



Universitätsverlag Potsdam

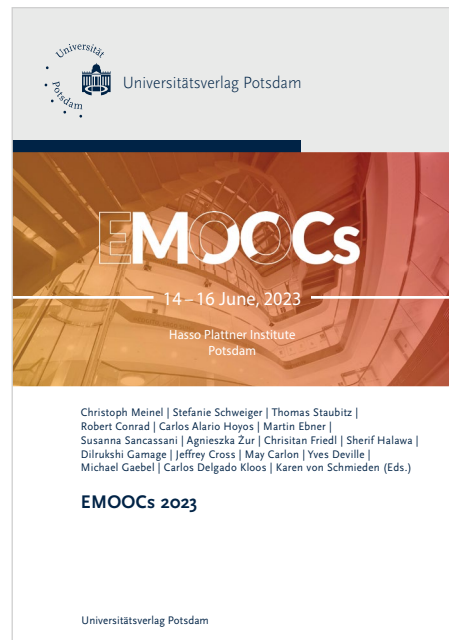
Article published in:

Christoph Meinel, Stefanie Schweiger, Thomas Staubitz, Robert Conrad, Carlos Alario Hoyos, Martin Ebner, Susanna Sancassani, Agnieszka Żur, Christian Friedl, Sherif Halawa, Dilrukshi Gamage, Jeffrey Cross, May Kristine Jonson Carlon, Yves Deville, Michael Gaebel, Carlos Delgado Kloos, Karen von Schmieden (Eds.)

EMOOCs 2023

2023 – vii, 350 p.

DOI <https://doi.org/10.25932/publishup-57645>



Suggested citation:

Halvdan Haugsbakken; Marianne Hagelia: An asynchronous cooperative leaning design in a Small Private Online Course (SPOC), In: Christoph Meinel, Stefanie Schweiger, Thomas Staubitz, Robert Conrad, Carlos Alario Hoyos, Martin Ebner, Susanna Sancassani, Agnieszka Żur, Christian Friedl, Sherif Halawa, Dilrukshi Gamage, Jeffrey Cross, May Kristine Jonson Carlon, Yves Deville, Michael Gaebel, Carlos Delgado Kloos, Karen von Schmieden (Eds.): EMOOCs 2023 : Post-Covid Prospects for Massive Open Online Courses - Boost or Backlash?, Potsdam, Universitätsverlag Potsdam, 2023, S. 67–76.

DOI <https://doi.org/10.25932/publishup-62210>

This work is licensed under a Creative Commons License: Attribution 4.0

This does not apply to quoted content from other authors. To view a copy of this license visit:

<https://creativecommons.org/licenses/by/4.0/>

An asynchronous cooperative leaning design in a Small Private Online Course (SPOC)

Halvdan Haugsbakken and Marianne Hagelia

Østfold University College
B R A Veien 4, 1757 Halden, Norway
Halvdan.Haugsbakken@hiof.no | Marianne.Hagelia@hiof.no

This short paper sets out to propose a novel and interesting learning design that facilitates for cooperative learning in which students do not conduct traditional group work in an asynchronous online education setting. This learning design will be explored in a Small Private Online Course (SPOC) among teachers and school managers at a teacher education. Such an approach can be made possible by applying specific criteria commonly used to define collaborative learning. Collaboration can be defined, among other things, as a structured way of working among students that includes elements of co-laboring. The cooperative learning design involves adapting various traditional collaborative learning approaches for use in an online learning environment. A critical component of this learning design is that students work on a self-defined case project related to their professional practices. Through an iterative process, students will receive ongoing feedback and formative assessments from instructors and follow students at specific points, meaning that co-constructing of knowledge and learning takes place as the SPOC progresses. This learning design can contribute to better learning experiences and outcomes for students, and be a valuable contribution to current research discussions on learning design in Massive Open Online Courses (MOOCs).

