



Assessment of the Students' Perception of Implementation of the Blended Consortium Learning Model in Public Health

Sayono Sayono^{1,2}(✉), Wulandari Meikawati^{1,2}, Munaya Fauziah^{2,3},
and Triana Srisantyorini^{2,3}

¹ Universitas Muhammadiyah Semarang, Semarang, Indonesia
say.epid@gmail.com

² Association of Public Health Higher Education of Muhammadiyah of Indonesia, Jakarta, Indonesia

³ Universitas Muhammadiyah Jakarta, Jakarta, Indonesia

Abstract. The blended consortium learning method is the method combining several types of learning. The COVID-19 pandemic required the lecturer and student to conduct the daring learning method. This study aimed to assess the student's perception of the implementation of the blended consortium learning method. The blended consortium learning method in this study is combining two methods such as daring and luring. The sample of this study was 70 students from the Surveillance of Public Health Course and 146 students from the Basic of Public Health Course. The sample came from 2 universities as Universitas Muhammadiyah Semarang and Universitas Muhammadiyah Jakarta. This study used the checklist (the Likert Scale) as a study tool. The result of this study found that most of the students (more than 50%) were ready to implement the daring and blended learning method based on the several aspects assessed. Good collaboration between students and lecturers could increase study achievement during blended learning. The support of technology and skills could ease the learning process.

Keywords: student assessment · blended consortium learning method · public health · surveillance

1 Introduction

The epidemiological transition has changed the mindset of most people in the world. A non-communicable disease is a disease or illness that can be prevented compared to a communicable disease with fast spreading [1]. This concept is taken part by a public health expert. The competence of a Bachelor of Public Health is to elaborate the knowledge and skills based on professional and technology and communication [2]. The course for public health students is preparing them to be good public health experts in the field. There are many methods to conduct learning, for example, online and offline systems. Those two methods have their strengths and weaknesses.

The COVID-19 pandemic that came to Indonesia for the first time in March 2020 has changed almost all the systems, including the education system [3]. Around March or April 2020, the government announced the online system for all the learning processes, including for university students [4]. The undergraduate student is the student who is prepared to be an expert in their field of study. The online learning system requires students to have some devices to support the online process [5]. Even though the daring system could not be implemented for those who lived in the area without an internet connection, the Universitas Muhammadiyah Semarang (Unimus) and the Universitas Muhammadiyah Jakarta (UMJ) tried to conduct the online learning process by using the *Moodle Application*. Besides using the Moodle Application, these two universities are also using *video conferences*. There are several ways that are prepared to ensure that students could get their success during this pandemic.

The blended consortium is the model which combines the 2 methods for each course. There is Surveillance of Public Health and Basic Public Health Sciences that are implemented with the online and offline systems. The online system uses the Moodle platform and the offline system uses video conferences. This study aimed to assess the student's perception of the implementation of the blended consortium learning model in Public Health Surveillance (PHS) and Basic of Public Health Sciences (BPHS) courses.

2 Research Methods

2.1 Study Design and Participants

This study aimed to understand the readiness of students in involving the blended learning consortium model. A total of 216 students in the 5th semester of Unimus and UMJ were involved in this study where 70 and 146 students were distributed in PHS and BPHS courses.

2.2 Data Collection

The data collection has been done by using a questionnaire for 7 sessions with a mix of online and offline, from September to October 2021. The questionnaire consists of 2 parts, namely BPHS and the PHS courses. Each questionnaire consists of several points such as access to the technology, skills in accessing and interacting online, the successfulness of learning aspects, the level of participation, independence, and student satisfaction with activities and learning outcomes through the implementation of the consortium collaborative learning model, motivation aspects, discussion through daring aspects, the contribution of digital content and virtual products in improving students' abilities in conducting studies and analyzing health situations, perceptions of lecturers and students on the application of collaborative learning models, digital content, and implemented virtual products, and the perception of lecturers and students on the application of this collaboration model will still be measured after a discussion session on broadcast material from student products is carried out.

2.3 The Implemented Model of Learning

One model designed for learning systems that showed the step by step basic learning is the ADDIE model [6]. This model consists of five phases: Analysis, Design, Development, Implementation, and Evaluation. This study consists of 3 steps, such as preparation, implementation, and evaluation. *Preparation.* The important step is the formulation of the same perception and needs analysis. The first step involves the head of the Public Health Program from Unimus and UMJ, and also the lecturers. The need analysis includes the study literature, the need identification of the student, and the renewal of the learning materials. The study literature aimed to find the relevant theory about blended learning (definition, module, model, combination variation, content, effective media, and strategy of development). *Implementation.* This step starts with the renewal of the materials and semester learning plans (SLP) and learning program plans (LPP). Additionally, modules and content are also processes. *Evaluation.* This step is developed with comprehensive goals during the process of preparation and implementation. In the final step, the researcher evaluated the outcome of the learning system.

