

Factors for Development of Learning Content and Task for MOOCs in an Asian Context

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Abstract

The rapid advancement of emergent learning technologies has led to the introduction of massive open online courses (MOOCs) which offer open-based online learning courses to a large number of students. In line with the advancement, the Malaysia Ministry of Education has recently initiated Malaysia MOOCs via collaboration with four public universities. This paper proposes factors that could be used in development of MOOC learning content, which are: (i) type of MOOC, (ii) type of video lectures, (iii) integration of cultural aspects in video lectures, (iv) communication style in video lectures; and (v) humor effect in video lectures. The paper also proposes factors in developing MOOC learning tasks, namely: (i) structure of learning tasks; (ii) dialog in learning tasks; (iii) learner autonomy in learning tasks; (iv) social settings of learning tasks; and (v) transactional distance of learning tasks. The factors are based on experiences during development of MOOC for ethnic relations and are aligned with learning concepts and strategies such as the transactional distance theory and the theory of the computer model of a sense of humor. Future directions on the development and research on MOOCs are also proposed.

Keywords: massive open online courses, learning content factors, learning task factors, Malaysia MOOCs, higher education

1. Introduction

In the past few years, Massive Open Online Courses (MOOCs) have emerged as one of the rapid-growing learning environments for online learning. MOOCs allow a 'massive' number of learners to learn from 'open-based' online courses (Kop et al., 2011a; Daniel, 2012). The learning platform has transformed the context of learning in which learners can learn outside the 'boundaries of learning institutions' (Kop et al., 2011a; De Witt et al., 2014; Norman et al., 2014).

The paper is outlined as follows. First, the transactional distance theory is explained and linked to the design of learning tasks in MOOCs. Second, the Malaysian MOOCs initiative is discussed. The discussion is then continued with the proposed factors in the development of learning content and tasks for MOOCs based on the MOOC that we developed. The paper is concluded with discussions of the proposed factors and future directions for MOOC development in the Asian context.

2. Transactional Distance Theory

The transactional distance theory is an educational theory that describes the concepts of distance education (Garrison, 2000). The theory was founded by Moore (1972) and is viewed as a major contribution in the distance education field (Garrison, 2000; Park, 2011). The theory assumes that distance is viewed as a pedagogical concept that considers geographical and psychological separation between the learner, their peers, and instructors (Moore, 2007; Shearer, 2007; Park, 2011). The transactional distance theory is influenced by three aspects (Moore, 2007; Park, 2011): (i) the structure of the program; (ii) the dialog between the teachers and the learners; and (iii) the autonomy of the learners. The theory assumes that the structure and learner autonomy have direct relationship with transactional distance, while dialog has an inverse relationship with transactional distance

(Moore, 2007; Park, 2011). In other words, as structure or learning autonomy increases, transactional distance increases. Meanwhile, as dialog increases, transactional distance decreases (Moore, 2007; Park, 2011).

Recently, Park (2011) proposed a pedagogical framework for mobile learning based on Moore's (1972) transactional distance theory. Park's (2011) theory assumes that the mediation is the central unit of analysis. The mediation influences two factors, which are activity and high transactional distance. Activity (horizontal axis) is categorized in terms of individualized and socialized activity (horizontal axis). Transactional distance (vertical axis) is categorized in terms of its level—high or low. Higher transactional distance activities are highly structured and have fewer dialogues between learners and teachers. Lower transactional distance activities are loosely structured and dialogs are more freely conversed (Park, 2011).

Although Park's (2011) framework is developed for mobile learning, the framework could be potentially useful for analyzing MOOC activities from a transactional distance perspective. We are aware that there are other framework for analyzing MOOCs such as Kop et al.'s (2010) model of open networked learning environment, yet, we believe that Park's (2011) framework could provide different insights. Thus, this study uses the transactional distance learning theory by Moore (1972) and the framework of mobile learning by Park (2011) to analyze the learning activities in a Malaysia MOOC, discussed in later section of the paper.

3. Malaysia MOOCs and the Ethnic Relations Course

Malaysia MOOCs is a recent initiative by Ministry of Education Malaysia (MOE). It was pre-launched in 18 September 2014 by the Higher Learning Minister II in Putrajaya, Malaysia. The pre-launch of Malaysia MOOCs involved collaboration with four public universities as MOOC content developers, which are: (i) National University of Malaysia (UKM); (ii) University Putra Malaysia (UPM); (iii) MARA University of Technology (UiTM); and (iv) University of Malaysia Sarawak (UNIMAS). Each of the four universities developed MOOC content for four courses, namely: Ethnic Relations and Integration in Malaysia (UKM), Islamic and Asian Civilisations (UPM), Introduction to Entrepreneurship (UiTM), and ICT Competency (UNIMAS). The learning platform chosen for Malaysia MOOCs was the OpenLearning platform and the courses can be found via <https://www.openlearning.com/malaysiamoocs>. The courses are foundation courses for all undergraduate students in Malaysian universities. The learning content and activities produced on MOOCs covered at least 30 percent of the whole course syllabus. All course instructors teaching the four courses were recommended to utilize the MOOCs as learning content. In other words, the four courses were conducted as a blended learning course—where 30 percent of the course was conducted in MOOCs while the remaining percentage was carried out according to course instructors in their respective universities.

