



The Effectiveness of Hybrid Learning Models in Women's Clothing Practice Courses in the Post Pandemic

Roudlotus Sholikhah¹(✉), Widowati Widowati¹, and Sudiyono Sudiyono²

¹ Department of Home Economics, Faculty of Engineering, Universitas Negeri Semarang,
Semarang, Indonesia

roudlotus_sholikhah@mail.unnes.ac.id

² Department of Mechanical Engineering, Faculty of Engineering, Universitas Negeri
Semarang, Semarang, Indonesia

Abstract. The hybrid learning model is an educational model approach that combines online learning with learning in real classrooms. In this hybrid learning design, combining traditional face-to-face learning classes with web-based online learning and/or learning mediated using computers or smartphones. One of the practical courses at the UNNES Fashion Design Education Study Program that applies a hybrid learning model after the COVID-19 pandemic is the women's clothing production course. The purpose of this study was to determine the effectiveness of the hybrid learning model in women's fashion production practice courses in the post pandemic. This research method uses a mix method between a quantitative approach with experiment and a qualitative approach. The data was tested using the Paired-Samples T Test. The results showed that the hybrid learning model for women's clothing production practice courses was more effectively applied in the post pandemic based on the results of a different test analysis using the Paired Samples T Test method which proved significant at the 1% level. In addition, based on the results of a survey related to the implementation of hybrid learning and online learning seen through student responses, they also gave the same results. 62.8% of students prefer the hybrid learning model to online learning, because the material is considered easier to understand through Elena and also direct explanations through face-to-face and followed by practicum in the laboratory. The theoretical implication of this research is that the hybrid learning model is better to use than the online learning model. While the practical implication in this research is that lecturers can use a hybrid learning model for practical courses in women's clothing production because the results of the research show that for women's clothing production courses can be effectively implemented using a hybrid learning model.

Keywords: Effectiveness · Learning model · Hybrid learning · Women's clothing production

1 Introduction

Corona virus or known as Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) is a new virus that infects the respiratory system, this virus is commonly known as Coronavirus Disease (COVID-19) (Wahidah et al., 2020: 182). The COVID-19 pandemic was centered in the city of Wuhan, China at the end of 2019 and the spread of this virus was quite fast throughout the world. On March 2, 2020, Indonesia reported 2 confirmed cases of COVID-19, more and more were confirmed positive for the corona virus on March 16, there were 10 positive cases of COVID-19 (Dewi, 2020: 56). In an effort to reduce the growth rate of the COVID-19 virus, President Joko Widodo established a policy of Large-Scale Social Restrictions (PSBB). This Large-Scale Social Restriction Policy applies to restrictions on religious activities, restrictions on activities outside the home, workplace holidays, and also applies to the world of education, such as school holidays at all school levels, including university levels.

Education is considered important by the nation because through education a person is able to develop the abilities and character of a nation based on the ambition and determination to be achieved. Education is useful for developing student intelligence, which consists of intellectual, spiritual, emotional, social, and kinesthetic intelligence (Kartikasari, Roemintoyo, and Yamtinah 2018: 127). To avoid a decline in the quality of education, the Ministry of Education, Culture, Research, and Technology (Ministry of Education, Culture, Research, and Technology) issued circular letter No. 3 of 2020 concerning the Implementation of Education Policies in the Emergency Period for the Spread of COVID-19, this letter was issued as a solution to continue to create effective education, one of the policies is the teaching and learning process that takes place from home online or distance learning to avoid the spread of the virus in the educational environment (Baety and Munandar, 2021: 881). Referring to the circular letter of the Minister of Education and Culture (Mendikbud) of the Republic of Indonesia Nadiem Makarim Number 3 of 2020 regarding the prevention of the Corona virus or COVID-19 in Education units, and the Letter of the Secretary General of Education and Culture as of March 12, 2020 regarding the postponement of the event involving many people, the Chancellor of the State University Semarang appealed to all academics and UNNES education staff to optimize online learning methods through Elena and participate in the active prevention of the corona virus through the Chancellor's Circular Number: B/1413/UN37/2020 regarding vigilance and prevention of the spread of Covid-19 infection in academics and services. General public at the Semarang State University to carry out online Teaching and Learning Activities. The results of Aurora & Effendi's research (2019) show that the use of online learning media (e-learning) has a positive influence on student motivation. This is in line with Nadziroh's research (2017) which states that online learning can effectively improve the quality of learning, because the learning process is not only confined to one time and in a room. The problem at this time is that there are many obstacles in the online learning process, one of which is the application of effective learning models, especially for practicum courses.

