Journal of Engineering Science and Technology
Vol. 16, No. 4 (2021) 3576 – 3587

DESIGNING A cMOOC FOR ACADEMIC COMMUNITIES TO SUPPORT AWARENESS OF SCAFFOLDING PROCEDURE ON SHARING KNOWLEDGE

RIRIEN KUSUMAWATI[1,2,*], PUNAJI SETYOSARI[3],
I. NYOMAN SUDANA DEGENG[3], SAIDA ULFA[3]

[1]Department of Informatics Engineering, Universitas
Islam Negeri Maulana Malik Ibrahim Malang, Malang, Indonesia
[2]Department of Educational Technology, Universitas
Negeri Malang, Malang, Indonesia
[3] Department of Educational Technology, Universitas
Negeri Malang, Malang, Indonesia
*Corresponding Author: ririen.kusumawati@ti.uin-malang.ac.id

Abstract

The development of collaborative media for a community is an essential requirement as a strategic asset. Collaborative activities in the academic community require knowledge-sharing capabilities. Knowledge sharing capabilities and improving academic-community cooperation in a collaborative learning environment require appropriate scaffolding procedures with help from digitalization, one of which is using MOOCs. This help will create thoughts inside a project of condition similarity. The implementation of scaffolding that embedded in synchronous and asynchronous features on the cMOOC, a MOOCs-based software, results in strengthening the academic community. The results showed that there were conditions in the academic community members who were motivated to use features sustainably. It is concluded that the development and the use of cMOOC is really helpful towards students' scaffolding procedure on knowledge sharing as students have got used to playing gadgets.

Keywords: cMOOC, Collaboration, Community, Knowledge sharing, Scaffolding.

1. Introduction

E-learning is a new educational paradigm through the use of information and communication technology (ICT). Most universities worldwide make e-learning a strategic tool for making education available to everyone without space and time constraints [1]. Massive Open Online Courses (MOOCs) have been essential in coordinating the new e-learning and have gained widespread prominence in numerous universities worldwide. MOOC develops collaborative models of learning through interactive user forums that can help develop academic communities [2, 3]. Massive Open Online Courses (MOOCs) greatly influenced the way students navigate digital content, incentive generating, and learning challenges. This change can creatively and innovatively update and develop the knowledge and skills competencies of students. MOOCs utilize free and open access to digital material through an online supported system [2, 4]. MOOCs' effectiveness as a virtual learning environment can be supported by the students ' active interaction in group learning activities. Several successful experiences with large projects have proven the effects of collaborative learning services. Research on collaborative learning approaches in MOOCs was performed by providing perspectives on collaborative learning systems and large-group collaboration consequences. All of this can encourage the use and understanding of the education world's MOOCs paradigm [5]. CMOOCs are a type of connectivism-based MOOCs that use interaction-centered learning in complex environments of knowledge [6]. In the education world, MOOCs' awareness is inseparable from the importance of sharing knowledge in learning activities.

Knowledge sharing plays an important role in the academic community's performance at higher education institutions. The practice of exchanging information would have exceptional significance in the academic community. It will improve the capacity of members of the academic community to solve different issues and problems [7]. Knowledge sharing is the way and mechanism for individuals and groups to share information among themselves and to build new information in the academic community together [8]. Sharing of knowledge depends on the willingness of academic community members to share the knowledge they have voluntarily [9]. Knowledge sharing behavior in the academic community can also increase trust among members of the academic community to create a competitive and creative educational community environment in the place of learning. Academic attitudes and behavioral control to the sharing of knowledge are essential determinants [10, 11]. Research on creating and developing learning communities in an online virtual environment shows that learning communities can improve learners' competencies in practical community situations [12]. From the emergence of similarity projects among academic community members, building knowledge sharing activities within the academic community will begin.

The similarity project is an effort to create the same conditions in the academic community. Several studies have identified several discussion activities. The trend of discussion in research shows the collaboration between students. Research that analyzes and encodes synchronous student discussions, among others, reinforces the interaction between them and related articles, social interactions, and interactions related to system operations in evaluating the impact of the program on interactions between students [13]. Research shows: (1) students have a positive attitude towards the program and continuous encouragement to use the method in future learning assignments; (2) the learning of product review indicates that learners generate better content and coordinate with support systems; (3) The system's procedural facilitation succeeded in scaffolding students to communicate more in the articles-related field of interaction. It also discusses the limitations and directions for future research. This research analyzes and encodes student interactions as a system effect through synchronous chat to evaluate student interactions with articles, social interactions, and interactions with the operating system.

