11 A blended learning model supported by MOOC/SPOC, Zoom, and Canvas in a project-based academic writing course

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Abstract

Blended learning has played an important role in teaching English as a second or foreign language around the world. However, little research has been conducted on blended learning that is entirely online owing to the coronavirus pandemic. We aim at exploring the model of blending Massive Open Online Courses (MOOC) and Small Private Online Courses (SPOC), Zoom conferencing, and the Canvas course management platform. The new approach of blended online learning incorporates the pre-class autonomous learning of knowledge in MOOC/SPOC, in-class internalization of knowledge through case studies and discussions on Zoom, and after-class application of knowledge to the completion of a research project. A questionnaire and interviews were conducted to explore learners' perceptions of the effectiveness of the model. Learners have a positive attitude about the new approach of blended online learning, but still hope that the in-class activities can be implemented face-to-face offline. The model will contribute to teaching and learning with the blended approach against the current coronavirus pandemic.

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1.   Introduction

Leakey and Ranchoux (2006) define blended learning as "the adaptation in a local context of previous CALL and non-CALL pedagogies into an integrated program of language teaching and learning drawing on different mixes of media and delivery to produce an optimum mix that addresses the unique needs and demands of that context" (p. 358). In brief, blended learning is to combine face-to-face instruction with computer mediated instruction (Graham, 2006), which can also be conducted via a mobile phone nowadays. Research has shown that blended learning is beneficial for reducing learners' anxiety in communication (Liu, 2013), improving interaction between students and between students and teachers, increasing learners' motivation of autonomous learning, facilitating the flexibility and curiosity in learning, and enabling students to learn more actively (Mahalli, Nurkamto, Mujiyanto, & Yuliasri, 2019).

Many people have long got used to the traditional face-to-face teaching and learning, and do not have much intention or motivation to use technology for blended learning even though they have been encouraged to do so. However, due to the COVID-19 pandemic, face-to-face instruction seems rather impossible. Even with blended learning, which combines both online and offline instructions, the traditional form of teaching conducted offline has to be replaced by online interactions. This situation poses a challenge for both teachers and students, who are not quite prepared to transfer the real classroom to the online context in such a short period of time. Therefore, it is all the more necessary for educators and practitioners to cooperate and share ideas, resources, and experiences of online teaching and learning. In this study, we intend to share our experience in a project-based academic writing and presentation course that blends online MOOC/SPOC autonomous learning with Zoom class instructions, supported by the Canvas course management platform so as to show how the blended learning in the digital context can be realized. In order to serve the purpose of online instruction against the special circumstance of coronavirus pandemic, blended learning in this study refers to the integration of different online platforms to facilitate learning that can be achieved by blending online learning and offline face-to-face classroom instruction.

We propose a model of blended learning for a project-based academic English course (see Figure 1). The model is composed of three parts: pre-class, in-class, and after-class. It includes Objectives, Flipped classroom learning (instructional videos, questions, reading materials, test), Activities, Assessment, Summary, and Project-based usage, and is simplified as OFAASP.

Figure 1. The OFAASP model of project-based blended learning
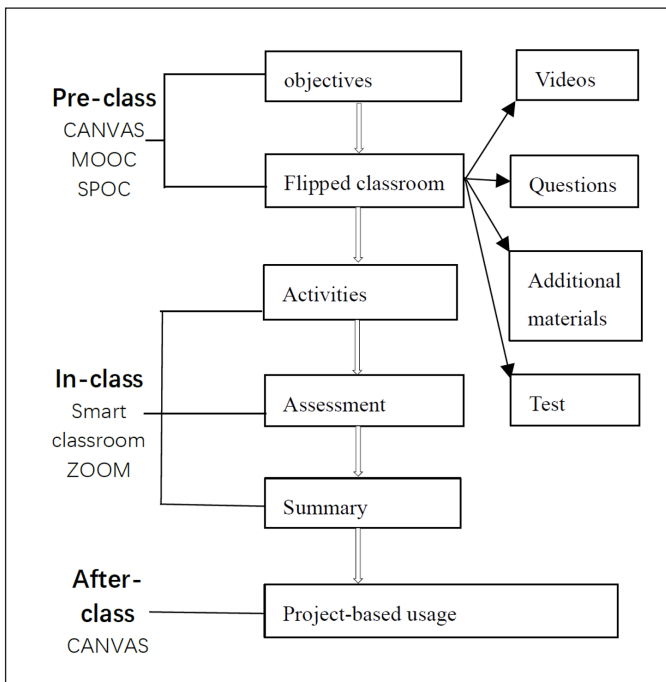
In the following example of a case study, we are going to show how this model is implemented and realized in our course. Two questions will be addressed in our research.