In early 2022, along with the decline in Covid 19 cases and the change in the status of Covid from a pandemic to endemic, the Minister of Education and Culture (Mendikbud) of the Republic of Indonesia Nadiem Makarim issued a regulation through the Circular Letter of the Ministry of Education, Culture, Research and Technology Number 2 of 2022 concerning Guidelines Implementation of Learning in the COVID-19 Pandemic Period on February 3, 2022, supported by the Instruction of the Minister of Home Affairs Number 07 of 2022 concerning the Enforcement of Activity Restrictions for Controlling the Spread of COVID-19 Level 3 in the Java-Bali Region dated February 8, 2022, and Instruction of the Mayor of Semarang No. 4 of 2022 concerning the Enforcement of Restrictions on Community Activities in the Context of Preventing the Spread and Control of COVID-19 in the City of Semarang on February 15, 2022, the Chancellor of the State University of Semarang issued a circular letter Number B/1768/UN37/KM/2022 regarding adjustments to academic activities for the even semester of the academic year 2021/2022 at the State University of Semarang which contains lecture instructions for the even semester of the 2021/2022 academic year for undergraduate and D3 students who take theoretical and practical courses carried out by hybrid learning.

Hybrid learning is learning that is applied face-to-face and online learning. Hybrid learning proposes to carry out 50% face-to-face learning and 50% online classes (Febnesia et al., 2021: 533). Hybrid learning is considered an important learning method after the COVID-19 pandemic (Handayani and Utami 2020: 277). The benefits of implementing hybrid learning are to make the learning process effective, especially in the current situation, to have a good effect on student learning abilities, to improve learning outcomes, and to keep up with the times (Dwijonagoro and Suparno, 2019: 158–166).

The hybrid learning learning method is an educational model approach that combines online learning with learning in real classrooms like face-to-face in general. In this hybrid learning design, it combines traditional face-to-face learning classes with web-based online learning and/or mediated learning using computers or smartphones. Schemes and learning times inside and outside the classroom are arranged in such a way as to get the advantages of each lesson.

Hybrid Learning is a combination of e-learning based learning methods (electronic learning) with face-to-face learning methods or conventional methods. The use of this method is relatively new in the world of education. Jeffrey, Lynn, et al. (2014, p. 121; Bains, 2010, p. 112). Ana Sutisna suggests that Hybrid learning is a learning method that combines two or more methods and approaches in learning to achieve the objectives of the learning process (Sutisna, 2016: 158). According to Thorne (in Sutisna, 2003: 16) that what happens in conventional classrooms where educators and students meet face-to-face, with online learning which is usually accessed anytime and anywhere. Another form of hybrid learning is virtual meetings between educators and students. Where they are possible to be in different places, but can give each other feedback, ask questions, answer, interact between students and educators as well as between students and students. Meanwhile, according to Garrison & Vaughan (2008) Hybrid learning is a good blend of online and face-to-face learning experiences.

According to Bersin (2004: 15) Hybrid Learning is the combination of different training media (technologies, activities, and type of events) to create an optimum training program for a specific audience. The term (Hybrid) means that traditional structured-led

training is being supplemented with other electronic formats. In the context of the book blended learning program use many different forms of e-learning, perhaps complement with instructor-led training in other live formats. From these sneezes, it can be concluded that hybrid learning is a combination of various learning media (technology, activities, types of events) to create an optimal learning program for students specifically. The term (mixed) is a learning model that combines the strengths of traditional face-to-face learning with electronic learning formats. In the context of the book, mixed learning programs use various forms of e-learning, which may be supplemented by a learning instructor or in a hands-on format.