1 Introduction

Initially, Massive Open Online Courses (MOOCs) focused on collaboration, as exemplified by cMOOCs and the work of Siemens and Downs completed at the end of the 2000s. Early MOOCs, however, did not appear to be organized in the conventional way typically associated with collaboration, as they did not require students to work in groups. Instead, they utilized the affordances of actors, ties, and resources embedded in social networks, scalability, and co-laboring to facilitate the co-construction of learning and knowledge in online education. This was achieved, in part, by incorporating learning activities where students provide feedback to

each other, such as discussion threads and student peer-assessment, representing acts of co-laboring without traditional group work. Later on, incorporating such approaches in conventional xMOOCs presented challenges, as evidenced by the limited research available on collaborative approaches (e.g. [1, 18]).

Despite these challenges, research indicates that collaborative learning can enhance student outcomes, fostering self-efficacy and self-organization [2]. Online courses can utilize discussion forums and peer assessments. With this in mind, this short paper examines a novel asynchronous cooperative learning design approach to be organized in a Small Private Online Course (SPOC). This approach integrates various conventional collaborative learning activities along a longitudinal trajectory. Students are primarily tasked with completing an extensive individual case project, in which they define the topic and scope and relate it to their work practices. To develop it, the individual case project is embedded and aligned with smaller collaborative learning activities, such as discussion threads and student peer assessments. In these learning activities, students receive feedback from their peers and instructors at specific points, contributing to the development of the case project. In this way, acts of co-laboring are performed in practice.

This approach will be explained in the remaining parts of this short paper, which is structured as follows: the first section presents relevant research the short paper intends to engage with, the subsequent section explains the learning design, and the conclusion offers a brief discussion.

2 Relevant research

To outline the asynchronous cooperative learning design, a relevant research horizon must be identified in order to establish knowledge gaps and potential contributions. This short paper aims to engage with emerging research literature on MOOCs and learning design. This research area is inspired by instructional and learning design, with [5] highlighting the foundation of instructional design in behaviorist and cognitivist learning theories, while learning design is rooted in sociocultural learning and activity theories. However, MOOCs face considerable challenges, as ongoing research documents low completion rates [21], low instructional quality [19], and learners' engagement with course content and experience of limited peer engagement [17]. Such factors create contradictions in learning. First and foremost, they underexploit the potential value emerging from co-constructed knowledge through learner interaction, meaning that the social aspect of learning is underused. Addressing this issue necessitates a greater emphasis on designing collaborative learning activities in online courses, underscoring the importance of

learning through social engagement, regardless of the size and scope of the online environment.

To facilitate collaborative learning, course creators can apply various available frameworks, such as constructive alignment [3] or understanding by design [22]. However, these frameworks might fall short when creating online courses, which often involve more comprehensive course design work. This suggests that learning design in MOOC making is a more complex and distinct process. For instance, learning designers need to create a coherent assemblage of interlinked learning content, learning activities, and assessment forms or activities, going beyond just a limited set of learning activities. Moreover, a MOOC is often designed for a one-size-fits-all platform, and even a predefined MOOC platform pedagogy must be considered, which presents both opportunities and constraints on the design work. That being said, it is clear that creating a MOOC is time-consuming and can constitute a transformative experience in terms of practice change from campus and classroom pedagogy to online pedagogy. This requires, among other things, the development of more comprehensive and generic MOOC approaches, which are currently in progress and being developed within the research literature [4, 9, 14, 16]. On a practical level, researchers emphasize that numerous tools for course design are easily accessible on the internet [15]. For example, simple YouTube searches provide suggestions for design approaches. These learning design approaches are inspired by pedagogical ideas from sociocultural learning theory and activity theory.

Over the years, a steady stream of conceptual papers has suggested ways to design and create MOOCs. This research offers frameworks that conceptualize MOOC creation as an ongoing, creative, and iterative process, consisting of starting with an idea and turning it into a final deliverable – the MOOC. The difference between these frameworks lies in the nuances and emphasis on the creative and iterative course design work process. In an early case study, for example, Drake, O'Hara, and Seeman (2015) [8] established five principles that can be part of a decision-making framework and guide course designers to create better MOOCs, meaning they should be meaningful, engaging, measurable, accessible, and scalable. Mor et al. (2016) [20] argue that current MOOCs need to shift from being content-centric to user-centered. To focus on the learner, course designers could adopt a cycle of inquiry for learning and develop course designs that foster the target group's growth. This means that one must identify educational challenges, review theory and practice, create and evaluate a MOOC prototype, and reflect upon the design process before launching it. On the other hand, Dona and Gregory (2019) [7] argue for a so-called participant-first approach, which views the course design process as a collaborative effort. Conole (2015) [6] has presented a widely cited framework, the 7Cs of learning design, which aims to help future course designers obtain a better overview of what an online course might look like in practice.