To investigate the issue and challenges in development of Malaysia MOOCs, we focus the discussion in our experiences developing a MOOC for the Ethnic Relations course at the National University of Malaysia (UKM). The Ethnic Relations course is a foundation course that is required to be completed by all undergraduate students in public universities. The course is aimed in exposing students to the issues related to ethnic relations in Malaysia from the perspective of social cohesion. The MOOC content and activities are developed in *Bahasa Melayu* (Malay Language). Since the course launch on 1 September 2014, the total students enrolled in the course after four months is over 16000 students. Most of the students are from Malaysia, and a few students from Japan, United Kingdom, Netherlands, USA, and Australia. The course is coordinated by seven instructors from the CITRA Center in UKM.

4. Proposed Factors in Development of Learning Content for MOOCs

Based on our experiences in developing MOOCs, we propose some factors as guidelines in the development of learning content for MOOCs. These factors are categorized into five types according to their respective factors. The factors are summarized in Table 1. It is worth to note that as our learning resources was developed in the video format, the guidelines only focus on aspects related to learning resources that are in video format.

Table 1. Proposed factors in the development of learning content for MOOCs

Factor	Type				
	1	2	3	4	5
1. Type of MOOC	cMOOC	xMOOC	-	-	-
2. Type of video lectures	Fully animated video	Mainly animated video	Semi-live action and semi-animated video	Mainly live action video	Fully live action video
3. Integration of cultural aspects in video lectures	Full integration of local cultural aspects	High integration of local cultural aspects	Semi - integration of local and non-cultural aspects	High integration of non-cultural aspects	Full integration of non-cultural aspects
4. Communication style in video lectures	Fully informal language	Mainly informal language	Semi-informal and semi-formal language	Mainly formal language	Fully formal language
5. Humor effect (using speech balloons) in video lectures	Smooth-styled speech balloons	Wavy-styled speech balloons	Zigzag-styled speech balloons	-	-

4.1 Factor 1: Type of MOOC

The first proposed factor to be considered in the development of learning content for MOOCs is the *type of MOOC* to be developed. To date, MOOCs are categorized according to their theoretical foundations. cMOOCs are founded based on the theory of connectivism while xMOOCs are laid on the behaviorist theory (Daniel, 2012). Both types of MOOCs have their benefits and limitations. For cMOOCs, this type of MOOC is based on the theory of “connectivism,” where learning is viewed as a process of generating and linking networks that connect knowledge (Siemens, 2013). The benefits of cMOOCs are that are “open” in a sense that learners can pursue their learning with less-structured learning activities that in turn provides more autonomy for learners (Kop et al. 2011a; Barnett et al., 2013; Siemens, 2013). However, due to the “openness” of cMOOCs, these have caused negative effects to the learners. Kop et al. (2011b) reports that cMOOCs have been reported to cause some learners to feel a sense of being “lost” and overwhelmed in the learning environments. This type of MOOC has also caused learners to become confused with the vast learning resources available to them (Kop et al., 2011b).

In contrast to cMOOCs, xMOOCs are developed in an enclosed platform providing some sort of structure as to which learning resources are available to learners. xMOOCs is also beneficial as it has been reported to create a “tutor-like” learning space. In a recent study, Adams et al. (2014) revealed that xMOOC videos created an unexpected intimate pedagogical sphere between the learners and instructors. As more and more video lectures were viewed in the preceding weeks, learners felt that the MOOC instructors were addressing them personally and this made the learner perceive that instructors were engaging with the learner personally (Adams et al., 2014). On the contrary, xMOOCs are based on behaviorism, thus could confine the learning process where “teachers are regarded the expert” and “learners are regarded as knowledge consumers” (Siemens, 2013). Here, Siemens (2013) argues that the learning process is teacher-centered and it causes learners to primarily duplicate the knowledge structure that is initially pre-defined by course designers and instructors. From the discussion, we propose the *type of MOOC* factor to be categorized as: (i) cMOOCs; and (ii) xMOOCs, as shown in Table 1. Taking into consideration the benefits and drawbacks of both types of MOOCs, we selected xMOOCs as the type of MOOC to be developed. This was due to the fact that the “tutor-like” intimacy that xMOOCs offered could assist us in creating a “tutor-like” presence during learning. Thus, the learning content was tailored to the xMOOC type.