In the opinion of Ali Massoud, et al. (2011, p. 4) hybrid learning in principle is simple but still relatively diverse. Hybrid learning is very easy to implement because it is a combination of conventional learning (synchronous) by combining internet-based learning (asynchronous). Hybrid learning is a combination of various approaches in learning. So it can be stated that Hybrid learning is a learning method that combines two or more approach methods in learning to achieve the objectives of the learning process. One example is the combination of the use of web-based learning and the use of face-to-face methods that are carried out simultaneously in learning. The term blended learning is also known as hybrid learning and mixed learning. In addition, according to Jusoff and Khodabandelou (2009, p. 82), Hybrid learning not only reduces the distance that has existed between students and teachers but also increases the interaction between the two parties.

Hybrid Learning is known as learning that combines one or more learning models. This is reinforced by the opinion of Hendrayati, Heny & Budhi (2016: 182) which states that the hybrid program that develops is a combination of one or more dimensions:

a. Face-to-face learning

Face-to-face learning is held in the form of learning activities in the classroom, practical activities in the laboratory, mentoring or on-the-job training. Learning activities in the classroom include the delivery of material through face-to-face learning, presentation discussions, exercises and exams

b. Synchronous Virtual Collaboration

Synchronous Virtual Collaboration is a collaborative teaching format that involves interaction between teachers and students delivered at the same time. This collaborative activity is carried out by utilizing Instant Massaging (IM) or chat. This facility will be used to communicate between teachers and students during lessons.

c. Asynchronous Virtual Collaboration

Asynchronous Virtual Collaboration is a collaborative teaching format that involves interaction between teachers and students delivered at different times. The facilities used in this learning activity are online discussion boards or discussion forums and e-mail.

d. Self-Pace Asynchronous

Self-Pace Asynchronous is an independent learning model at different times where students can study the material provided by the teacher in the form of a module of teaching materials or do assignments and exercises online. In addition, self-paced asynchronous students can learn subject matter by means of links to other teaching resources.

Hybrid learning is learning with an online system combined with offline or PTM (Face-to-Face Learning) so as to produce maximum interaction and participation compared to only online. The reason for the existence of this system is because PJJ (Distance Learning) is declared less effective if implemented in the long term. Similarly, various studies also show that PJJ has many complaints because its preparation is considered inadequate and presents inefficiencies that have an impact on student psychosocial.

The Semarang State University Fashion Design Education Study Program is one of the study programs that implements hybrid learning according to the Chancellor's circular letter Number B/1768/UN37/KM/2022. One of the courses that apply hybrid learning is the production of women's clothing. Description This course provides knowledge and skills, and attitudes in the manufacture of women's clothing including casual clothing including blouses and culotte and women's pants, two piece work clothes, and party clothing including dresses and kebaya. Adi fashion lecture material is presented in the form of theory and practice. The theoretical material includes knowledge and basic principles of women's clothing, knowledge of sewing techniques on women's clothing, knowledge of women's clothing models. Practical materials include making designs up to realizing these designs into patterns, and real forms in the form of women's clothing products. Women's fashion production practice courses are one of the difficult courses to apply online. During the Covid 19 period, so far, learning in fashion production courses has been carried out online through Elena. In practical learning, lecturers provide material through Elena asynchronously in the form of video tutorials and combined with zoom meeting lectures to explain the material in synchronicity. The weakness of online learning in the practical course of women's clothing production is the limited facilities and infrastructure of students in carrying out practical assignments. In addition, when evaluating practical learning, lecturers cannot see the results of student practicums directly, but only through documentation reports and student videos. This makes practical learning online considered less effective.

According to Hidayat (1986) effectiveness is a measure that states how far the target (quantity, quality and time) has been achieved. Where the greater the percentage of targets achieved, the higher the effectiveness. Meanwhile, Handoko (1997: 7) explains that effectiveness is the ability to choose the right goals or the right equipment to achieve the stated goals. Effectiveness level of ability to achieve goals properly and well (Devung, 1988: 25).

