factors to influencing online retention rate. Song (2000) stated that "when learners do not have proper motivation to persist, they will drop the course or they will procrastinate". Emotional support from faculty and friends and learners' self-efficacy were important factors for students who persisted in online learning (Park & Choi, 2009). A literature review conducted by Hart (2012) revealed that learners' motivation was one of the most important components that made them persist in online learning environments. Merely admitting the importance of motivation in online learning environments or examining learners' characteristics that make them successful in online courses is not enough. Researchers and practitioners have explored methods to increase learners' motivation in instructional design.

The ARCS Motivational Model

Keller (1979) developed the ARCS Motivation Model to make the instruction more interesting and to enhance learners' motivation. This is the first model that incorporates motivation into a systematic instructional design process. There are four main categories in the ARCS Motivation Model which are Attention, Relevance, Confidence, and Satisfaction. If the subject matters can catch students' attention and is connected to learners' prior knowledge or current experience, they would be satisfied in the learning process, feeling secured and confident in mastering the subject matters.

Hence, it is necessary to take the four categories into consideration during designing the learning content in order to create an optimal learning environment in which learners would feel comfortable and motivated to learn. These four categories represent sets of conditions that are necessary for a person to be fully motivated, and each of these four categories has component parts, or subcategories. The challenge of how to stimulate learners' motivation to learn can be made more predictable and manageable by considering the four general ARCS requirements. There are practical strategies have been introduced by Keller (1987) to be used in achieving each of the requirements as shown in Figure 1.0.

The first strategy in motivating learners is to gain their attention. There are different tactics, which range from simple unexpected events to mentally stimulating problems that engage a deeper level of curiosity. Another element is variation, which is necessary to sustain attention. Content needs to be delivered using different delivery techniques and strategies. The second requirement is to build relevance. Even if curiosity is aroused, motivation is lost if the content has no perceived value to the learner. Relevance results from connecting the content of instruction to important goals of the learners, their past interests, and their learning styles. One traditional way to do this is to relate content to the learners' future job or academic requirements. Another, and often more effective approach is to use simulations, analogies, case studies, and examples related to the students' immediate and current interests and experiences. The third condition required for motivation is confidence. This is accomplished by helping learners establish positive expectancies for success. Often students have low confidence because they have very little understanding of what is

expected of them. By making the objectives clear and providing examples of acceptable achievements, it is easier to build confidence. Another aspect of confidence is the encouragement. Learners should believe that they can achieve any task and be encouraged to attribute their success of failures to personal effort. To further sustain learners' motivation, the fourth condition of motivation must be fulfilled that is satisfaction. Satisfaction means learners should have positive feelings about their accomplishments and learning experiences. It means that they need to receive recognition and evidence of success that support their intrinsic feelings of satisfaction and they believe they have been treated fairly. Tangible extrinsic rewards and opportunities to apply newly learned skills support intrinsic feelings of satisfaction. Finally, a sense of equity, or fairness, is another necessity to maintain learners' motivation.

SUB-CATEGORIES		PROCESS QUESTIONS	STRATEGIES
ATTENTION Capturing the interest of learners; stimulating the curiosity to learn.			
A1	Perceptual Arousal	What can I do to capture their interest?	Create curiosity, wonderment by using novel approaches, injecting personal and/or emotional material.
A2	Inquiry Arousal	How can I stimulate an attitude of inquiry?	Increase curiosity by asking questions, creating paradoxes, generating inquiry, and nurturing thinking challenges.
A3	Variability	How can I maintain their attention?	Sustain interest by variations in presentation style, concrete analogies, human-interest examples, and unexpected events.
RELEVANCE Meeting the personal needs/goals of the learner to effect a positive attitude			
R1	Goal Orientation	How can I best meet my learner's needs?	Provide statements or examples of the utility of the instruction and either present goals or have learners define them.
R2	Motive Matching	How and when can I provide my learners with appropriate choices, responsibilities, & influences?	Make instructions responsive to learner motives and values by providing personal achievement opportunities, cooperative activities, leadership responsibilities, and positive role models.
R3	Familiarity	How can I tie the instruction to the learner's experiences?	Make the material and concepts familiar by providing concrete examples and analogies related to the learner's work.
CONFIDENCE Helping the learners believe/feel that they will succeed and control their success.			
C1	Learning Requirements	How can I assist in building a positive expectation for success?	Establish trust and positive expectations by explaining the requirements for success and the evaluative criteria.
C2	Success Opportunities	How will the learning experience support or enhance the learner's beliefs in their competence?	Increase belief in competence by providing many, varied, and challenging experience which increase learning success.
C3	Personal Control	How will the learners clearly know their success is based on their efforts and abilities?	Use techniques that offer persona control and provide feedback that attributes success to personal effort.
SATISFACTION Reinforcing accomplishment with rewards			
S1	Natural Consequences	How can I provide meaningful opportunities for learners to use their newly acquired knowledge/skill?	Provide feedback and other information that reinforces positive feelings for personal effort and accomplishments.
S2	Positive Consequences	What will provide reinforcement to the learner's successes?	Use verbal praise, real, or symbolic rewards, and incentives, or let learners present the results of their efforts to reward success.
S3	Equity	How can I assist the students in anchoring a positive feeling about their accomplishments?	Make performance requirements consistent with stated expectations, and provide consistent measurement standards for all learners' tasks and accomplishments.