2.4 Data Analysis

Data were analyzed descriptively and presented in frequency tables. Participants' responses to each question on the two questionnaires were presented in the frequency table.

3 Results

Table 1 showed the readiness of the student to join the PHS Course with the *Blended Consortium Learning System*. In terms of access to technology, more than half of the students had sufficient technology that could be accessed. There was an internet connection, laptop specifications, software, computer skills, and internet skills (57.1%, 51.4%, 40%, 55.7%, 57.1%, respectively). In terms of skills of accessing and interacting online, the majority of the student revealed readiness which showed by the ability to send emails, always use a laptop, communicate with daring technology, express the self by writing, use the daring device, give feedback, and propose the questions (50%, 44.3%, 45.6%, 57.1%, 64.3%, 75.7%, 74.3%, respectively). For the aspect of successfulness of learning, more than half of the students reported that daring learning is important for their success. In detail, they reported the importance of communicating with the lecturer, quick techniques, administrative technology, and using online technology (59.4%, 59.4%, and 66.7%, respectively). Regarding the level of participation, independence, and student satisfaction with activities and learning outcomes through the implementation of the consortium collaborative learning model, the majority of the students felt the importance of daring learning, such as being able to participate actively and the ability to implement the learning materials soon (66.7% and 60.9%).

The motivation aspects were also asked with the statement that they were still motivated even though the lecturer was not online every time and still could finish the work even though there was a problem with the internet and an issue in the house (53.6%,

Table 1. Assessment for Public Health Surveillance Course

Questions n = 70	Very low		Low		Good		Very good	
	n	%	n	%	n	%	n	%
Access to the technology								
My internet connection is quite adequate (Min. 2 Mbps)	4	5.7	12	17.1	40	57.1	14	20
I have adequate laptop specifications (Min. Win. 10 and RAM Storage 4GB)	5	7.1	19	27.1	36	51.4	10	14.3
I have a laptop with adequate software (Min. Office 2013, Chrome 92, Firefox 90, Internet Explorer 11)	4	5.7	17	24.3	28	40	21	30
I have basic computer skills (e.g., saving files, creating folders, and operating an office).	0	0	1	1.4	39	55.7	30	42.9
I have the skills to use the internet via a computer (e.g. using search engines, and entering passwords).	0	0	4	5.7	40	57.1	26	37.1
Skills in accessing and interacting online								
I am able to send emails with attachments	0	0	0	0	35	50	35	50
I think I'm comfortable using my laptop several times a week to participate in lectures	2	2.9	12	17.1	31	44.3	25	35.7

(continued)

Table 1. (continued)

Questions n = 70	Very low		Low		Good		Very good	
	n	%	n	%	n	%	n	%
I think I can effectively communicate with others using daring technology (e.g., email, chatting, and chat room)	2	2.9	7	10	34	45.6	27	38.6
I think I can express myself clearly by the written (e.g., mood, emotion, and humor)	4	5.7	10	14.3	40	57.1	16	22.9
I think I can use the daring device (e.g., email, chat) for doing the exercise with other students in the different time zone	0	0	7	10	45	64.3	18	25.7
I think I can ensure the right time to give feedback to other students and/ or the lecturer	0	0	7	10	53	75.7	10	14.3
I think I can propose the questions and give comments by writing clearly	1	1.4	3	4.3	52	74.3	14	20
Successfulness of learning Aspects								
Communicate with the lecturer regularly is important to my success in learning daring	0	0	5	7.2	41	59.4	23	33.3
The fast-supporting technique and administration is important to my success in learning daring	0	0	2	2.9	41	59.4	26	37.7

(continued)

Table 1. (continued)

Questions n = 70	Very low		Low		Good		Very good	
	n	%	n	%	n	%	n	%
I feel that my experience before with online technology (e.g., email, chat, online book) is important to my success in learning daring	0	0	3	4.3	46	66.7	20	29
The level of participation, independence, and student satisfaction with activities and learning outcomes through the implementation of the consortium collaborative learning model								
Often participating actively in online learning is important for my success in learning daring	0	0	6	8.7	46	66.7	17	24.6
The ability to sooner implement the learning materials is important for my success in learning daring	0	0	2	2.9	42	60.9	25	36.2
Motivation aspects								
I think I am still motivated even though the lecturer is not online every time	2	2.9	16	23.2	37	53.6	14	20.3
I think I can finish my work even though there is an online problem (e.g., my friend sends me a message or online browsing)	3	4.3	15	21.7	42	60.9	9	13