Learning that uses discussion in collaboration has challenges in its implementation. Several studies report on the constraints of students conducting online discussion assignments in Synchronous Computer-Mediated Communication (CMC) systems (NetMeeting) [14]. In collaborating using discussion, found that students' awareness of the conceptions that characterize effective pedagogical interactions is essential [15]. The basis for thinking about the discussion in several studies is that collaborative argument is a condition of dialogue between teachers and students or fellow students. Examining whether the use of synchronous CMC will satisfy the conditions of collaboration, Veerman et al. [16] describes that learners' dialogs are defined in terms of their positive and argumentative interventions and their emphasis on the interpretation of concepts. So that research has shown that learning that occurs in students still need focus analysis concerning argumentation. Learning instructions do not meet the expectations of collaboration.

Collaborative support through scaffolding procedures is needed in the discussion. Students tend to need support in order to concentrate more on what needs to be achieved, rather than general argumentation. However, they may need assistance in maintaining summaries, monitoring their conversations, and controlling their interfaces. Text-based electronic communication tends to be prone to issues that might occur, because it may interrupt substantive interactions. Some research has led to learning activities using electronic discussions that require strengthening the analysis of the focus of procedures about argumentation [17].

Online learning also demands that students be independent and participate in the learning process. Research on 'self-regulatory behavior of students in online video-based learning environments shows that an enhanced video learning environment can increase the learning output of learners and render interactive notes [18]. Scaffolding in the online environment offers method orientation and synchronous online chat rooms to promote collaborative writing activities in real-time. This helps users to work in sync over the internet on shared writing assignments. The desire to be special requires personal discovery. Such as the need to evaluate and code students' synchronous chat with three categories, namely 1) knowledge-related interactions [19], 2) social interactions of students [20], and 3) context-related interactions [21] as a phase to assess the impact of the collaborative system on students' learning in interactive discussion forums.

Scaffolding procedures in video form strengthen the opportunity to communicate according to students' characteristics. Video is widely used in education and training, but due to the transient nature of the knowledge transmitted, it may cause specific difficulties for students in the learning process [22]. Learner control can be given in cognitive overload (e.g., pause button). Apprentices who are beginners may not be knowledgeable enough to know when to stop the video -considering that systematic learning requires memorizing structured and distinct action sequences. Biard et al. [22] evaluated the premise that the availability of control buttons is not appropriate for inexperienced students and interferes with systematic measures that make it less successful in clinical skills training. So that procedural scaffolding involves segmentation in the video material of learning. Segmented learning videos are a way for beginner students to strengthen the representation of memory procedures and reduce cognitive load. Research on the impact of scaffolding in learning shows that using scaffolding can promote the freedom of the students ' perception of being more responsible and involved in their own chosen activities, get the incentive to learn, and have the opportunity to share what they have learned [23]. Considering the aforementioned rationale, this study aimed to design a MOOCs-based application in order to enhance students' awareness of scaffolding procedure on knowledge sharing. The concept of cMOOC is going to be explained as follows.

2. cMOOC Concept

cMOOC (Connectivism Massive Open Online Courses) is, in principle, building a connected MOOC. Connectivism is a paradigm that describes a network that focuses on learning that occurs through the connections made between the learner and the learning object [24]. Connectivism on cMOOC where knowledge is distributed over network connections, thus learning can build and traverse these network connections.

Connectivist learning is learning that is centered on interaction. A framework that describes the interaction and cognitive involvement in connective learning is constructed using logical reasoning techniques. The framework serves as a conceptual model for understanding, analyzing, and adapting the characteristics and principles of interaction in the context of connectivist learning in the cMOOC environment [6]. cMOOC is based on a connectivist approach that promotes learning through collaboration, production, sharing, and the creation of peer-to-peer connections. Connections arise when individuals share a common goal; connected communities are formed and generate resources [25].