Figure 1: The ARCS Motivational Model categories, Process Questions, and Strategies (Keller, 1987)

The ARCS Motivational Model Applications

The ARCS motivational design model has been widely applied to multiple learning environments on different subjects. It has been used in different educational settings, from schools to higher education to adult professional development. The main purpose of this model is to motivate students' learning determination. Researchers and practitioners have applied the ARCS model into their teaching to examine its effect on learners' motivation, attitudes, and learning achievement. Chanlin (2009) used the ARCS model as a framework to identify students' motivational problems in an information technology lesson then designed a new lesson using the ARCS model at a university in Taiwan in order to deal with those problems. The author also found a positive relationship between students' involvement in the lesson and their achievement. Kurt and Kecik (2017) conduct a similar study to support the study the effects of ARCS motivational model on university students' motivation. They applied ARCS motivational model strategies to the instructional design via detailed lesson plan. The result of the study revealed a significant increase in the students' motivation.

Studies also examined the effects of on utilizing specific techniques or tools, designed incorporating ARCS strategies. Hodges and Kim (2013) designed ARCS enhanced videos and implemented them into a blended college Math course. They used a true experimental design approach to investigate the differences in learning achievement, attitudes toward Math, and course interest between the experimental and control groups. Results showed that the experimental group had higher positive attitudes toward Math but no difference in achievement or course interest. The authors suggested that in addition to the ARCS model, multimedia design principles should be integrated into the interventions to improve student learning.

The ARCS Motivational Model also being implemented in the different learning environment. Wongwiwatthananukit and Popovich (2000) believed that instruction, even when designed and based on sound instructional principles, often times does not stimulate students' motivation to learn. Thus, they introduced ARCS Model into the pharmaceutical educator's instruction in order to help the educator identify components of instruction that either increase or decrease student motivation to learn. It is also intended to provide motivational strategies which educator can

incorporate into the instruction plan to make it responsive to the interests and needs of students. They highly recommended motivational design and strategies should be embraced by every educator to enhance students' learning and achievement, and also for their skill development. Bae et al. (2005) implemented ARCS strategies to stimulate and maintain learner's motivation in mobile learning settings. The design and content of the mobile learning system were constructed using the strategies and proven that the system helps the student to attain their learning goals more easily. Lee and Kim (2012) work on the development of Web-based courseware for the motivation of elementary school underachievers in mathematics learning. The courseware is expected to replace the existing courseware for underachievers learning number sense because the motivational focus for the learners is reflected in the functions and features of the courseware. Existing Web-based courseware rarely meets the needs of underachievers, mainly by not considering the role that motivation plays in this group. They incorporated motivational design strategies derived from ARCS Model. Throughout the study, they highlighted the importance to keep a balance between contents and motivation strategies.

Most of the distance learning organizations are facing challenges with the high non-completion rate of courses offered due to lack of motivation. Today, these organizations are also taking advantages on the effectiveness of The ARCS Motivational Model. Malik (2014) claimed that systems which are developed topic the ARCS Model raise the attention of the students during instruction, develop a relevance to the students' requirements, create a positive expectation for success and help to have a satisfaction by reinforcing success. Online learning also comes with inherent challenges. Marshall and Wilson (2013) conducted a case study on ARCS Model application to e-learning module design. Their research demonstrated that each of the motivational elements promotes learner persistence and ultimately, mastery of e-learning content.