- How is the model implemented in the academic writing course?

- What are learners' perceptions of the effectiveness of the model?

2.   Implementation of the model

2.1.   Course objectives

This is an elective course intended for improving students' academic writing and presentation skills in English and preparing the students for publication and conference presentation in the future. All undergraduates of different majors could take the course, after which they were expected to be able to:

- find sources for research, locate necessary information rapidly in research papers, read critically to form ideas for research;

- learn the structure and components of a research paper to tell an academic story with good logic; and

- grasp strategies for delivering a good speech at the conference.

2.2.   Course design

We designed a teaching model that integrated online platforms such as MOOC/SPOC, Zoom, and Canvas. Students were required to learn knowledge autonomously on MOOC/SPOC before class. They performed activities through interactions in Zoom (or a smart classroom in the post-pandemic era) which helped them to internalize the knowledge. Finally, they applied the knowledge to a research project and imitated the process of publication and conference through the method of 'learning by doing'.

2.2.1.   Before class: MOOC/SPOC learning

Students were required to learn autonomously before class on MOOC[3] or SPOC[4]. They watched videos to learn the basic knowledge that they were

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3. https://www.icourse163.org/course/SJTU-1206705804?tid=1461155452

4. Only available to the students in Shanghai Jiao Tong University

supposed to grasp in the unit. Take 'Abstract' for example, this unit includes three instructional videos: the essential components of an abstract, sentence templates for writing the abstract, and choosing keywords. After watching the videos, students were required to finish exercises or take multiple choice tests to check their understanding of the videos. We got to know students' problems through the exercises and tests before class so that we could focus on the problematic points in class. There were also communications in the discussion board where students could share opinions with each other and interact with the teacher online (see Figure 2).

Figure 2.   Online learning on MOOC/SPOC before class
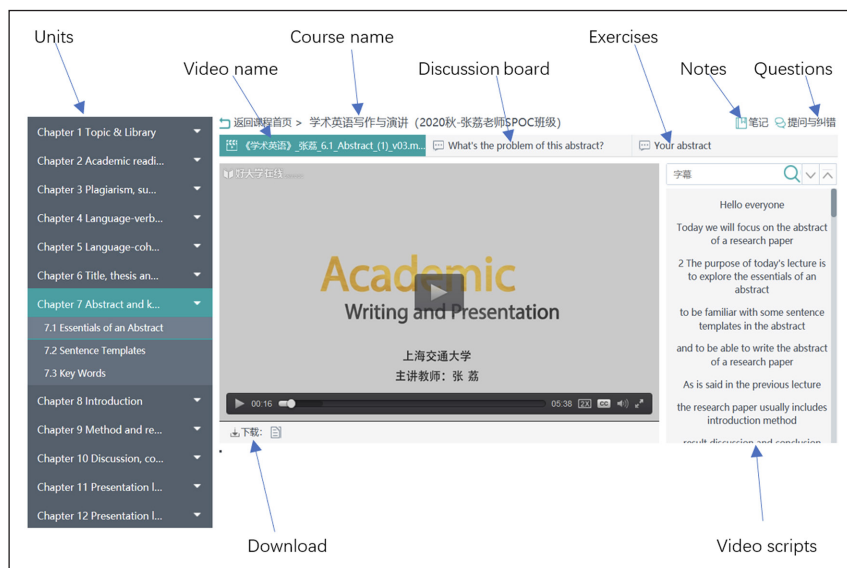
2.2.2.   In class: Zoom conference

The teacher and the students met online in Zoom every week at a fixed time required by the course schedule and conducted activities such as case studies or discussions in the virtual classroom for the purpose of internalizing the knowledge through these activities (see Figure 3). Students were encouraged

to put up their virtual hands in Zoom and use the microphone to voice their opinions, or to express their ideas via the Zoom Chatroom by typing what they wanted to share. In addition, they could make use of the 'notepad' to mark directly on the screen, another way to show their thoughts.