The connectivism approach is based on emerging technologies that are embedded in networks. Figure 1 shows a visual model for learning in the cMOOC environment.

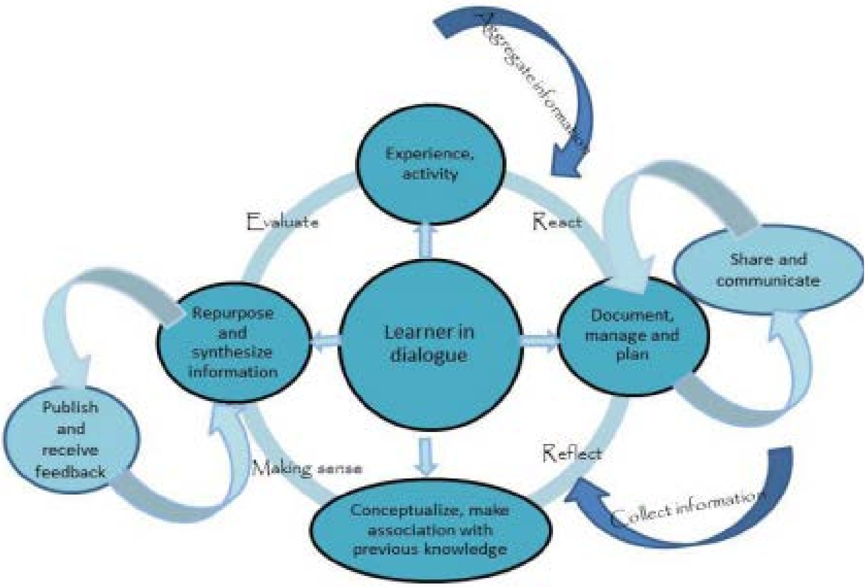

Fig. 1. Model for learning in an open environment [26].

Activities in cMOOC fall into four categories [26]: aggregation (gathering information and resources on the MOOC website and then adding it to a daily bulletin sent to all community members); remixing (where connections are made and documented via blogging, social bookmarking, or tweeting); repurposing (often referred to as constructivism, in which learners then make their internal connections); and feeding forward (i.e., sharing of newly produced resources and new connections with others).

3. Software Design

Figure 2 shows the flow diagram of the cMOOC Community web design. The explanation of Figure 2 is as follows: (1) the program starts the application after users enter a web address; (2) login process - Users are users who have registered (signed up), logged in to the Parent Community Activities (self-identification, self-ability, desired community); (3) learning experience of community knowledge - find out, collect, identify, and explore information / knowledge about community characteristics; (4) self-assessment of community knowledge - self-assessment activities on the understanding of community characteristics; (5) self-determined of selected community - selecting and determining the appropriate type of new community based on the results of the self-assessment, and recommendation of community selection from the community leader; (6) users decide the desired community themselves; (7) Sharing Learning Experience - Each member of the community shares experiences / knowledge in the existing discussion forums; (8) New Project Formulation - The sharing forum allows the formation of new projects; (9) New Learning Experience - The results of the new project are shared regarding the characteristics and specifications of the new product; (10) Continuation analysis is carried out to examine the novelty of community thinking as a basis for forming a new community; (11) New communities formed from the emergence of new projects; (12) Implementation of the community cMOOC.

4. Results and Discussion

The results of the analysis of the characteristics show that some learning using collaboration cannot meet learning expectations. If understood as the character of students, students from the Department of Informatics Engineering, Universitas Islam Negeri Maulana Malik Ibrahim Malang, East Java, Indonesia seem to need support to focus on something that should be done rather than listening to explanations that are general or tend to be global. In specific terms, IT students need support in the form of summaries, recording their discussions, and managing their interface. Text-based electronic communication does not appear capable of creating sensitivity to participation in problem-solving and undermining constructive experiences in the discussion.

Within the context of the Department of Information Engineering at the university studied, there are procedural subjects. The courses have an impact on students' thinking styles. To solve problems, students are familiar with programming algorithm patterns. Students are rather obedient towards learning patterns and sequences in the context of learning. Online discussions are difficult to realize because students focus on what needs to have done, not how students produce the best learning experience.