THE ARCS MOTIVATIONAL MODEL APPLICATION IN MOOC

Management Information System (MIS) course is a study of information systems which focusing on their use in business and management. This course provides the students with the leading edge

perspectives on the business and management uses of information systems. MIS MOOC is developed based on OpenLearning platform (https://www.openlearning.com). OpenLearning is a for-profit educational technology institution based in Australia that offers a social online learning platform that can deliver massive open online courses (MOOCs). They have worked with the University of New South Wales and Taylor's University to deliver the first MOOCs in Australia and Malaysia respectively (https://en.wikipedia.org/wiki/OpenLearning).

The main intention of developing MIS MOOC is to address the learner's motivation issue. Most of the learners who enrolled for this course was non-computing background students. They are having a problem in understanding the concept and memorizing the fact. These problems demotivate and affect students' performance. With MOOC, students can learn anytime and anywhere. To encourage the students to learn with MOOC, they need to be motivated. Therefore, ARCS Motivational Model is applied throughout the development of MIS MOOC. Figure 2.0 shows the overall structure of MIS MOOC, and Figure 3.0 is the screenshot of MIS MOOC module.
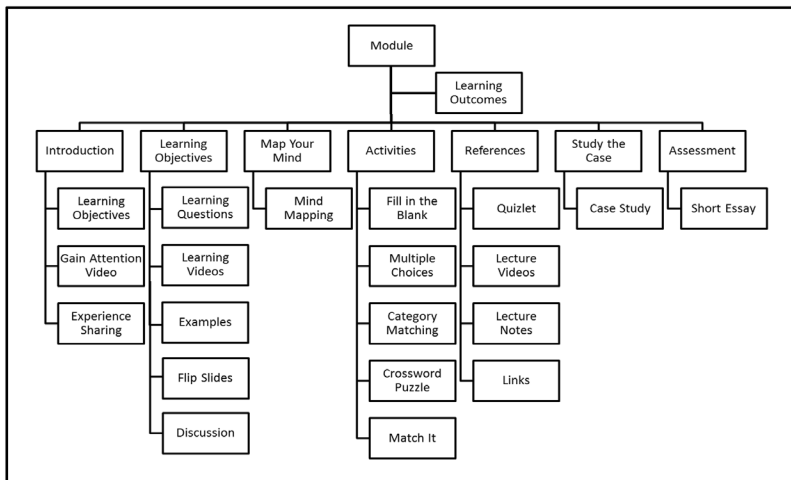

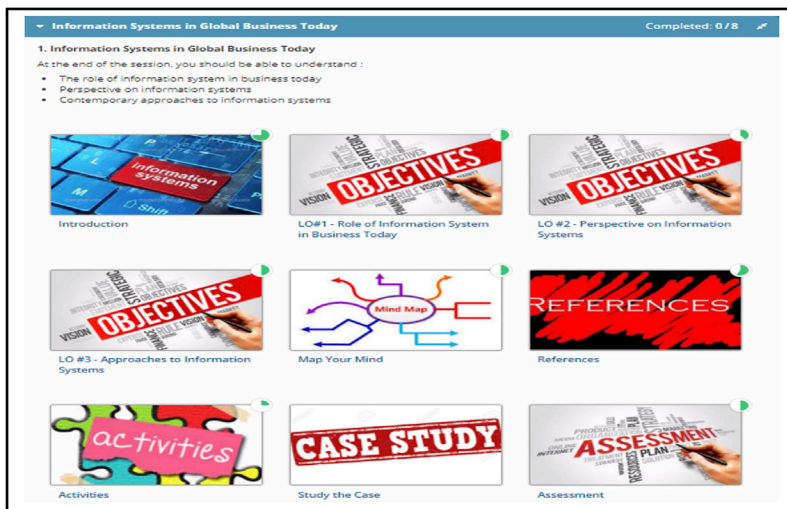**Figure 2: The Structure of MIS MOOC**

Figure 3: MIS MOOC Module Screenshot

In summary, MIS MOOC was developed based on the four major components defined in ARCS Motivational Model (Keller, 1987) that influence the motivation to learn. These components are related to two important questions in course development. The questions are:

i.   What will you do to make this instruction valuable and stimulating for your learners?
ii.   How will you help your learners succeed and feel that they were responsible for their success?

The following sections explain how these two major questions were addressed in MIS MOOC.

Attention

Keller (1987) defined attention, as "capturing the interest of learners; stimulating the curiosity to learn". Attention-getting strategies deal with human characteristics such as the orienting reflex, curiosity, and sensation seeking. Boredom is the opposite aspect of attention. There are specific activities that will help to avoid the condition and were clustered into three

subcategories.