Steers (1985: 87) explains that effectiveness is the extent of the effort of a program as a system with certain resources and means to meet its goals and objectives without crippling the means and resources and without putting undue pressure on its implementation. In learning, careful planning is needed, making learning tools, choosing strategies, media, techniques, learning models, to learning evaluations that are all mutually sustainable. The need for the use of effective and innovative learning models so that the learning carried out can be more varied and run smoothly. The use of the learning model is also adjusted to the material to be taught so that the suitability between the two and all components is appropriate.

One indicator of learning effectiveness is the achievement of a learning goal. The learning objectives are achieved optimally, so it can be said that learning has reached

its effectiveness. In addition, active student involvement shows learning efficiency. The teaching and learning process is said to be effective if the learning can achieve the expected goals and students can absorb the subject matter and practice it.

The effectiveness of learning according to Rohmawati (2015: 17) is a measure of the success of an interaction process between students and between students and teachers in educational situations to achieve learning objectives. The effectiveness of learning can be seen from student activities during learning, student responses to learning and students' mastery of concepts. To achieve an effective and efficient learning concept, there needs to be a reciprocal relationship between students and teachers to achieve a common goal, besides that it must also be adapted to the conditions of the school environment, facilities and infrastructure, as well as learning media needed to help achieve all aspects of development. Student. So, the effectiveness of learning can be interpreted as a measure of the success of a learning process between students and students, or students and teachers in achieving learning objectives.

Hybrid learning is a new learning system for education in Indonesia, so there are many possible challenges that must be faced. Supporting infrastructure facilities for hybrid learning must be equipped and controlled by lecturers and students. Therefore, there is a need for evaluation and research on "The effectiveness of the hybrid learning learning model in women's fashion production practice courses after the COVID-19 pandemic". This study aims to test the effectiveness of the hybrid learning learning model in women's clothing production courses by looking at the differences in student scores before and after using the hybrid learning learning model. Before using hybrid learning, the method used was online.

2 Method

This study uses a mix method, namely quantitative and qualitative approaches in explaining a phenomenon or problem. The quantitative approach aims to see the effectiveness of the hybrid learning learning model through test scores with the experimental method. While the qualitative approach aims to see student responses or assessments of the two learning models, namely online learning and hybrid learning through questionnaires distributed after the two methods are implemented.

Sources of data obtained through primary data, namely the results of scores in the course of women's clothing production and questionnaires. Questions are given at the end of each meeting after the material is delivered using each different method, namely the online model and the Hybrid learning model. Questionnaires were given after all methods were implemented to determine student responses or assessments related to the two methods.

Secondary data is data obtained or collected by people conducting research from existing sources (Hasan, 2002: 58). Secondary data is used to support primary data information that has been obtained, namely from library materials, literature, previous research, books, journals and so on.

The sample in this study were all students who took the women's fashion production course as many as 36 students in class 1, and 39 students in class 2. The results of the scores before and after using the hybrid learning learning model were compiled and

then processed using the Paired-Samples T test method. According to Widiyanto (2013), Paired-Samples T Test is used to examine the effectiveness of a treatment (treatment) which is characterized by the difference in the average before and after the treatment is given. The treatment in this research is the application of a hybrid learning model.

The data was then processed using the Paired-Samples T Test method, then analyzed to find out whether there were significant differences in learning outcomes for the application of the hybrid learning model for the production of women's clothing courses. The test criteria as the basis for making decisions in this method is if the probability (Asymp.Sig) < 0.05, then there is a significant difference in student learning outcomes before and after using the hybrid learning model. On the other hand, if the probability (Asymp.Sig) > 0.05, then there is no significant difference in student learning outcomes in the women's clothing production course before and after using the hybrid learning model.

Data collection is one of the activities supporting the implementation of research activities, where data collection is carried out to determine the success or failure of a research. Data collection procedures used by researchers include:

1. Test

The test is used to get student scores before and after using the hybrid learning learning model.