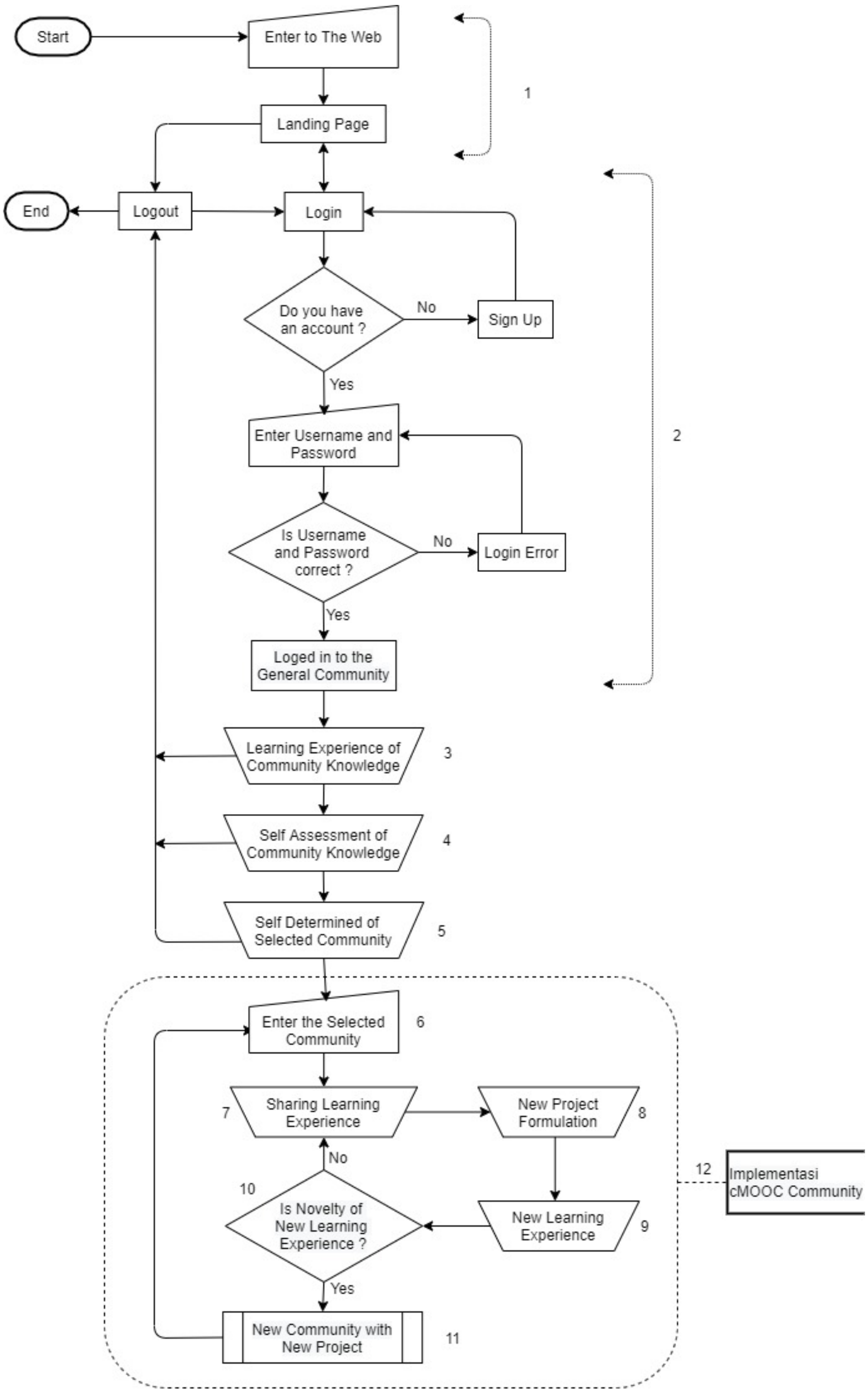

Fig. 2. Flow chart of web cMOOC community design.