A limitation of existing frameworks is that they offer generic approaches to MOOC creation but provide little guidance on designing complex asynchronous collaborative learning experiences. While adopting a constructivist MOOC format [6] could be a potential solution, however, it might oversimplify the process to some degree. A primary challenge lies in conceptualizing unpredictable learning paths in collaborative design, as students in online courses adopt a wide range of strategies and trajectories [10]. MOOC learners often selectively engage with materials and activities based on their goals [13], so not all aim for course completion or full participation. Therefore, the limitations of existing frameworks call for a more tailored approach focusing on the unique aspects of asynchronous collaborative learning design. There may be good reasons for doing so. For example, research on collaborative learning activities in MOOCs, which often comes down to studies of discussion forums and student peer-assessment, indicates challenges in the performance of such designs. Studies report that discussion forums require significant instructor involvement and can easily get “lost” in the learning process due to information overload challenges [12]. In student peer-assessment, studies report that learners can be unsure of how to give feedback or seldom receive any from their peers, creating mixed learning experiences (e.g. [11, 23]). These experiences suggest that the field needs to reevaluate how to facilitate collaborative learning in online environments. In the next section of this short paper, the asynchronous cooperative learning approach will be explained.

3 The design of an asynchronous cooperative approach

To explain the core properties of the proposed asynchronous cooperative learning design, an explanation and definition are required – matters that can contribute to delimiting and clarifying the core ideas behind the learning design. Collaborative learning has its roots in educational research and is inspired by constructivist learning theories, which assume that learning occurs when learners co-construct knowledge through social interaction [2]. Collaborative learning also has other core properties; for example, it assumes that learning happens when students work together in groups to create a shared understanding, find solutions, give meaning, and develop a joint product. Furthermore, collaborative learning includes an element of co-laboring, where students contribute to some kind of end product. That being said, it is also common to distinguish between *cooperative* and *collaborative* learning. In simple terms, cooperative learning is a more teacher-controlled approach to monitoring the collaborative process, while collaborative learning gives students more autonomy [2].

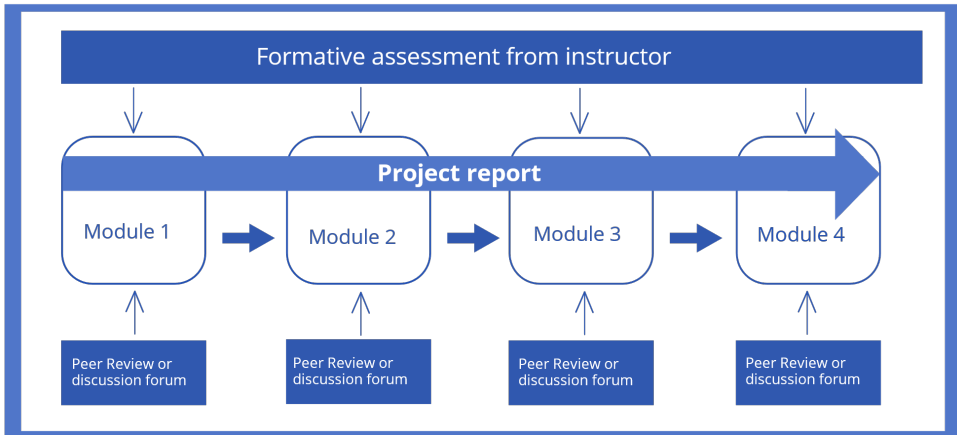


Figure 1: Visualization of cooperative learning design.