(continued)

Table 1. (continued)

Questions n = 70	Very low		Low		Good		Very good	
	n	%	n	%	n	%	n	%
I think I can finish my work even though there is a problem or issue in my house (e.g., television, noise, temperature, etc.)	7	10.1	11	15.9	40	58	11	15.9
Discussion through daring aspects								
I can chat with others through daring applications (e.g. internet chat, SMS)	0	0	1	1.4	45	65.2	23	33.3
I can chat with others using the daring application (e.g. internet chat, SMS)	0	0	2	2.9	46	66.7	21	30.4
I can follow the daring conversation (e.g., conversation, and instant message) while typing	0	0	7	10.1	42	60.9	20	29
Sometimes I tend to prepare much more time to respond to the questions	1	1.4	7	10.1	39	56.5	22	31.9
The contribution of digital content and virtual products in improving students' abilities in conducting studies and analyzing health situations								
I can link the materials of my study from video (duration 1–3 min) with the information I read through daring or a book	1	1.4	18	26.1	43	62.3	7	10.1
I can write the note while watching the video on my computer	3	4.3	12	17.4	44	63.8	10	14.5

(continued)

Table 1. (continued)

Questions n = 70	Very low		Low		Good		Very good	
	n	%	n	%	n	%	n	%
Perceptions of lecturers and students on the application of collaborative learning models, digital content, and implemented virtual products. The perception of lecturers and students on the application of this collaboration model will still be measured after a discussion session on broadcast material from student products is carried out.								
I can absorb the information about my study if presented in the video format	2	2.9	12	17.4	45	66.2	10	14.5

60.9%, 58%, respectively). In terms of the discussion through the daring learning aspect, the majority of the students could discuss with others well, such as could chat via application, chatting daring via application, following the daring conversation, and responding to the question (65.2%, 66.7%, 60.9%, 56.5%, respectively). The ability to contribute the digital and virtual products showed that most of the students could link the materials from the video and could write a note while watching the video (62.3% and 63.8%). The majority of the students also could absorb the information presented in video format 66.2%.

Table 2 presented the assessment for the BPHS course. Most of the students reported that they had the access to a sufficient internet connection, had enough specifications of the computer, enough software, had the basic skill to operate the computer, and had the basic skill to find information on the internet (64%, 52%, 48%, 55%, 58%, respectively).

Most of the students could send an email with attachments very well, usually use the computer, could communicate via daring, could express themselves by writing, could use the daring device, could give feedback, could propose questions, and were still motivated even though the lecturer is not online every time, could finish the work even though there is a problem from the online and environment, could link the materials from the video, could write the note while watching, and could absorb the information from video (60%, 52%, 53%, 62%, 66%, 66%, 55%, 63%, 51%, 66%, respectively). Based on the discussion through daring aspects, the majority of the students could chat via daring, could follow the daring conversation, and respond to the questions (66%, 62%, and 66%, respectively). In terms of the successfulness of learning aspects, more than half of the students felt important to communicate with the lecturer regularly, quickly support techniques and administration, participate actively during daring learning, had the experience of daring learning before, and ability to sooner implement the learning materials (61%, 60%, 62%, 64%, 54%, respectively).

Table 2. Assessment for Basic of Public Health Sciences Course

Questions n = 146	Very low	Low	Good	Very good
	%	%	%	%
Technology access aspects				
I have access to the computer with enough internet connection (e.g. Internet connection with speed min 2 Mbps)	5	14	64	17
I have access to the computer with enough new specifications (e.g. operation system Windows 10 with RAM at least 4 GB)	6	26	52	16
I have access to the computer with enough software (e.g. at least Office 2013, Office 365, Chrome 92, EdgeEdge 92, FireforFirefox 90, Internet Explorer 11)	8	22	48	23
I have the basic skills to operate the computer (e.g. save the file, create a folder)	1	7	55	38
I have basic skills to find information on the internet (e.g. using the search engine, putting the keywords)	1	8	58	34
Skills access to access and interact through daring				
I can send the email with attachments	1	5	34	60
I think I feel comfortable using the computer several times a week to participate in the learning	2	16	52	29
I think, I can communicate effectively with others using daring technology (e.g. email, chatting, chat room)	2	11	52	35
I think I can express myself clearly through writing (e.g. mood, emotion, and humor)	3	20	53	23
I think I can use the daring device (e.g. email, chat) for doing the exercise with other students in the different time zone	0	10	62	28
I think I can ensure the right time to give feedback to other students and/ or the lecturer	0	14	66	19
I think I can propose the questions and give comments by writing clearly	1	12	66	21
I think I am still motivated even though the lecturer is not online every time	3	22	55	19
I think I can finish my work even though there is an online problem (e.g. my friend sends me a message or online browsing)	5	16	63	16