Figure 3. In-class teaching and learning in a virtual Zoom classroom
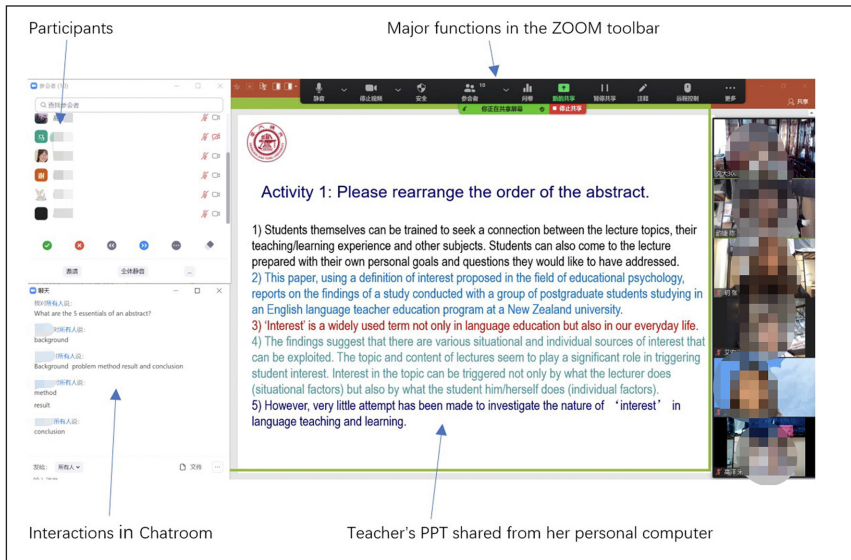
2.2.3. After class: Canvas management and WeChat interaction

Finally, students applied the knowledge in project-based writing by imitating the process of research paper publication and academic conference, which manifested our approach of 'learning by doing'. They submitted to Canvas their homework 'assignments' all through the course, such as outline, first draft, peer review, second draft, final research paper, and PowerPoint slides for presentation. The teacher also made use of Canvas to arrange the process of learning before, in, and after class and to inform the students about Zoom conference times and entrance codes in 'Announcement' (see Figure 4). To cooperate well in the tasks, students worked in groups of three and had frequent discussions about

their homework by WeChat, a very popular app for online synchronous and asynchronous communications in China.

Figure 4. Canvas course management software frontpage
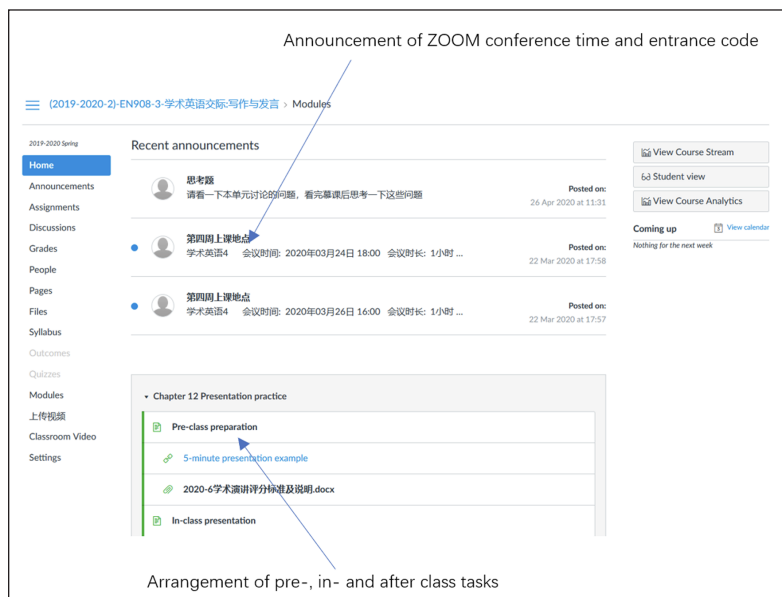
2.3. Evaluation of learning

We adopted a formative evaluation method to assess students' performance. The final score was composed of 40% for research paper writing, 20% for presentation, and 40% for other performance, which includes:

- **pre-class**: autonomous learning on SPOC 10%;

- **in-class**: presence and participation 10%; and

- **after-class**: reading 5%, outline 5%, first draft 5%, peer review and second draft 5%.

Students' autonomous learning experiences were recorded on the MOOC or SPOC platform in terms of total time of learning, percentage of video and exercise completion, and postings in the discussion board, with a corresponding total progress of learning for each student (see Figure 5).