4.2 Factor 2: Type of Video Lectures—Animated Videos or Live Action Videos

The second factor proposed for MOOC learning content development is the *type of video lectures*. For this factor, we propose that video lectures are categorized into five types, which are (Table 1): (i) fully animated video; (ii) mainly animated video; (iii) semi-live action and semi-animated video; (iv) mainly live action video; and (v) fully live action video. Live action videos are categorized as videos containing real people demonstrating or acting out a real-life scenario (Stocker et al., 2011). This type of video allows learners to better visualize a scenario. Zhang et al. (2014) conducted a study on cultural competence among over 1000 respondents and found that online live action videos can be an effective method in cultural competency training. The respondents perceived videos could help in understanding the cultural issues involved in future real-life scenarios. Meanwhile, animated videos enabled explanations of learning scenarios that were infeasible to be portrayed in live action videos (Veletsianos, 2009; Clark and Mayer, 2011; Russell et al., 2014).

In this study, we developed both live action and animated videos and we categorize the developed MOOC under the third type (semi-live action and semi-animated videos). An example of a live action video is a real-life scene that portrayed the daily life of a university student (Figure 1). These scenes were used to illustrate and visualize real-life examples to learners about ethnic relations. For animated videos, an example of its usage is animations of historical events where scenes involving ethnic relations in the past were animated to re-create and re-illustrate the concept of ethnic relations during the “Malacca Era,” as illustrated in Figure 2.



Figure 1. An example of a live action video in the MOOC

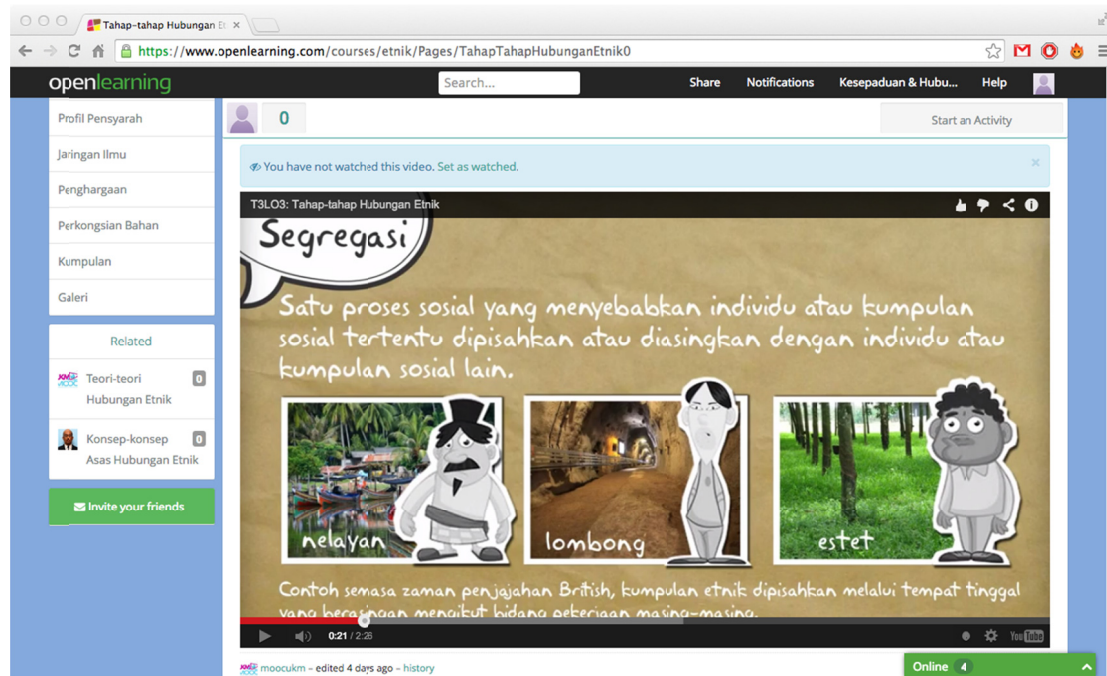


Figure 2. An example of an animated video in the MOOC

4.3 Factor 3: Integration of Cultural Aspects in Video Lectures

The third proposed factor to be considered is the integration of cultural aspects in the characters/actors in the video. Based on Hwang and Chang's (2011) study, we categorized the factor according to the following types (Table 1): (i) full integration of local cultural aspects; (ii) high integration of local cultural aspects; (iii) semi-integration of local and non-local cultural aspects; (iv) high integration of non-cultural aspects; and (v) full integration of non-cultural aspects. Local cultural aspects indicate the use of local characters, props, and locations that could better illustrate the scenario in which the video lecture was taken.