The first subcategory is perceptual arousal. Perceptual arousal is one type of curiosity. To cater this element, the learning session begins with the Introduction Page of the topic which describes the learning objectives. The purpose of this page is to provide a brief idea to the learners about the topic that they will learn. A general and interesting topic related Gain Attention Video was posted. Learners were asked to respond to the video by sharing their experience related to it. This is how the author ties the learners and the topic together, by injecting personal materials. The deeper the learners can relate the topic to themselves, or their daily activities, the higher potential for the course to be completed.

The next subcategory is inquiry arousal, which is how to sustain learners' attention. To sustain attention, a deeper level of curiosity is activated. Learning materials were arranged according to the Learning Questions of every Learning Objectives. In Learning Objectives pages, learners were presented with numerous learning videos. As a warming-up activity, learners need to answer few questions, which includes problem situation solving. This kind of activity can be resolved only by knowledge-seeking behaviour.

Variability is the third subcategory in attention. Different approaches were used in delivering the content to the learners. Instead of learning videos, MIS MOOC also incorporates Web 2.0 tools such as Flipsnack in providing reading materials for the learners, Youtube videos and Blog links to support the topic with examples. Learners' were also encouraged to have the discussion among them.

Relevance

Keller (1987) emphasized that relevance as a powerful factor in determining what we are motivated to learn, or what we are willing to continue paying attention to after our attention has been aroused or stimulated. Relevance is referred to as "accomplishing personal goals and responding to people's perceived needs" (Keller, 1987). Relevance-producing strategies were applied to build bridges between the subject matter and the learner's needs, wants, and desires.

Goal orientation strategy is used to relate the benefits of the course to the learners' daily activities or future career. This is applied throughout the Introduction and Learning Objective pages. More discussion happens in these pages to make sure learners understand how the concept and skills are related to their goals. The discussion is steered by the listed learning questions.

Motive matching focus on providing learners with appropriate choices, responsibilities, and influences so that it will match the learners' learning styles personal interests. It refers more to the how the course is taught than what is taught. Different teaching activities have been applied into this MOOC. In Learning Objectives, Activities, Map Your Mind, and Study the Case page, individual competitive activities such as discussion, quizzes, and mind mapping help make the course more appealing, independent of the content. In fact, these activities also help stimulate interest in the topic.

People enjoy more about things they already believe in or are interested in. Familiarity is the third strategy to generate relevance. In this course, several examples related to the topic. This is how the author links the course content to the learner's experiences. Learners also encouraged sharing their understanding of the topic in the Map Your Mind page.

Confidence

The fear of failure and the attraction of achievement are opposing forces that have a huge influence on motivation. Confidence involves the level of learners believe or feel that they will succeed and control their success. Confidence building strategies help in building learners' confidence and remove fear and anxiety.

The first strategies are through learning requirements. The simplest ways are by letting the learners know what is expected of them. Therefore, the author highlights the learning outcomes in every module, learning objectives in the Introduction page, and also learning questions in every Learning Objectives page, so that learners will always be on the right track. The session begins with warm-up activities such as experience sharing and

discussion on the topics in order to build trust. At the end of every module, learners are required to complete their Activities page which comprises of different type of exercises include a crossword puzzle, category matching, fill-in-the-blank, multiple choices, and match-it. There is also References page for learners with supporting materials to refer to which include online activity links such as Quizlet, lecture video, downloadable lecture notes, and list of references. Learners also encouraged sharing other topic related materials on this page.

After establishing the confidence for success, it is important for learners to actually succeed. Success opportunities may be different from one to another. People who are learning something new would expect frequent feedback that helps them to succeed while, those who are mastering the basics, they might expect for challenges to help them sharpen their skills. The bottom line here is to avoid boredom. After completing all the stated learning objectives for every module, learners are required to complete four different activities. Map Your Mind to extract their understanding on the concept, and then proceed to Activities for content exercises, Study the Case to apply the new knowledge, and finally a graded assessment to test on the whole understanding. They may proceed to the next module once they have completed the whole activities.

It is important for learners to have as much personal control of their learning environment. To enhance motivation, learners should be independent enough to learn and practice new skills and knowledge. Experiential learning activities such as discussion and exercises which require a learner to do problem-solving provide a situation where the learner has to apply personal control to succeed. Instead of that, active and corrective feedback from the instructor also helps learner to identify their mistake and take corrective action.