(continued)

Table 2. (continued)

Questions n = 146	Very low	Low	Good	Very good
	%	%	%	%
I think I can finish my work even though there is a problem or issue in my house (e.g. television, noise, temperature, etc.)	8	25	51	17
I can link the materials of my study from video (duration 1–3 min) with the information I read through daring or a book	1	21	66	13
I can write the note while watching the video in my computer	3	19	62	16
I can absorb the information about my study if presented in the video format	1	14	66	18
Discussion through daring aspects				
I can chat with others through daring applications (e.g. internet chat, SMS)	1	21	66	13
I can follow the daring conversation (e.g. conversation, and instant message) while typing	3	19	62	16
Sometimes I tend to prepare much more time to respond to the questions	1	14	66	18
Successfulness of learning Aspects				
Communicate with the lecturer regularly is important to my success in learning daring	1	7	61	32
The fast-supporting technique and administration is important to my success in learning daring	0	5	60	35
Often participating actively in online learning is important for my success in learning daring	0	4	62	34
I feel that my experience before with online technology (e.g. email, chat, online book) is important to my success in learning daring	0	6	64	29
The ability to faster implement the learning materials is important for my success in learning daring	0	5	54	40

4 Discussion

Based on the results of this study, almost all of the students assessed the good category of the blended consortium learning model. It was shown from each point that more than half of them have good aspects, such as access to the technology, skills in accessing and interacting online, the successfulness of learning, participation and independence through the implementation of a blended learning model, motivation, discussion, contribution of digital content and virtual products, and perception of lecturer and student on the blended consortium learning model. In summary, 70 students from the Surveillance

of Public Health Program and 146 students from Basic of Public Health Science come from 2 universities (Unimus and UMJ).

In terms of the student's preparation to implement the daring and luring (blended consortium learning model), there are many aspects that are assessed. The implementation of daring learning could enhance the student's competency such as their development, implementation, and evaluation [7]. To implement the blended learning model, there are some methods mixed together such as pedagogical approaches and technologies, so technology plays a crucial role in this blended model [8]. The results of this study found that most of the students had good skills in using technology including the computer. Regarding the motivation aspect, the daring and luring methods motivated students because this model is more flexible and the internet could help students as a source [9]. The students need to be ready for the technology environment to implement the blended method as supported by the study in Russia [10]. In another study with the lecturer as the sample, blended learning could help the lecturer to improve teaching qualities and social skills [11]. The blended model is not always effective since one study found that just a minority could join the online learning system because of a lack of skills [12]. In terms of academic success and motivation, the study in Turkey found that it could increase success and motivation by using the blended method [13]. In terms of motivation and achievement, the study in Probolinggo Indonesia also found that the blended learning model could make differences compared to the direct learning model [14, 15]. There are benefits and limitations to using a blended model, including the readiness of students and teachers and lack of knowledge and experience [16]. The study in West Java Province found several points of using the daring learning method, including the preparation and planning, the process, media, and learning resources, and constraints with the software and devices problem [17]. So, the blended learning model has strengths and weaknesses but the majority of students in this study and previous research revealed had the ability to have the device and also the skills.

In terms of the strengths of the blended model. The results of this study were supported by the study in West Sumatera which found powerful changes in blended learning and the improvement of digital skills for students and teachers [18]. The readiness of the system and management was the most important point to implement the daring learning method and also the blended learning model [19]. The daring learning method of using a *web blog* is also effective to increase the English skills of the student [20]. Another study found that daring teaching has some problems including facilities and media, presentation of materials, discussion activities, and learning assessment [21]. In terms of the motivation for using the daring learning method, most students at Kuningan University felt motivated to join the daring learning [22]. The blended learning model has several types. One study tried to implement the mobile model and blended model that were designed as mobile blended learning [23]. Blended learning could be effective compared to traditional learning because it combined electronic environments and resources [24]. It was also shown in the study that students learn quicker and better through virtual learning because they can learn flexibly and had the autonomy of their interests [25]. A higher quality instructional method was found from the blended method compared to the traditional method because the scholar had the propensity to develop their success [26]. Another study with the Math Course found that the blended method could be more

effective in facilitating the growth in Math learning [27]. Another type of blended model combines face-to-face lectures, online sessions, and small group tutorial classes and it was found to have a positive impact [28]. So, in line with this study, the implementation of the blended consortium learning method has been well implemented.