In our study, the characters/actors in both live action and animated videos were designed with integration of face adaptation from the cultural aspects of the Malaysian culture. The pedagogical approach implemented in the development of both types of videos was the "storytelling" approach, where the instructors acted as storytellers. For the live action videos, a combination of real-life students in daily lives was used in delivering the story, as shown in Figure 1 and Figure 3. As for the animated videos, the "storytellers" were also the instructors but were illustrated in the form of "cartoon versions" of themselves (Figure 4). This was done to increase familiarity of the instructors towards the learners to attract and keep learner attention (Veletsianos, 2009; Chen et al., 2010). A previous study by Bronstad and Russell (2007) showed that individuals are more attracted to people who are from the same race or culture due to facial attractiveness as compared to strangers who are from a different race or culture.

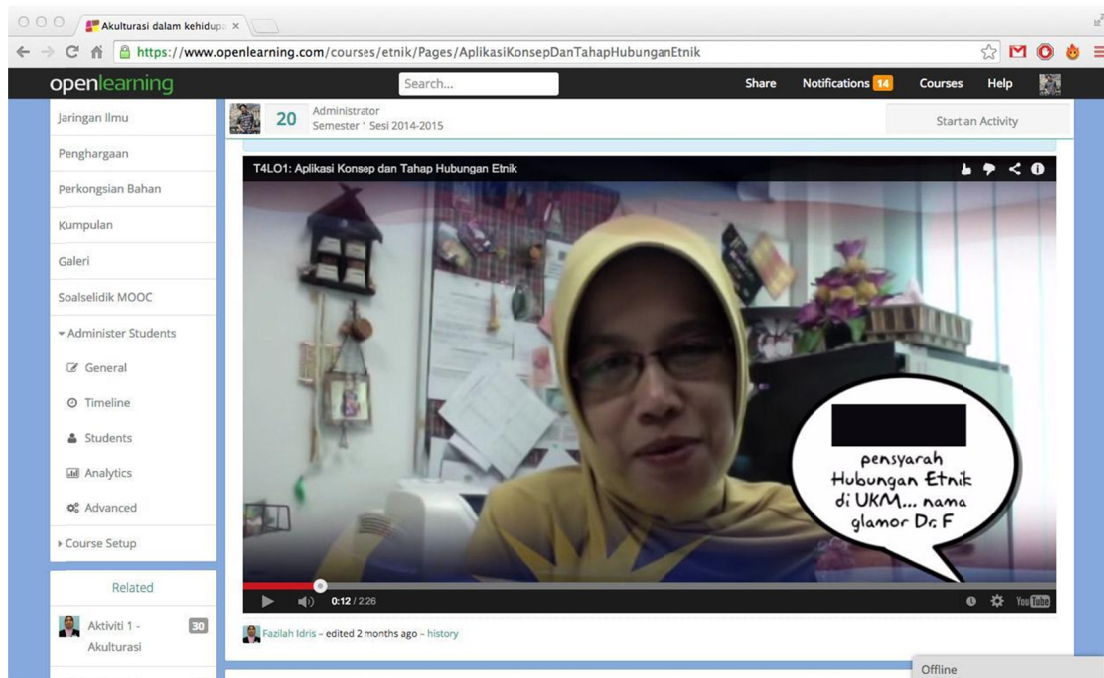


Figure 3. Instructors as the storytellers

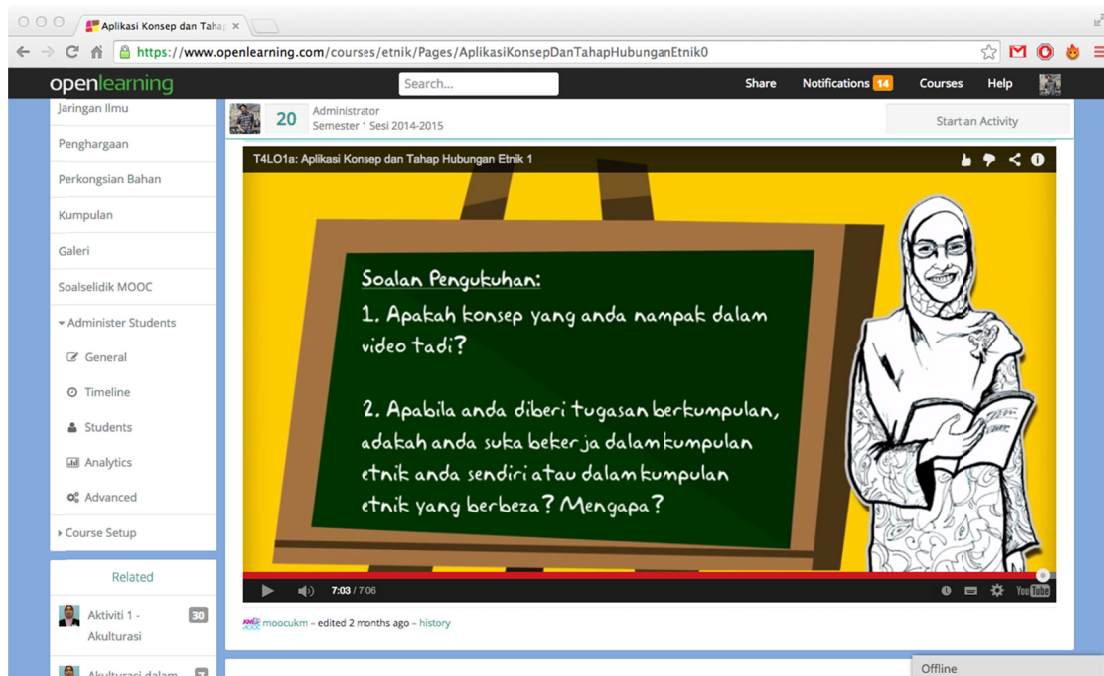


Figure 4. Cartoon version of the instructors

4.4 Factor 4: Communication Style in Video Lectures

The fourth proposed factor to be considered in development of MOOC learning content is the communication style in the video. This relates to the concept of social presence where a number of dimensions have been proposed in the literature, for instance, social context (e.g. informal and formal conversation), online communication, and intimacy (Lyons et al., 2012). Based on the Fitch and Frederici's (2012) paper on the formal language theory, we propose that the *communication style in video lectures* factor is categorized as follows

(Table 1): (i) fully informal language; (ii) mainly informal language; (iii) semi-informal and semi-formal language; (iv) mainly formal language; and (v) full formal language. Formal language indicates that the languages used in the video lectures are more formal and grammatically correct while informal language indicates that the language used is more casual, informal and are not restricted to the language syntax. In the developed MOOC, a more informal communication style was used rather than a formal one. This was implemented as we perceived that an informal communication style could have a positive effect on learning.

4.5 Factor 5: Humor Effect in Video Lectures

The final proposed factor is the humor effect. In our study, we used speech balloons in the video lectures (i.e. live action videos) in an attempt to apply a “humorous effect” in learning. This can be linked to the theory of computational-neural theory of humor or the “theory of the computer model of a sense of humor” by Suslov (1992). The theory states that the humorous effect increases the speed of the processed information into consciousness thus allowing our body to effectively utilize our brain resources. In other words, when elements that contain humor are integrated in the live action videos, the level of consciousness of the learner towards the learning content could increase and further enhance learning. As