With that said, the proposed learning design adopts a cooperative learning approach, placing more emphasis on teacher-controlled learning. This property stems from the design's teacher-centered focus when examined more closely. Nevertheless, the cooperative learning design aims to create a more uniform and extensive learning structure that interconnects and combines a series of conventional learning activities commonly used in collaborative learning. The learning design prioritizes collaboration through co-laboring rather than solely focusing on group work. The learning design has certain core pillars and is displayed in Figure 1. First, the learning design is set up and conducted in an asynchronous virtual learning environment, which contrasts with the synchronous and face-to-face nature of traditional collaborative learning. Second, students work on individual case projects over a longitudinal trajectory, with topics and scope defined by the students themselves. An instructor grades the case projects, and students receive regular formative feedback from course instructors during their development. Third, a series of smaller, interlinked collaborative learning activities commonly used in online courses, such as discussion forums and student peer assessments, are embedded into the overall learning design. In these activities, students engage with specific assignments designed to develop and enhance their individual case projects. Such assignments may include providing peer feedback on particular topics and aspects of their case projects or participating in discussion threads that explore relevant topics students can apply in their projects' development. In this way, students receive and engage in a dual feedback loop: one from the course instructor and a second one where they engage with each other's case projects. This approach can be seen as creating a

more interconnected and coherent asynchronous cooperative learning design. Most crucially, it attempts to utilize the value of learning that emerges from learners' social interactions, rather than engagement with prearranged learning content.

The asynchronous cooperative learning design has not yet been tested, but it is part of a concept design emerging from a research and development project. This project aims to develop an online course that introduces teachers or school managers, who are the target group for the SPOC, to perspectives on digitalization and organizational theory. A course syllabus, complete with learning objectives and assessment methods, is currently under development as this short paper is being written. In addition to engaging with learning content, activities, and assessment tasks organized in an xMOOC educational model based on a modular setup, a primary goal is for students to develop analytical skills. These skills are considered crucial for teachers aspiring to assume leadership roles within schools. This skillset revolves around the ability to apply different perspectives from organizational theory and research to the aforementioned case project assignment. In the case assignment, students select a relevant case, ideally from their own workplace, and define a topic, formulate research questions, collect data, and synthesize an analysis that offers a point of view on the extent of the school's digital integration. Through this process, with robust support from instructors and fellow students in the form of feedback and engagement in smaller collaborative learning activities, students conduct a meta-analysis. This identifies areas requiring intervention to facilitate digital transformation and effective leadership.

By applying the proposed asynchronous cooperative learning design within a SPOC, it can be argued that the conventional project task format is somewhat redefined and readopted to suit collaborative learning purposes in an online setting. As commonly known, project assignments offer students the opportunity to delve into practice-related topics or issues and demonstrate their comprehension and abilities within a specific domain. These assignments can vary in scope and complexity, ranging from smaller projects requiring a few weeks to larger ones lasting several months, usually organized as part of campus pedagogy. Typically, a project assignment entails defining a topic, performing an investigation or exploration, and presenting the findings and conclusions. Project tasks often emphasize practicality, enabling students to explore subjects in a more applied manner compared to conventional academic assignments like essays or exams. Furthermore, they can offer experience in collaboration, as many projects necessitate teamwork and creative solutions to emerging challenges. In higher education, project assignments are generally assessed based on several criteria, including the quality of research and analysis, relevance to the subject matter, originality, presentation and organization, and creativity. In the proposed cooperative learning design within a SPOC, however, these affordances can be developed. However, the next round of testing will determine how beneficial the design can be.

With that in mind, it is essential to provide a general overview of the SPOC's course organization. The SPOC uses a modular setup, consisting of four modules, and follows an asynchronous education format, as mentioned. In the first module, students are introduced to topics related to digitalization in schools and society. They must prepare the problem statement and objectives for their project assignment, providing a description of the project's focus and purpose. To achieve this goal, students must conduct a preliminary analysis of their own school, generate results, and reflect on these findings. In Module 2, students engage with administrative documents and theoretical models in the context of digitalization. They receive a brief introduction to the methodology and, based on their prior analysis, interview staff members and reflect on their own school's situation. Module 3 involves students working with organizational theory. They review relevant theories, research, and practices that may pertain to their project. In Module 4, students focus on results and conclusions, presenting their project findings and discussing the implications of these findings for their own practice.