5 Conclusion

The student assessment for implementation of the Blended Consortium Learning Method was categorized as a good implementation. It was shown by several aspects assessed, such as technology, skills, motivations, success, discussion, and participation. The good implementation of this model is based on the collaboration of the lecturer and students. The blended learning model does not only consist of 2 learning methods. It could be more, such as combining online (via Moodle Application), offline (Video conference), and small group discussion. More methods could be better in case the lecturer and students are ready. The next study could assess and implement the blended learning method with more than 2 methods.

Acknowledgments. This work was supported and partially funded by SEAMOLEC grant no 0699/SC/PG/2020.

References

1. Legetic, B., Medici, A., Hernández-Avila, M., Alleyne, G. A. O., and Hennis, A., *Economic Dimensions of Non-Communicable Disease in Latin America and the Caribbean*. Disease Control Priorities. Companion Volume, 2016.
2. Loke, A. Y., and Fung, O. W. M., *Nurses' competencies in disaster nursing: Implications for curriculum development and public health*, International journal of environmental research and public health, 11(3):3289–3303, 2014.
3. Djalante, R., Lassa, J., Setiamarga, D., Sudjatma, A., Indrawan, M., Haryanto, B., Mahfud, C., Sinapoy M. S., Djalante, S., Rafliana, S., Gunawan, A., Surtiari, G. A. K., Warsilah, H., *Review and analysis of current responses to COVID-19 in Indonesia: Period of January to March 2020*, Progress in Disaster Science, 6:100091, 2020.
4. Fatonia, Arifiati, N., Nurkhayati, E., Nurdiawati, E., Fidziah, Pamungkas, G., Adha, S., Irawan, Purwanto, Agus., Julyanto, O., Azizi, E., *University students online learning system during Covid-19 pandemic: Advantages, constraints, and solutions*, Systematic Reviews in Pharmacy, 11(7):570–576, 2020.
5. Y. B. Hermanto and V. A. Srimulyani, *The challenges of online learning during the covid-19 pandemic*, Jurnal Pendidikan Dan Pengajaran, 54(1):46–57, 2021.
6. Boyman, S. N., Jamal, M. B., Razali, N. A., and Aziz, M. S. A., *ADDIE Model Design Process For 21st Century Teaching and Facilitation Activities (PPC) In Nationhood Studies Module*, International Journal of Psychosocial Rehabilitation, 24(9), 2020.
7. Dewi, L., *Designing Online Learning in Higher Education Institution: Case Study in Curriculum and Instruction Course at Indonesia University of Education*, Edutech, 16(2), Juni 2017.