such, we propose the type of humor effect (using speech balloons) in video lectures to be categorized in three types, which are: (i) smooth-styled speech balloons; (ii) wavy-styled speech balloons; and (iii) zigzag-styled speech balloons, as shown in Table 1. This categorization was based on Rigaud et al.’s (2014) work on speech balloons where they found out that speech balloons shapes and contour can have impact on the speech tone of the character associated with the speech balloons. In our study, all three types of speech balloons were used, which were: smooth, wavy, and zigzag-styled speech balloons. These balloons were aimed to support the live actions and create the humor effect. Smooth-styled speech balloons were used for normal speech, wavy-styled balloons for “thought” and zigzag ones for “exclamations” (Figure 5).



Figure 5. An example of the zigzag-styled speech bubbles used in live action videos

5. Proposed Factors in Development of Learning Tasks for MOOCs

Besides factors in development of learning content, we have also identified five important factors in the development of learning tasks for MOOCs. The factors are categorized according to their respective types, as summarized in Table 2. The factors are derived from the transactional distance theory by Moore (1972) and the pedagogical framework for mobile learning by Park (2011).

Table 2. Proposed factors in the development of learning tasks for MOOCs

Factor	Type				
	1	2	3	4	5
1. Structure of learning tasks	Fully structured	Mainly structured	Semi-structured	Mainly loose structured	Fully loose structured
2. Dialog in learning tasks	Fully instructor-to-learner dialog	Mainly instructor-to-learner dialog	Semi instructor-to-learner dialog and learner-to-learner dialog	Mainly learner-to-learner dialog	Fully learner-to-learner dialog
3. Learner autonomy in learning tasks	Fully instructor controlled	Mainly instructor controlled	Scaffold	Mainly learner controlled	Fully learner controlled
4. Social setting of learning tasks	Individual learning	Paired learning	Cooperative learning	Collaborative learning	-
5. Transactional distance of learning tasks	Very low transactional distance	Low transactional distance	Medium transactional distance	High transactional distance	Very high transactional distance

5.1 Factor 1: Structure of Learning Tasks

The first proposed factor of MOOC learning tasks development is the *structure of learning tasks*. The transactional distance theory by Moore (1972) posits that distance learning courses are influenced by their structure (i.e. *structure of program*). A fully structured course would have a rigid structure and a loosely structured course would be more flexible in terms of its learning goals, content, strategy, and assessment (Moore, 1972; Park, 2011). In other words, as structure of the course is more rigid, it becomes more teacher-centered (Moore, 1972; Park, 2011). Based on the studies of Moore (1972) and Park (2011), we categorized the *structure of learning tasks* factor as the following: (i) fully structured; (ii) mainly structured; (iii) semi-structured; (iv) mainly loose structured and (v) fully loose structured, as displayed in Table 2.