4 Discussion and conclusion

As mentioned, the learning design proposed in this short paper is under development and has not yet been tested on students. Nevertheless, it provides a basis for discussing the potential benefits of fostering collaboration among participants in MOOCs. In this context, cooperation can emerge as a feasible and effective approach to enhance learning experiences and outcomes. Sharing ideas and gaining new insights are not exclusive to collaboration; they can also be fostered through structured and teacher-guided cooperation. Cooperation enables participants to work together on shared goals while maintaining their independence and autonomy, ensuring that even in a short online course, students can engage with each other and contribute to the overall learning experience. Cooperation is well-suited for the short-term and loosely networked nature of MOOCs and can be a crucial component. It allows participants to collaborate and share ideas while respecting each other's autonomy.

In the proposed MOOC design, familiar elements used in collaborative learning are incorporated in a novel and interesting way. What makes the design interesting is not the individual elements, but the manner in which they are assembled and integrated as part of a larger design. Within the framework of the SPOC, the well-known project assignment spanning across all modules is included, with students gradually building it up. The project assignment is a practical task based on the students' own workplace, making it more meaningful and motivating for them to continue working on it. They can use the project outcomes after completing their

studies. Also, instead of traditional group work, asynchronous student peer-review and discussion forums are included and designed as part of the module setup, thereby interlinking cooperation as part of larger online learning experiences. This approach aligns with the cooperative nature of MOOCs, facilitating the exchange of ideas and insights without requiring synchronous group work. By engaging in cooperative activities, online students can benefit from the diverse perspectives and knowledge of their peers, leading to a richer learning experience. Students can exchange ideas and insights by using the learning platform to visualize and spread ideas to a larger community, inspiring them to think differently and approach problems from various angles. Cooperation also facilitates engagement, as learners can participate in discussions and contribute with their expertise.

By promoting cooperation in online courses, educators can ensure that learners benefit from the expertise and perspectives of their peers, leading to a richer and more engaging educational experience. In this context, cooperation is an effective strategy for enhancing learning outcomes and the sustainability of online courses.

References

- [1] M. Agterbos, F. Aldershoff, O. Cawley, N. Jung, J. Kehoe, K. E., A. Kunz, J. H. Nilsen, P. Jost, I. Rothe, G. Sandstrak, R. Skar, and K. H. Weidman. "Developing health technology innovators: A collaborative learning approach". In: *IEEE Global Engineering Education Conference. EDUCON*. 2019. DOI: 10.1109/educon.2019.8725104.
- [2] E. F. Barkley and C. H. Major. *Collaborative learning techniques. A handbook for college faculty*. 2nd edition. San Francisco, CA: Jossey-Bass, 2014.
- [3] J. Biggs. *Teaching for quality learning at university: what the student does*. Open University Press, 2011.
- [4] C. Braun, M. Ebner, L. H. Fickert, and S. Schön. "The Online Course as Initial Stage of a Course in Higher Education. Implementation and Evaluation of the Pre-MOOC Concept in a Technical Degree Course". In: *International Journal of Emerging Technologies in Learning (ijET)* 16.06 (2021), pages 245–258. DOI: 10.3991/ijet.v16i06.16617.
- [5] M. Buhl, L. B. Andreasen, and K. Pushpanadham. "Upscaling the number of learners, fragmenting the role of teachers. How do massive open online courses (MOOCs) form new conditions for learning design?" In: *International Review of Education* 64.2 (2018), pages 179–195. DOI: 10.1007/s11159-018-9714-1.
- [6] G. Conole. "Designing effective MOOCs". In: *Educational Media International* 52.4 (2015), pages 239–252. DOI: 10.1080/09523987.2015.1125989.