Presence and participation were checked by means of a QR code released every ten seconds from the campus website[5] and the messages saved or recorded in Zoom.

Figure 5. Online learning record on MOOC/SPOC

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3. Effectiveness of the model: a mixed-method approach

3.1. Research design

A mixed-method approach was adopted to investigate students' opinions of the effectiveness of the model. A questionnaire investigation was conducted six weeks after the students had experienced online learning guided by the OFAASP model in the hope that we could know students' opinions about blended learning and adjust our teaching in time if necessary.

Another questionnaire survey was carried out at the end of the course to inquire about students' learning outcomes and five students were interviewed to give further explanations of the questionnaire results. Students also posted on Canvas their opinions on the learning outcomes.

3.2. Participants

Enrolled in the course were 90 undergraduate students who were divided into three classes of 30 students each. Sixty-six students finished the first questionnaire investigation about the perception of blended learning and 69 completed the second survey about the learning outcome. Table 1 demonstrates the basic information of the students.

Table 1.   Information of participants in the two investigations

Category	Specification	First	Second
Gender	Male	32	33
	Female	34	36
Year	Freshmen	44	40
	Sophomore	13	16
	Junior	5	7
	Senior	4	6
Major	Science, engineering, agriculture, medicine	56	57
	Social science, humanities, economics	10	12

3.3.   Instruments

The first questionnaire included three items of choices about personal information, 15 items about blended learning on a five-point Likert scale, and one open-ended question about their feelings about current learning and suggestions for the next step. The second questionnaire consisted of six items about personal information, nine items about learning outcomes on a five-point Likert scale, and 18 items for students' own ratings of their abilities and qualities on a 100-point scale before and after the course.

To avoid confusions in the questionnaire results, we interviewed five students on a voluntary basis. The interview includes such questions as below.

- Do you think blended learning has promoted or impeded your grasp of knowledge? Why? Compared with face-to-face learning, which is better?

- What strategies have you adopted in learning before, during, and after class?

- Do you have difficulties in blended learning, how do you overcome them?

Students also posted on the Canvas discussion board their opinions about what they have gained in the course with regard to academic reading, writing, presentation, and research ability.

3.4.   Data collection and analysis

The two questionnaire investigations were conducted online by means of Wenjuanxing[6], a popular online questionnaire platform in China. Students were given a link to the platform in WeChat and filled the questionnaire either on

6. https://www.wjx.cn/

their mobile phones or computers. Then, data were collected from the platform and analyzed using SPSS statistic software. Means, percentage, and standard deviation were calculated in the first questionnaire to find out the students' opinions about blended learning. Paired-sample t-test was conducted to show the difference in students' abilities before and after the course.

4.   Results and discussion

Table 2 shows students' perception of the effectiveness of learning after six weeks.

Table 2.   Students' perceptions of the effectiveness of blended learning

Evaluation contents	Strongly agree	Agree	Do not know	Disagree	Strongly disagree	Mean	Standard deviation
General evaluation							
Having clear objectives	39.39%	53.03%	7.58%	0%	0%	4.3182	.61166
Considering Canvas helpful for study management	45.45%	50.00%	4.55%	0%	0%	4.4091	.58117
Preferring blended teaching method	31.82%	48.48%	18.18%	1.52%	0%	4.1061	.74687
Preferring learning-by-doing	48.48%	50.00%	1.52%	0%	0%	4.4697	.53262
Autonomous learning before class							
Watching videos	39.39%	46.97%	13.64%	0%	0%	4.2576	.68636
Gaining basic knowledge from videos	46.97%	48.48%	4.55%	0%	0%	4.4242	.58337
Raising questions after self-study	12.12%	43.94%	40.91%	3.03%	0%	3.6515	.73364

Learning additional materials effectively	39.39%	54.55%	6.06%	0%	0%	4.3333	.59052
Internalization of knowledge in Zoom classroom							
Understanding knowledge through online activities	43.94%	51.52%	3.03%	1.52%	0%	4.3788	.62672
Participating actively in Zoom discussions	19.70%	57.58%	22.73%	0%	0%	3.9697	.65562
Completing in-class tests effectively	16.67%	62.12%	21.21%	0%	0%	3.9545	.61848
Clarifying knowledge points through summaries	39.39%	54.55%	6.06%	0%	0%	4.3333	.59052
Application after class							
Being able to apply knowledge to writing	34.85%	54.55%	9.09%	1.52%	0%	4.2273	.67472
Getting timely feedback from teachers	50.00%	48.48%	1.52%	0%	0%	4.4848	.53328
Communicating with group members frequently	25.76%	53.03%	18.18%	3.03%	0%	4.0152	.75432
Completing tasks though cooperative work	43.94%	43.94%	9.09%	3.03%	0%	4.2879	.75986