In this study, we apply that assumption to the *structure of learning tasks*. The types of learning tasks developed in the MOOC course were mainly structured loosely. Examples of the learning tasks developed were open-ended questions (Figure 6) and self-reflections. Open-ended questions were chosen as it is beneficial in terms of the diversity and openness of the answers received from the learners (Reja et al., 2003). Research also suggest that these type of questions can potentially avoid bias in terms of learners' answers as compared to closed questions due to fact that closed questions could result in suggesting the answers to the learners (Reja et al., 2003). Meanwhile, self-reflections allowed learners to reflect on their learning and receive peer feedback from their peers. In line with this, Yang (2010) found out that self-reflections can help learners improved their writing skills by conducting self-reflections on the errors during and after the writing process. Although most of the learning tasks were mainly structured loosely, we also included some questions which were structured in the form of online quizzes.

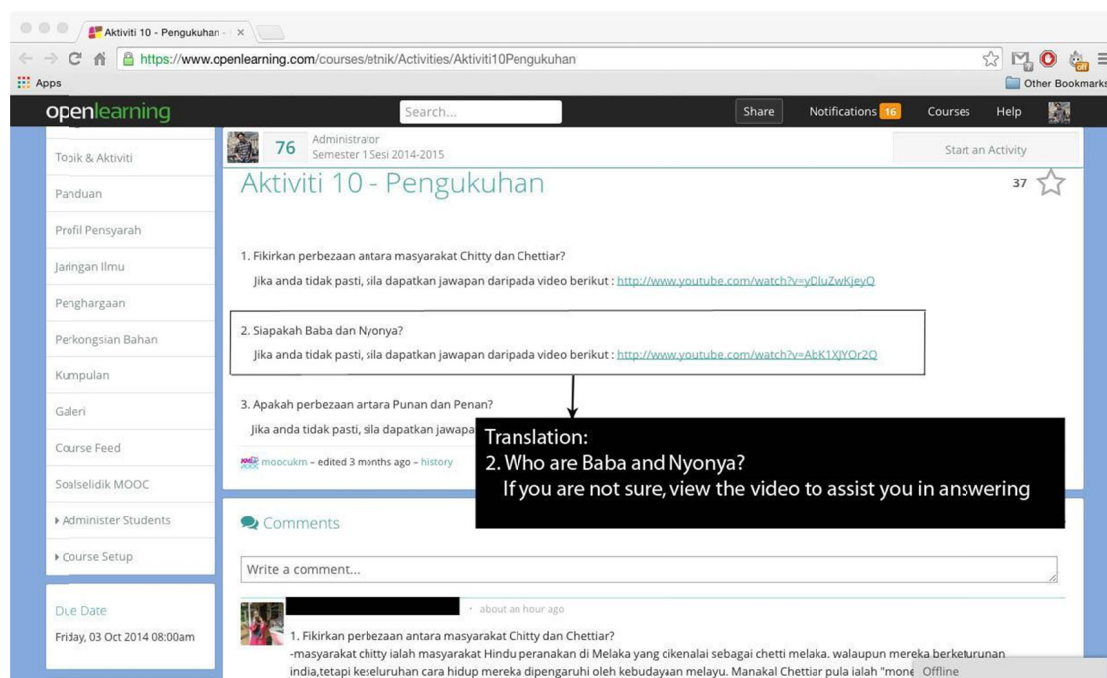


Figure 6. Open-ended questions in learning activities

5.2 Factor 2: Dialog in Learning Tasks

The second proposed factor is the dialog in learning tasks. The transactional distance theory posits that the dialog or communication between learners and instructors have an influence on the transactional distance (Moore, 1972; Park, 2011). We propose five types of dialogs in learning tasks based on the work of Park (2011), which are: (i) fully instructor-to-learner dialog; (ii) mainly instructor-to-learner dialog; (iii) scaffold dialog; (iv) mainly learner-to-learner dialog; and (v) fully learner-to-learner dialog, as shown in Table 2. The first two types (fully and mainly instructor-to-learner dialogs) indicate that dialogs in learning tasks mainly involve communication between instructors and learners while the fourth and fifth types (mainly and fully learner-to-learner dialogs) indicate that communication during learning occur among learners. The *scaffold dialog* type implies that communications are rather intermediate between instructor and learners as well as learners and other learners.