Learning design requires a focus on what if students get short information from anyone, including lecturers in the form of procedural commands, but has a deep meaning. The results of the survey (table 1) indicate that students learn within the academic community to facilitate collaboration with the ability to receive feedback from others'

The dominance of capable students from the sparse to the most often seen level of about 94.2% of students did not feel difficulties when receiving input. Technical and procedural abilities make students able to accept scaffolding procedures. So that it's easy to give scaffolding and how to build similarity projects about content or problems in the Department of Information Engineering through other people.

Table 1. Student condition.

Statement	**Vo (%)**	**O (%)**	**R (%)**	**Not (%)**
The ability of students to receive information from others	25.3	47.1	26.4	1.2
Mapping Students with Technical Skills	26.7	44.2	26.4	2.7
Ability to create ideas and new ideas from collaboration	25.6	64	9.3	1.1

Vo: **V**ery **o**ften (almost all activity), O: **O**ften (half of the activity), R: **R**arely (less than half the activity), Not: do **Not** use

Students have massively demonstrated their performance as figures who can collaborate as shown by the ability to accept other people's input, translate, and construct needs in building information more effectively. Cognitively, some students have difficulty yet most of them are able to receive feedback clearly through procedural, technical steps. Reflected in technical ability (table 1). The ability to generate new ideas from students is very objective (table 1). When collaborating, students can develop a learning product for other students. Students are significantly able to create material for completing an academic project.

Figure 3 shows the BPMN model for implementing community-oriented cMOOC knowledge sharing. BPMN standards are used to design workflows that are centered on community cMOOC activities. Model development the scaffolding procedure (Fig. 3) presented in BPMN. This model is based on students' ability to receive information from any source and re-share the information in their community. Provision of procedural scaffolding in the academic community web environment will enable students to accept the procedural scaffolding they receive, discuss, and share knowledge within the academic community.

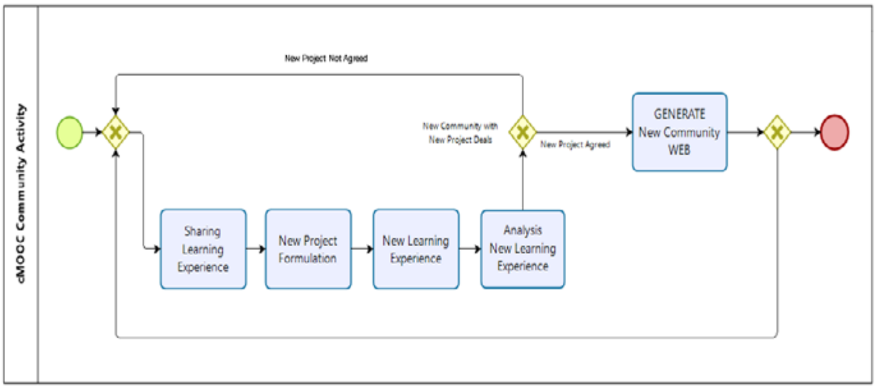

Fig. 3. BPMN for cMOOC community activity.

Collaboration is an essential key in 21st-century learning. Global conditions are connected globally, the exchange of thoughts is becoming more frequent, and more students are collaborating on similarity [27, 28]. The right conditions and content of information and written with proper procedures will strengthen user understanding, especially regarding the same specific project [29]. Managing conditions and information content belonging to a particular community intended to solve problems for the academic community itself. Members of the academic community will convey information and scientific ideas accurately and efficiently to the project at hand [30]. Projects in the academic community are efforts to do collaborative work. So logically, many thoughts or actions made by people are collaboratively done, rather than done individually [31, 32]. As a case, it can see the completion of the same project in the development of a similar project which is about managing an information system carried out by students consisting of 6 parallel classes and four different classes. That is because in the information age, providing information in written form is part of the technical work in all careers [30].

Every development of the ability to convey information through video or written requires specific skills. A mainly technical written report in addition to requiring skills in information manipulation also requires the knowledge to abstract content [33]. They also need to have capabilities as they define the objects they write as "main competencies." The main competencies include (1) collaborative use of resources (both linguistic and technological), (2) relationships with various communities, and (3) autonomous action.