Generally speaking, students had positive attitudes toward blended teaching that was totally conducted online. They benefited a lot from the project-based learning and regarded learning-by-doing as a very effective approach (Mean=4.47, Agreement=98.48%). However, problems arise with regard to completing videos and raising questions in pre-learning, communicating, and focusing attention in Zoom, and applying knowledge in research paper writing.

Therefore, it is necessary to carry out the formative evaluation in the middle of the term so that we can adjust our teaching immediately (Black & Wiliam, 2009). Besides, students still preferred face-to-face interactions even though they could accept online instructions via Zoom (Mean=4.11, Acceptance=86.36%). This finding is in line with the previous research by Platt, Raile, and Yu (2014) who find that students preferred face-to-face learning over online learning. Therefore, even though technology has developed over time, face-to-face education is still necessary and cannot be totally replaced by online teaching (Fish & Snodgrass, 2020), and blended learning with face-to-face instructions in the classroom is still encouraged after the pandemic.

4.1.   Autonomous learning before class

Results from the first questionnaire investigation show that although students were required to watch videos in MOOC/SPOC before class, 13.64% of them skipped this process and attended classes in Zoom without any preparation. The interview after the survey revealed that some students regarded pre-class learning as unnecessary because they thought that the key points would be repeated in class. Therefore, we adjusted our teaching plans by directly studying examples and cases. When the students met difficulties in the in-class activities, they would realize the importance of pre-class autonomous learning in a flipped classroom (Du, 2020).

Besides, students were expected to raise questions whenever they encountered problems in understanding while doing their autonomous learning. They were also encouraged to bring their questions to class because only by raising questions could students achieve a better understanding of knowledge and make progress in their ability to think (Mazer, Hunt, & Kuznekoff, 2008). However, we found in the questionnaire that students were not very good at raising questions (Mean=3.65). Thus, we redesigned the exercises on the MOOC/SPOC by making them more challenging so as to provoke deeper thinking. Also, we added some open-ended questions in the discussion board, aiming to challenge their thoughts and expand their scope of thinking.

4.2.   Participation in class

Students were less likely to participate in online discussions (Mean=3.97) owing to the inconvenience brought about by the undesirable fact that they were only connected by screens in the Zoom classroom. Group discussion was not easy to be implemented in Zoom because the teacher could hardly monitor the whole class for effective discussions and there is often a feeling of disconnection with students. To solve this problem, we designed special tasks and raised purposeful questions to engage every student, leaving group discussions to students themselves after class through WeChat when they were working together to write a paper. We also found that although oral discussion was reduced in online teaching, the Zoom Chatroom enabled those who were too shy to voice their opinions in face-to-face interactions to become more actively involved and more willing to express their ideas by typing in what they had to say.

Some students found it hard to 'pay full attention to online courses'. According to Wu (2015), the focus of attention can be achieved through the regulation of one's brain or behavior. We tried to design interesting and thought-provoking activities to provoke thinking so that students could stay focused. Besides, we employed various ways of communication in Zoom when dealing with different types of questions. For example, students turned on their microphones when there was much to be expressed, which was close to face-to-face teaching; or they typed in words in the Chatroom when the answer was short and relatively fixed; they also used the 'notepad' to mark on the screen to boost the sense of participation.

4.3.   Application after class

According to the results of the questionnaire, most students could apply the knowledge to their writing project (Agreement=89.39%) while some students do not know how to use the knowledge in practice even though they understand what was taught in class. Actually, application of knowledge is not only the essence of project-based learning (Seman, Hausmann, & Bezerra, 2018) but also the focal point for our OFAASP model. In order to help students better achieve

their learning objectives, we redesigned more practical tasks to effectively help students form a deeper understanding of knowledge. For example, we provided some cases for study or some model research papers for reference. We also motivated them to cooperate and interact more frequently with each other, sharing their unique learning strategies and helping each other to make progress together. In addition, teachers can act as the scaffolding by participating in the online discussions, answering questions or giving feedback (Alharbi, 2017). In this way, students would be closely connected with the teacher and their confusion could be cleared up in time.