In this study, we applied the assumption to the *dialog in learning tasks* where the MOOC course was developed in an attempt to facilitate high dialog among learners (i.e. learner to learner) rather than instructor-learner dialog. Here, the idea was to promote learners to initiate conversation instead of instructors. This can be linked to Anderson and Dron's (2011) work, where they emphasized the need to reduce instructor's presence in learning in order to open up possibilities for learners to define, generate, or re-assign learning activities and content.

5.3 Factor 3: Learner Autonomy in Learning Tasks

Learner autonomy in learning tasks is the third proposed factor. Learner autonomy is associated with the degree of freedom that is given to the learner in terms of determining goals, process, and evaluation of learning (Moore, 1972; Park, 2011; Hartnett, 2015). The learning factor is proposed to be categorized as follows (Table 2): (i) fully instructor controlled; (ii) mainly instructor controlled; (iii) scaffold; (iv) mainly learner controlled; and (v) fully learner controlled. This categorization is rooted on Frohberg et al.'s (2009) study, where they classified control of learning in mobile learning environments as full teacher control and full learner control (in both ends of the control scale). In the developed MOOC course, the level of *learner autonomy in learning tasks* was categorized by two aspects, which were: activity goals, and activity execution. For learning goals, the goals of the learning activities had a low level of autonomy as the goals were mainly set by instructor. In terms learning task execution, both low and high levels of autonomy were present. Tasks that were low level included quizzes while high level ones included individual reflections based on questions posed by the instructors.

5.4 Factor 4: Social Settings of Learning Tasks

The fourth factor in the development of MOOC learning tasks is the social settings of the learning tasks. Based

on the works of Frohberg et al. (2009) and Ryberg et al. (2010), we propose a *social settings of learning tasks* to be categorized as the following: individual learning, paired learning, cooperative learning, and collaborative learning, as shown in Table 2. For individual learning, the learning tasks would be designed for an individual learner while for paired learning, tasks would be designed for learning in pairs. In cooperative mode, task would be designed so that students conduct their tasks individually and then cooperatively discuss the output with their team members. In collaborative mode, the tasks would be designed so that students perform group tasks collaboratively at the same time. In this study, most of the learning activities were mainly designed for independent learning. Although there were open-based discussions conducted, the discussions were not designed to promote cooperative or collaborative learning rather to promote open-discussions among all the MOOC users.

5.5 Factor 5: Transactional Distance in Learning Tasks

The final proposed factor is transactional distance. We proposed five types of transactional distance in learning tasks based on the studies of Park (2011) and Moore (1972). They are very low transactional distance, low transactional distance, medium transactional distance, high transactional distance, and very high transactional distance, as displayed in Table 2. As theorized by Park (2011), higher transactional distance activities are highly structured and have fewer dialogs while lower transactional distance activities are loosely structured and dialogs are more freely conversed. In our study, the MOOC course was highly structured but the dialogs are more freely conversed. Thus, we categorize the developed MOOC as having a medium transactional distance.

6. Discussion and Implications

Here, we further discuss on some further considerations that could impact the development of a MOOC in terms of learning content and tasks.

6.1 Discussion on Development of MOOC Learning Content

For the first factor, the *types of MOOCs* are an important consideration in the development of MOOC content as there are different pedagogical foundations behind each type of MOOC (i.e. behaviorism for xMOOCs and connectivism for cMOOCs). Although there are quite a number of studies in the literature on MOOCs, there are limited studies that focus on appropriate learning theories and strategies for MOOCs (Kop et al., 2011b). In light of that, the development of MOOCs should cater for the diversity of learners as the learners would come from different backgrounds and have different set of skills and capabilities. Strategies for different regions and cross-regions could be formed to cater for this issue.

For the second factor, the *type of video lectures* could also be an essential factor in developing learning content for MOOCs. In the study, only two types of video lectures were used, which were animated videos and live action videos. It would be for future research to investigate whether animated or live action videos would be effective in learning. In addition, aspects such as having the instructor in videos as talking-heads or excluding them would serve as valuable insights to whether these aspects are important in videos. This could be related to a study by Guo et al. (2014) where they discovered that the use of talking heads were more engaging to students rather than just displaying powerpoint slides in the videos. Furthermore, another consideration that would be interesting is the effectiveness of video lectures in MOOCs. As xMOOC platforms are predominantly consisted of video lectures, there is tendency to perceive video lectures as the most effective tool for learning. Nevertheless, future studies could examine which forms of learning delivery are most appropriate for MOOCs.

For the *integration of local culture* factor, it could be interesting to find out whether this is important for learning or not and to what extent its integration could affect learning. This would be a critical issue as some cultural values that are integrated in video lectures could be important to certain countries and regions but not to others. In terms of *communication style in video lectures*, educators could conduct investigations on both formal and informal types of communication. In the extreme side of formal language, using excessive formal language could have a negative impact as the lectures would have decreased the appeal of lecture. On the other hand, excessive use of informal language could cause students to perceive that lecture would be too “playful” and “not serious.” As for *humor effect (using speech balloons) in video lectures* factor, it would be worth to study whether humor would actually enhance or disrupt learning. Levels of humor would also be another factor that could be examined (i.e. excessive humor).