Similarity Project is a picture of a learning environment that adjusted to the workplace environment. Thus, collaborative teams also allow people to use real-time communication devices (such as chat, video conferencing, webinars). It was done as an effort to build direct feedback of different types or to make decisions. Yet when viewed from collaborative and communicative education, procedural learning is often associated with conventional learning [34]. Procedural learning is often related to monotonous learning behavior, lack of interaction, and lack of dialogue with other learners [35]. Procedural learning also considered having only a systematic nature, such as the case of the process of how to do writing activities that use technical tutorials to help novice writers [29].

Students majoring in Informatics Engineering who have varying degrees of mastery of programming languages, use specific programming languages to solve problems through collaborative techniques. Students need scaffolding procedures for how to collaborate with less proficient students, in addition to getting scaffolding how to do technical activities. This is done similar to which suggests that the main challenge presented in the information is how to create new teaching strategies to overcome the coordinative, poly-contextual, cross-disciplinary work that links activities separated by time, space, organization, and goals together. In the context of procedural scaffolding, there is a great need for students to build interactive, multi-task, and multi-user learning environments where web systems developed, which can help practice collaboration in synchronous interactions effectively and efficiently.

The learning environment for procedural scaffolding is an online discussion feature. Online discussion is a feature that is often used in learning [36]. Advances in computer technology have made researchers and lecturers try to provide support for collaborative activities to increase views on similarity project cases in the field of joint writing in the common area (for example, Rice [28]; Elola [37]; Parker and Chao [38]). As an example, Rice [28] proposes a collaborative method that can run in practice discussions on Web 2.0. Through online discussions, it has helped student collaboration to better address the context of similarity projects. In addition to being a practical tool, online discussion is also creating a dialogic situation Rice [28]. Learning will provide scaffolding procedures for strengthening individual knowledge and towards how to enhance experience collectively.

Collaboration has been well established in the humanities field. This condition has found in the Similarity Project observation in the field of Novel writing. However, as stated by Gorsky and Caspi [39], collaboration must also be strengthened by improving the procedures for the students to participate more in online discussions and web-based resources. Although this does not necessarily lead to improved learning outcomes, it will boost learning on the need to know the key factors in online interaction procedures.

Collaborative learning in the condition of similarity project required procedural learning and included in the discussion feature online. Larsen-Freeman [40] argues that group configuration is not the main as a constructor of collaborative learning becomes distinctive, but procedural instructions in collaborating between learners with learners or learners and instructors are essential. Nunan [41] also suggested crucial questions to consider in collaborative learning that what classroom organizational patterns and types of class assignments, where students give procedural knowledge of how to negotiate to mean. In some cases, the similarity in the humanities field, scaffolding procedures are following how to solve together in the language field [41]. The online discussion feature is a recommendation for the future of how to improve collaborative procedures in synchronous environmental interactions. Englert et al. [42] also have the same view of technology needs that provide procedural facilities and encouragement to bring about an increase in writing projects. Therefore, to extend computer-supported collaboration capabilities, the study proposes the existence of scaffolding procedures in similarity projects supported by technology and online synchronous discussions.

5. Conclusions

Scaffolding procedure is feasible to apply in learning in the context of similarity projects in the academic community environment of the Department of Informatics Engineering, Universitas Islam Negeri Maulana Malik Ibrahim Malang, East Java, Indonesia. There are learning strategies using scaffolding procedures intended to provide the ability and provide motivation for students to decide for themselves what is learned and done in a particular work environment. The ability to collaborate requires the support of a useful synchronous online discussion feature. Learning environments that are supported by collaborative systems need to develop continuously. The advantage of scaffolding procedures is to increase the collective ability of collaboration in similarity projects. Scaffolding procedures include how to strengthen the process and how to use synchronous online discussion rooms to facilitate collaborative practice so that it allows many students to work in sync through synchronous discussion features. The need for scaffolding procedures has an essential role in enhancing the ability of collaboration in conditions of solving shared problems in the learning environment under conditions of similarity projects.