4.4. Quantitative analysis of learning outcomes

Table 3 shows students' perceptions of learning outcomes. The means for most items are above four, which shows that the course is helpful for learning. As is shown in Figure 6, their academic reading, writing, presentation, and even their research abilities were significantly improved from an average of above 70+ to 80+ ($p<0.001$). Therefore, the learning outcome meets the knowledge and ability goals of the course.

Table 3.   Students' perceptions of learning outcomes

Items	Numbers	Min	Max	Mean	SD
The course meets my expectations	69	2.00	5.00	4.3043	.75351
I can grasp knowledge through practice	69	3.00	5.00	4.4783	.55859
I have learned how to use Endnote	69	2.00	5.00	4.1304	.83864
I am able to use COCA[7] and Phrasebank to help writing	69	2.00	5.00	3.8116	.75294
I know how to find resources	69	3.00	5.00	4.5507	.52960
I know how to review the literature	69	2.00	5.00	4.0870	.65841
I know how to write different parts of a research paper	69	4.00	5.00	4.3913	.49162
I know the structure of research papers	69	3.00	5.00	4.4348	.52799
I know how to cite and list references	69	3.00	5.00	4.3913	.59945

7. Corpus of Contemporary American English

Figure 6. Students' perception of improvement
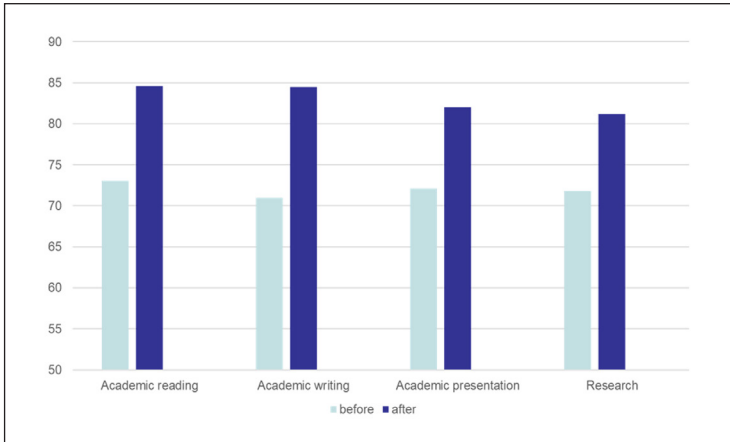
4.5.   Qualitative analysis of students' reflective comments

At the end of the course, students posted on Canvas their comments on the course and the following comments are to show what they have gained in their ability and quality.

> "I must admit that I was not interested in academic research at all before I took this course. However, during this semester, the course has gradually aroused my interest in academic writing and motivated me to conduct my own research".

> "The literature review part helps me to improve my experience and skills of reading academic essays. When I have an essay to read, I now know where to read first and how to get the main ideas that the author is trying to convey, thus saving a lot of time and energy".

> "I am able to write an academic paper, which is unbelievable before the course. This experience also helps me a lot when I have to write a paper

in other courses or projects. I think this is very helpful for my future development".

"I know how to stand on the stage to give a presentation, although I am a shy person who doesn't love to speak out, and through this course I know how to speak loudly and bravely. Though my oral English is not so good, speaking out in front of people is really a breakthrough for me".

The above comments from students show that the course is helpful for the improvement of their academic research, reading, writing, and presentation abilities.

5.   Conclusion

This study suggests an online blended learning model that incorporates the pre-class autonomous learning of knowledge on MOOC/SPOC, in-class internalization of knowledge through interactive activities in Zoom, and after-class application of knowledge in a project-based practice. Results show that students generally have positive opinions about online blended learning and the course benefits students in the improvement of academic writing and presentation abilities. But problems still arise with regard to pre-class MOOC/ SPOC learning and online interaction in Zoom. Therefore, we can do further research by comparing scores of their performance rated not only by themselves by also by peers and the teacher. Future research can also be conducted as to how to have a smooth transition from Zoom to a real classroom in the post-pandemic period.

6.   Acknowledgments

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Edited by Nebojša Radić, Anastasia Atabekova, Maria Freddi, and Josef Schmied