2. Questionnaire

Questionnaires are used to collect data for students taking women's clothing production courses via the google form.

3. Interview

Interview is a data collection technique by asking questions directly by the interviewer to the respondent, and the respondent's answers are recorded or recorded (Hasan, 2002: 85). Interview activities are usually submitted orally to the subject under study. Interviews in this study were used to determine the effectiveness of hybrid learning in the fashion production course.

4. Documentation

Data in the form of this document becomes data that can be used by researchers to explore past information. Documentation comes from the word document which means written goods. Documentation method is a data collection procedure used to trace historical data. Documentation according to Sugiyono (2015: 329) is a method used to obtain data and information in the form of books, archives, documents, written numbers and pictures in the form of reports and information that can support research.

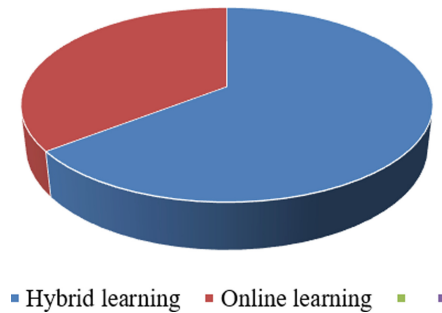
3 Results

Based on the results of the Paired-Samples T Test, it was found that there were significant differences in student learning outcomes between before and after the hybrid learning model. This can be seen from the level of significance in the test results which are at the level of 1% (0.01). The test results can be seen in the Table 1.

From the results of the different tests above, it can be seen that the average value of students when using the online method or before using hybrid learning is 50.96. After

Table 1. Results of Paired-Samples T Test

	Pretest	Posttest
Number of Samples	75	75
Mean	50.96	69.61
Mean Pretest – Posttest	18.65	
t-count	-5.889	
Sig.	0.000	

**Fig. 1.** Student interest

using hybrid learning increased to 69.61 points. The average difference in scores from the pre-test (before) and post-test (after) is 18.65 points with a t-count of $-5,889$ and a significance level of 0.000 or less than ($<$) 0.01 which indicates that the difference test is significant at the 1% level.

After the online learning and hybrid learning models are implemented. Students were asked to provide responses through questionnaires to find out which learning model was preferred in the study of women's fashion practice lectures. Some of the responses to the hybrid learning model can be seen in Table 2 that of the 75 responses given by students, most of them liked the hybrid learning model because they liked the learning model used, namely the provision of material explained by the course lecturer in the form of modules and videos. Submitted on the Elena application accompanied by a face-to-face meeting for practicum for women's clothing production courses.

In addition, out of 75 students, 62.8% of students prefer the hybrid learning model in the Women's Clothing Production Course compared to the online learning method which is only 34.9% as shown in Fig. 1.

4 Discussion

The results of this study indicate that the hybrid learning model is an effective learning model that can be used for women's clothing production courses. The hybrid learning learning model can make it easier for students to understand the material and increase the

Table 2. Some student responses to the implementation of hybrid learning in women's clothing production courses

1.	Because understanding something is not easy just by reading but must be accompanied by face to face so that we know which parts really need to be clarified in understanding and can also respond quickly if there are exercises due to practice. directly easier to understand than theory
2.	You can understand better because after giving the material, it is immediately explained directly by Lecturer
3.	I chose hybrid learning because this method in my opinion is the easiest, and understand in understanding the material of women's clothing production practices
4.	Because we have been given PPT material, we have to explain how to do it and so that students fully understand how to make women's clothing products
5.	Because the lecturer directly explains, and directly discusses the material rather than give a pdf file but can't understand
6.	Because hybrid learning is like a conventional method, it can be practiced directly even though it is divided into sessions
7.	In my opinion, this method is more effective in using time, quota and easy to understand the material and be able to practice directly
8.	Because the hybrid learning method is not constrained by the network, and it is easier to do.

value of women's clothing production courses. The effectiveness of the hybrid learning learning model is measured through the analysis of the difference test or the test of differences in values from the evaluation results that are proven to be significant. According to Dimiyati and Mujiono (1999) evaluation was conducted to determine the level of student understanding in achieving learning objectives. One of the indicators or measuring tools for student understanding in evaluation is test/quiz scores. Based on the results of the quiz in Table 1. It shows that the hybrid learning model, namely "giving material in Elena, followed by an explanation through face-to-face and practical work is the most effective method and proven significant after being tested using the Paired-Samples T Test method. This method is also considered effective because student scores are higher using the hybrid learning model compared to using the online method.