8. Hrastinski, S., *What Do We Mean by Blended Learning?*, TechTrends, 63(5):564–569, Sep. 2019, doi: <https://doi.org/10.1007/s11528-019-00375-5>.
9. Kholifah, N., Sudira, P., R. Rachmadtullah, M. Nurtanto, and S. Suyitno, *The effectiveness of using blended learning models against vocational education student learning motivation*, International Journal of Advanced Trends in Computer Science and Engineering, 9(5):7964–7968, Sep. 2020, doi: <https://doi.org/10.30534/ijatcse/2020/151952020>.
10. Krasnova, T., *A Paradigm Shift: Blended Learning Integration in Russian Higher Education*, Procedia - Social and Behavioral Sciences, 166:399–403, Jan. 2015, doi: <https://doi.org/10.1016/j.sbspro.2014.12.543>.
11. Yan-Ju, S. and Yan-Mei, S., *Perceptions and Practices of Blended Learning in Foreign Language teaching at USIM*. European Journal of Social Sciences Education and Research 12(1):170–176, Jan-Apr., 2018
12. Dziuban, C., Graham, C. R., Moskal, P. D., Norberg, A., and Sicilia, N. *Blended learning: the new normal and emerging technologies*, International Journal of Educational Technology in Higher Education, 15(1), Dec. 2018, doi: <https://doi.org/10.1186/s41239-017-0087-5>.
13. Akgündüz, D., and Akinoglu, O., *The impact of blended learning and social media-supported learning on the academic success and motivation of the students in science education*, Egitim ve Bilim, 42 (191):69–90, 2017, doi: <https://doi.org/10.15390/EB.2017.6444>.
14. Islam, S., Baharun, H., Muali, C., Ghufuron, M. I., IqBali, M., Wijayan, M., and Marzuki, I., *To Boost Students' Motivation and Achievement through Blended Learning*, Journal of Physics: Conference Series, 1114(1), Dec. 2018, vol. 1114, no. 1. doi: <https://doi.org/10.1088/1742-6596/1114/1/012046>.
15. Oweis, T. I., *Effects of Using a Blended Learning Method on Students' Achievement and Motivation to Learn English in Jordan: A Pilot Case Study*, Education Research International, 2018, doi: <https://doi.org/10.1155/2018/7425924>.
16. Medina, L. C., *Blended learning: Deficits and prospects in higher education*, 2018. [Online]. Available: <http://docs.google.com/>
17. Mutaqinah, R., and Hidayatullah, T., *Implementasi Pembelajaran Daring (Program BDR) Selama Pandemi Covid-19 di Provinsi Jawa Barat*, Jurnal PETIK, 6(2):86-95, Oct. 2020.
18. Dakhi, O., Jama, J., Irfan, D., Ambiyar, Ishak, *Blended Learning: A 21st Century Learning Model at College*. International Journal of Multiscience, 1(7):50-65, Nov. 2020.
19. Budhianto, B., *Analisis Perkembangan dan Faktor yang Mempengaruhi Keberhasilan Pembelajaran Daring (E-Learning)*. Jurnal AgriWidya, 1(1):11-29, Mar. 2020.
20. Khusniyah, N. L., and Hakim, L., *Efektivitas Pembelajaran Berbasis Daring: Sebuah Bukti Pada Pembelajaran Bahasa Inggris*, Jurnal Tatsqif, 17(1):19–33, Jul. 2019, doi: <https://doi.org/10.20414/jtq.v17i1.667>.
21. Ernawati, Y., Ernawati, Y., *Problematik Pembelajaran Daring Mata Kuliah Bahasa Indonesia*. Jurnal Ilmiah Bina Edukasi, 13(1): 01–15, Jun. 2020, <https://doi.org/10.33557/jedukasi.v13i1.1029>, Available: <http://journal.binadarma.ac.id/index.php/jurnalbinaedukasi>
22. Fitriyani, Y., Fauzi, I., and Sari, M. Z., *Motivasi Belajar Mahasiswa Pada Pembelajaran Daring Selama Pandemi Covid-19*, Jurnal Kependidikan: Jurnal Hasil Penelitian dan Kajian Kepustakaan di Bidang Pendidikan, Pengajaran dan Pembelajaran, 6(2):165, Jul. 2020, doi: <https://doi.org/10.33394/jk.v6i2.2654>.
23. Suartama, I. K., Setyosari, P., Sulthoni, and Ulfa, S., *Development of an instructional design model for mobile blended learning in higher education*, International Journal of Emerging Technologies in Learning, 14(16):4–22, Jan. 2019, doi: <https://doi.org/10.3991/ijet.v14i16.10633>.
24. Bryan, A., and Volchenkova, K. N., *Blended Learning: Definition, Models, Implications for Higher Education*, Bulletin of the South Ural State University series Education. Education Sciences, 8(2): 24–30, 2016, doi: <https://doi.org/10.14529/ped160204>.

25. Lungu, I., *The Increasing Need for Blended-learning Models in Courses of English for Specific Courses in Romanian Universities*, *Procedia - Social and Behavioral Sciences*, 76:470–475, Apr. 2013, doi: <https://doi.org/10.1016/j.sbspro.2013.04.148>.
26. Alijani, G. S., and Yu, Y., *Effectiveness of Blended Learning in Kipp New Orleans' Schools*, *Academy of Educational Leadership Journal*, 18(2):125-141, 2014.
27. Fazal, M., and Bryant, M., *Blended Learning in Middle School Math: The Question of Effectiveness*, *Journal of Online Learning Research*, 5(1):49-64, 2019.
28. Owston, R., York, D. N., and Malhotra, T., *Blended learning in large enrolment courses: Student perceptions across four different instructional models*, *Australasian Journal of Educational Technology*, 35(5), 29–45, 2019, <https://doi.org/10.14742/ajet.4310>

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