- [7] A “participant first” approach to designing for collaborative group work in MOOCs. ASCILITE 2015. 2015.
- [8] J. R. Drake, M. O’Hara, and E. Seeman. “Five principles for MOOC design. With a case study”. In: *Journal of Information Technology Education: Innovations in Practice* 14 (2015), pages 125–143. DOI: 10.28945/2250.
- [9] M. Ebner, S. Schön, and C. Braun. “More Than a MOOC. Seven Learning and Teaching Scenarios to Use MOOCs in Higher Education and Beyond”. In: (2020). Edited by S. Yu, M. Ally, and A. Tsinakos, pages 75–87. DOI: 10.1007/978-981-15-0618-5_5.
- [10] I. Engeness and M. Nohr. “Engagement in Learning in the Massive Open Online Course: Implications for Epistemic Practices and Development of Transformative Digital Agency with Pre- and In-Service Teachers in Norway”. In: *Cultural-Historical Psychology* 16.3 (2020), pages 71–82. DOI: 10.17759/chp.2020160308.
- [11] D. Gamage, T. Staubitz, and M. Whiting. “Peer Assessment in MOOCs: Systematic Literature Review”. In: *Distance Education* 42.2 (2021), pages 268–289. DOI: 10.1080/01587919.2021.1911626.
- [12] H. Haugsbakken and I. Langseth. “Pedagogical Strategies for Creating an Online Community”. In: *CEUR Workshop Proceedings*. Volume 2356. 2019, pages 140–145.
- [13] D. Y. Jacobsen. “Dropping Out or Dropping In? A Connectivist Approach to Understanding Participants’ Strategies in an e-Learning MOOC Pilot”. In: *Technology, Knowledge and Learning* 24.1 (2019), pages 1–21. DOI: 10.1007/s10758-017-9298-z.
- [14] J. Kerr, V. H. M. Dale, and F. Gyurko. “Evaluation of a MOOC Design Mapping Framework (MDMF): Experiences of Academics and Learning Technologists”. In: *Electronic Journal of e-Learning* 17 (2019), pages 38–51.
- [15] J. Kerr, A. Lorenz, S. Schön, M. Ebner, and A. Wittke. “Open Tools and Methods to Support the Development of MOOCs: A Collection of How-tos, Monster Assignment and Kits”. In: *EMOOCs 2021*. Edited by C. Meinel, T. Staubitz, S. Schweiger, C. Friedl, J. Kiers, M. Ebner, A. Lorenz, G. Ubachs, C. Mongenet, J. A. Ruipérez Valiente, M. C. Mendez, A. Merceron, and K. v. Schmieden. Universitätsverlag, 2021, pages 187–200.
- [16] I. Langseth, D. Y. Jacobsen, and H. Haugsbakken. “The Role of Support Units in Digital Transformation: How Institutional Entrepreneurs Build Capacity for Online Learning in Higher Education”. In: *Technology, Knowledge and Learning* (2022). DOI: 10.1007/s10758-022-09620-y.

- [17] A. Littlejohn, N. Hood, C. Milligan, and P. Mustain. "Learning in MOOCs: Motivations and Self-Regulated Learning in MOOCs". In: *The Internet and Higher Education* 29 (2016), pages 40–48. DOI: 10.1016/j.iheduc.2015.12.003.
- [18] R. Lobo-Quintero, A. Ortega-Arranz, and D. Hernández-Leo. "Towards Reward-Based Gamification in Collaborative Learning Flow Patterns Based on Learning Analytics". In: *CEUR Workshop Proceedings*. 2020.
- [19] A. Margaryan, M. Bianco, and A. Littlejohn. "Instructional Quality of Massive Open Online Courses (MOOCs)". In: *Computers & Education* 80 (2015), pages 77–83. DOI: 10.1016/j.compedu.2014.08.005.
- [20] Y. Mor, S. Warburton, R. T. Nørgård, and P.-A. Ullmo. "MOOC Design Workshop: Educational Innovation with Empathy and Intent". In: *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*. Volume 9891 LNCS. 2016, pages 453–459. DOI: 10.1007/978-3-319-45153-4_42.
- [21] W. Wang, Y. Zhao, Y. J. Wu, and M. Goh. "Factors of Dropout from MOOCs: A Bibliometric Review". In: *Library Hi Tech* 41.2 (2022), pages 432–453. DOI: 10.1108/lht-06-2022-0306.
- [22] G. Wiggins and J. McTighe. *Understanding by Design*. 2nd edition. Alexandria: Association for Supervision & Curriculum Development, 2005.
- [23] A. M. F. Yousef, U. Wahid, M. A. Chatti, U. Schroeder, and M. Wosnitza. "The Impact of Rubric-Based Peer Assessment on Feedback Quality in Blended MOOCs". In: *Communications in Computer and Information Science*. Volume 583. 2016, pages 462–485. DOI: 10.1007/978-3-319-29585-5_27.