Satisfaction

The final step is in the motivational process is to create satisfaction so there will be continued motivation to learn, and recommendations of the course to other people. Satisfaction is a category that concentrates on helping learners feels positive about their achievement. This involves combining

appropriate external rewards with the challenge of providing opportunities to achieve internal rewards in the areas of natural consequences, positive consequences, and equity.

Natural Consequences or intrinsic reinforcement encourage and support intrinsic enjoyment of the learning experience. In Assessment and Study the Case page, the instructor provides opportunities to the learners to apply their newly acquired knowledge through Short Essay, and Case Study. Through Learning Objectives pages, learners are encouraged to discuss among themselves about the topic. This is to provide positive recognition to the learners by giving them the opportunity to assist other learners and at the same time acknowledge the learner's effort to learn. Instead of that, learners' also encouraged sharing their source of knowledge through References page where they can contribute to the reference list.

Positive consequences or an extrinsic reward is to provide positive reinforcement and motivational feedback to the learner. Learners like to have some feeling of control over their situation, and at the same time, they also appreciate the external recognition that helps support what they are doing. There are different types of recognition given in this course include Kudos, Badges, and Certificate of Completion. Kudos points are awarded to the learner by the community. They receive kudos for contributing quality content that might be helpful and informative for other people via comments and content pages. Kudos can be earned by commenting or adding content pages. Badges are created by the instructor based on different criteria such as Good Learner, Active Learner, Excellent Leaner, and Super Learner. Learners will receive their badges once the criteria are met, or manually issued by the instructor. Certificate of completion is assigned to the learners who manage to complete the course.

The final strategy in satisfaction is equity, demonstrating fair treatment among students. This is achieved by making performance requirements consistent with stated expectations and provides consistent measurement standards for all tasks and accomplishments. The instructor needs to actively involved and constantly provide evaluative feedback for every activity using specified criteria.

CATEGORIES & SUB-CATEGORIES		PAGE	STRATEGY
ATTENTION			
A1	Perceptual Arousal	– Introduction	– Get Attention Video – Experience Sharing
A2	Inquiry Arousal	– Learning Objectives	– Learning Videos – Discussion
A3	Variability	– Learning Objectives	– Learning Videos – Examples – FlipSlides – Discussion
RELEVANCE			
R1	Goal Orientation	– Introduction – Learning Objectives	– Experience Sharing – Learning Questions – Discussion
R2	Motive Matching	– Learning Objectives – Activities – Map Your Mind – Study the Case	– Discussion – Exercises – Mind Mapping – Case Study
R3	Familiarity	– Learning Objectives – Map Your Mind	– Examples – Discussion – Mind Mapping
CONFIDENCE			
C1	Learning Requirements	– Introduction – Learning Objectives – Activities – References	– Learning Outcomes – Learning Objectives – Experience Sharing – Learning Questions – Discussion – Quizzes – Quizlet – Lecture Videos – Lecture Notes – Links
C2	Success Opportunities	– Map Your Mind – Activities – Study the Case – Assessment	– Mind Mapping – Quizzes – Case Study – Short Essay
C3	Personal Control	– Learning Objectives – Activities – Map Your Mind – References – Study the Case – Assessment	– Discussion – Quizzes – Mind Mapping – Links – Case Study – Short Essay
SATISFACTION			
S1	Natural Consequences	– Learning Objectives – References – Study the Case – Assessment	– Discussion – Links – Case Study – Short Essay
S2	Positive Consequences	– Learning Objectives	– Kudos – Badges – Certificate of Completion
S3	Equity	– Learning Objectives – Map the Mind – Study the Case – Assessment	– Discussion – Mind Mapping – Case Study – Short Essay

Figure 4: The ARCS Motivational Model in MIS MOOC

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CONCLUSION

This study describes how the ARCS Motivational Model been applied to the development of Massive Open Online Course (MOOC). MOOC practitioners should think about motivation in terms of attention, relevance, confidence, and satisfaction, which are the four major categories of influence on the motivation to learn. Nowadays, teaching would be a very challenging task, especially in an online environment. The instructor, mostly also an educator, can teach and share their experience well with the learners. But, learners might not learn if they are not interested in what they need to learn. The consequences are that they may not use and apply the knowledge and skills that they have learned, unable to contribute a positive influence on the society and pursue the goal of life-long learning. Therefore, using motivational strategies help learners to understand the importance of the course. Motivational design and strategies should be embraced by MOOC practitioners in order to enhance student learning and achievement and skill development.

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