6.2 Discussion on Development of MOOC Learning Tasks

For the *structure of learning tasks*, the factor could be essential for the development of learning tasks in MOOCs. The factor deals with whether learning tasks are to be structured loosely or not. A structured learning task could be beneficial as students are somewhat guided to accomplishing a fixed learning goal. In line with this, Nievelstein et al. (2013) reported that novice learners worked better with structured learning problems rather

than unstructured problems due to the fact that unstructured problems were harder to master. However, structured problems are usually associated with lower-order thinking tasks and in most cases, the aim of learning would be to achieve a higher-order of thinking (King, 2008). This could be provided by unstructured learning, where the learning is more “open” and students would require higher level of problem-solving skills to complete a learning task. Nevertheless, as unstructured learning tasks would have less structure, there is a tendency for students to get “lost” without proper guidance from the instructor or peers. Kop et al. (2011b) revealed that some learners in newcomers to cMOOCs found that management of a high level of resources and contributions by other MOOCers were confusing and overwhelming.

In terms of the *dialog in learning tasks* factor, this could be an important factor when developing MOOC learning tasks. There is an abundance of studies in the literature that focus on shifting from teacher-centered to learner-centered learning (i.e. dialogs in learning) (Dabbagh and Kitsantas, 2012; Norman et al., forthcoming 2015), yet an interesting perspective would be to investigate whether this implies to MOOCs or not. As stated previously, MOOCs have been reported to cause confusion to learners (Kop et al., 2011b) and the presence of instructors could help curb this issue. This could also be linked to the *autonomy of learners* factor, where it would be beneficial to investigate the effective level of autonomy to be given to MOOCers to enhance learning.

For the *social settings in learning tasks* factor, the social settings designed in learning tasks could be crucial in learning. In this study, we categorize the factor according to individual, paired, cooperative, and collaborative learning. All these types of social settings have their benefits and drawbacks, and it would be interesting to identify as to which type is effective in which learning context (Ally, 2004; Nordin et al., 2010; Embi and Nordin, 2013). In addition, another potentially important aspect is to indicate the level of voluntariness of learners in applying the social setting for learning. For example, in collaborative learning, learners would be somewhat be “forced” to collaborate among one another and an investigation on this matter would be insightful for MOOC development. For the final factor, it would be interesting to indicate whether *transactional distance* has a significant impact on MOOC learning and if so, would higher or lower transactional distance be better for learning.

7. Conclusion and Future Directions

In this paper, we have proposed several factors that could be useful in the development of Asian MOOCs based on the MOOC that we developed for an ethnic relations course. Although the factors proposed were based on a MOOC developed in Asian context, the factors could be useful for MOOC development outside of Asia. Future directions for MOOC development are as follows. First, adaptive feedback during learning could be useful in assisting learners that need assistance in learning. Adaptive feedback could also be provided as triggers for learning in an attempt to increase the attention level of learners. For example, Grunewald et al. (2013) proposed that MOOCs are tailored to suit different learning styles. In one of the recommendations, discussion triggers were recommended for diverging learning style learners. In a MOOC discussion, social network analysis could be collected to assess learners’ level of participation. If a learner’s participation level is low, adaptive feedback could use discussion triggers to attract learner attention and engagement in the discussion. Second, pedagogical agents could be employed as virtual tutors to increase the level of social presence in learning. It would be interesting to investigate whether the agents would be helpful in learning and it would be beneficial to identify whether human-like or cartoon-like pedagogical agents could enhance learning. Finally, skills assessment before taking a MOOC course could be useful. A learner that has no experience using a MOOC would possess a different level of skills as compared to a learner who has used a MOOC before. An adaptive-based MOOC could use the skills assessment and provide learning content and tasks which are suitable to a learner’s level of skills, whether low, intermediate, or advanced.

When applying the factors, some limitations should also be kept in mind. First, the proposed factors for MOOC development has not been empirical tested. Future research could investigate whether these factors are important in development of MOOCs. Second, these factors were proposed based on a MOOC course for ethnic relations. A different domain of knowledge could have resulted in different factors. For example, if the domain was mathematics, more technical factors could have been elicited due to the nature of the domain. Third, learning content was only developed in the form of text, 2D images, and videos. Applying technologies such as mobile augmented reality and location-based technology could be promising. Fourth, our study used an xMOOC platform. It would be interesting to investigate whether cMOOCs would have an impact on the factors. Finally, the transactional distance theory was used as a basis for eliciting the factors. A different pedagogical strategy could have resulted in different results. In sum, we hope that the proposed factors could assist future educators who are interested in developing future MOOCs for Asia as well as for the global community.

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