References

1. Sohrabi, B.; Vanani, I.R.; and Iraj, H. (2019). The evolution of e-learning practices at the University of Tehran: A case study. *Knowledge Management & E-Learning: An International Journal*, 11(1), 20-37.
2. Cirulli, F.; Elia, G.; Lorenzo, G.; Margherita, A.; and Solazzo, G. (2016). The use of MOOCs to support personalized learning: An application in the technology entrepreneurship field. *Knowledge Management & E-Learning: An International Journal*, 8(1), 109-123.
3. Daneji, A.A.; Ayub, A.F.M.; and Khambari, M.N.M. (2019). The effects of perceived usefulness, confirmation and satisfaction on continuance intention in using massive open online course (MOOC). *Knowledge Management & E-Learning*, 11(2), 201-214.
4. Cirulli, F.; Elia, G.; and Solazzo, G. (2017). A double-loop evaluation process for MOOC design and its pilot application in the university domain. *Knowledge Management & E-Learning: An International Journal*, 9(4), 433-448.
5. Claros, I.; Echeverria, L.; and Cobos, R. (2015). Towards MOOCs scenaries based on collaborative learning approaches. *Proceedings of 2015 IEEE Global Engineering Education Conference (EDUCON)*, Tallinn, Estonia, 989-992.
6. Wang, Z.; Anderson, T.; Chen, L.; and Barbera, E. (2017). Interaction pattern analysis in cMOOCs based on the connectivist interaction and engagement framework. *British Journal of Educational Technology*, 48(2), 683-699.
7. AlShamsi, O.M.; and Ajmal, M.M. (2019). Knowledge sharing in technology-intensive manufacturing organizations: Analytic hierarchy process approach. *Business Process Management Journal*, 25(5), 802-824.
8. Nooshinfard, F.; and Nemati-Anaraki, L. (2014). Success factors of inter-organizational knowledge sharing: A proposed framework. *The Electronic Library*, 32(2), 239-261.
9. Goh, S.K.; and Sandhu, M.S. (2013). Knowledge sharing among malaysian academics: Influence of affective commitment and trust. *Electronic Journal of Knowledge Management*, 11(1), 38-48.
10. Fauzi, M.A.; Tan, C.N.L.; and Ramayah, T. (2018). Knowledge sharing intention at Malaysian higher learning institutions: The academics' viewpoint. *Knowledge Management & E-Learning: An International Journal*, 10(2), 163-176.
11. Rahman, M.S.; Daud, N.M.; and Raman, M. (2018). Knowledge sharing behaviour among non-academic staff in higher learning institutes: The role of trust and perceived risk. *Knowledge Management & E-Learning: An International Journal*, 10(1), 113-124.
12. Tang, J.T.; Lan, Y.J.; and Chang, K.E. (2012). The influence of an online virtual situated environment on a Chinese learning community. *Knowledge Management & E-Learning: An International Journal*, 4(1), 51-62.
13. Yeh, S.W.; Lo, J.J.; and Huang, J.J. (2011). Scaffolding collaborative technical writing with procedural facilitation and synchronous discussion. *International Journal of Computer-Supported Collaborative Learning*, 6(3), 397-419.

14. Veerman, A.L.; Andriessen, J.E.; and Kanselaar, G. (2000). Learning through synchronous electronic discussion. *Computers & Education*, 34(3-4), 269-290.
15. Petrenko, M. (2015). Theoretic bases of pedagogical interaction. *Procedia-Social and Behavioral Sciences*, 214, 407-413.
16. Veerman, A.L.; Andriessen, J.E.; and Kanselaar, G. (2000). Learning through synchronous electronic discussion. *Computers & Education*, 34(3-4), 269-290.
17. Nicolson, R.I.; and Fawcett, A.J. (2007). Procedural learning difficulties: Reuniting the developmental disorders? *TRENDS in Neurosciences*, 30(4), 135-141.
18. Delen, E.; Liew, J.; and Willson, V. (2014). Effects of interactivity and instructional scaffolding on learning: Self-regulation in online video-based environments. *Computers & Education*, 78, 312-320.
19. Wiens, P.D.; Hessberg, K.; LoCasale-Crouch, J.; and DeCoster, J. (2013). Using a standardized video-based assessment in a university teacher education program to examine preservice teachers knowledge related to effective teaching. *Teaching and Teacher Education*, 33, 24-33.
20. Smith, E.P. (2019). *Teachers' and students' perspectives about patterns of interaction in blended learning discussions.* Minneapolis: Walden University.
21. Alles, M.; Seidel, T.; and Gröschner, A. (2019). Establishing a positive learning atmosphere and conversation culture in the context of a video-based teacher learning community. *Professional Development in Education*, 45(2), 250-263.
22. Biard, N.; Cojean, S.; and Jamet, E. (2018). Effects of segmentation and pacing on procedural learning by video. *Computers in Human Behavior*, 89, 411-417.
23. Sholeh, A.; Setyosari, P.; and Cahyono, B.Y. (2019). Effects of scaffolded voluntary reading on EFL students' reading comprehension. *International Journal of Instruction*, 12(4), 297-312.
24. Siemens, G. (2005). Connectivism: A learning theory for the digital age. *International Journal of Instructional Technology and Distance Learning*, 2(1), 3-10.
25. Yeager, C.; Hurley-Dasgupta, B.; and Bliss, C.A. (2013). CMOOCs and global learning: An authentic alternative. *Journal of Asynchronous Learning Networks*, 17(2), 133-147.
26. Kop, R. (2011). The challenges to connectivist learning on open online networks: Learning experiences during a massive open online course. *International Review of Research in Open and Distributed Learning*, 12(3), 19-38.
27. Hernández-González, Y.; García-Moreno, C.; Rodríguez-García, M.Á.; Valencia-García, R.; and García-Sánchez, F. (2014). A semantic-based platform for R&D project funding management. *Computers in Industry*, 65(5), 850-861.
28. Rice, J.A. (2009). Devising collective knowledges for the technical writing classroom: A course-based approach to using Web 2.0 writing technologies in collaborative work. *IEEE Transactions on Professional Communication*, 52(3), 303-315.

29. Kelly, J. (2003). " What's with the musty, old tent?" Using technical writing to promote peer-and self-evaluation. *Reading &Writing Quarterly*, 19(4), 363-376.
30. Reis, R.A. (1997). Bite-size morsels introduce technical writing the easy way. *Tech Directions*, 57(2), 43-45.
31. Duin, A.H. (1991). Computer-supported collaborative writing: The workplace and the writing classroom. *Journal of Business and Technical Communication*, 5(2), 123-150.
32. Oliver, A.L.; Montgomery, K.; and Barda, S. (2019). The multi-level process of trust and learning in university-industry innovation collaborations. *The Journal of Technology Transfer*, 45(3), 758-779.
33. Johnson-Eilola, J. (1996). Relocating the value of work: Technical communication in a post-industrial age. *Technical Communication Quarterly*, 5(3), 245-270.
34. Carter, M.; Anson, C.M.; and Miller, C.R. (2003). Assessing technical writing in institutional contexts: Using outcomes-based assessment for programmatic thinking. *Technical Communication Quarterly*, 12(1), 101-114.
35. Nagelhout, E. (1999). Pre-professional practices in the technical writing classroom: Promoting multiple literacies through research. *Technical Communication Quarterly*, 8(3), 285-299.
36. Palmer, S.; Holt, D.; and Bray, S. (2008). Does the discussion help? The impact of a formally assessed online discussion on final student results. *British Journal of Educational Technology*, 39(5), 847-858.
37. Elola, I. (2010). Collaborative writing: Fostering foreign language and writing conventions development. *Language Learning & Technology*, 14(3), 51-71.
38. Parker, K.; and Chao, J. (2007). Wiki as a teaching tool. *Interdisciplinary Journal of E-Learning and Learning Objects*, 3(1), 57-72.
39. Gorsky, P.; and Caspi, A. (2005). Dialogue: A theoretical framework for distance education instructional systems. *British Journal of Educational Technology*, 36(2), 137-144.
40. Larsen-Freeman, D. (2000). *Techniques and principles in language teaching*. Oxford: Oxford University.
41. Nunan, D. (1992). *Collaborative language learning and teaching*. Cambridge: Cambridge University Press.
42. Englert, C.S.; Zhao, Y.; Dunsmore, K.; Collings, N.Y.; and Wolbers, K. (2007). Scaffolding the writing of students with disabilities through procedural facilitation: Using an Internet-based technology to improve performance. *Learning Disability Quarterly*, 30(1), 9-29.