In addition, based on the results of a survey related to the implementation of the two models seen through student responses, they also gave the same results. 62.8% of students prefer the hybrid learning model to online learning, because the material is considered easier to understand through Elena and also direct explanations through face-to-face.

The survey results show that the hybrid learning model is preferred and can help students understand lecture material effectively and efficiently. In the hybrid learning model, the average student quiz score is higher because students understand the material faster when the material is explained face-to-face. Like the responses expressed by students in Table 2, the majority stated that they prefer the hybrid learning model because it is almost the same as conventional learning so it is easier to understand. What is not

understood can be directly asked so that the material can be understood immediately. This also affects the results of the tests they do after the material is delivered.

To achieve maximum hybrid learning, it is necessary to support infrastructure including laptops, camera tripods, smartphones, LCDs and screens. The following is a hybrid learning atmosphere that is applied to the women's fashion production course.

5 Conclusions

The hybrid learning model for women's clothing production practice courses is more effectively applied after the COVID-19 pandemic based on the results of a different test analysis using the Paired Samples T Test method which proved significant at the 1% level. In addition, based on the results of a survey related to the implementation of the two models seen through student responses, they also gave the same results. 62.8% of students prefer the hybrid learning model to online learning, because the material is considered easier to understand through Elena and direct explanations through face-to-face.

The results of this study provide theoretical and practical implications. The theoretical implications of this research are related to learning models that can be used during the post-covid-19 pandemic, namely using a hybrid learning model because the average value in the hybrid learning model is higher than the online method. The practical implications of this research are related to the choice of courses in applying the hybrid learning model. Lecturers can apply the hybrid learning model in the teaching and learning process for practical women's clothing production courses because the results of this study indicate that women's clothing production courses can be effectively implemented using a hybrid learning model.

References

- E.M. Clarke, E.A. Emerson, Design and synthesis of synchronization skeletons using branching time temporal logic, in: D. Kozen (Eds.), *Workshop on Logics of Programs*, Lecture Notes in Computer Science, vol. 131, Springer, Berlin, Heidelberg, 1981, pp. 52–71. DOI: <https://doi.org/10.1007/BFb0025774>
- J.P. Queille, J. Sifakis, Specification and verification of concurrent systems in CESAR, in: M. Dezani-Ciancaglini and U. Montanari (Eds.), *Proceedings of the 5th International Symposium on Programming*, Lecture Notes in Computer Science, vol. 137, Springer, Berlin, Heidelberg, 1982, pp. 337–351. DOI: https://doi.org/10.1007/3-540-11494-7_22
- C. Baier, J-P. Katoen, *Principles of Model Checking*, MIT Press, 2008.
- M. Kwiatkowska, G. Norman, D. Parker, Stochastic model checking, in: M. Bernardo, J. Hillston (Eds.), *Proceedings of the Formal Methods for the Design of Computer, Communication and Software Systems: Performance Evaluation (SFM)*, Springer, Berlin, Heidelberg, 2007, pp. 220–270. DOI: https://doi.org/10.1007/978-3-540-72522-0_6
- V. Forejt, M. Kwiatkowska, G. Norman, D. Parker, Automated verification techniques for probabilistic systems, in: M. Bernardo, V. Issarny (Eds.), *Proceedings of the Formal Methods for Eternal Networked Software Systems (SFM)*, Springer, Berlin, Heidelberg, 2011, pp. 53–113. DOI: https://doi.org/10.1007/978-3-642-21455-4_3

- G.D. Penna, B. Intrigila, I. Melatti, E. Tronci, M.V. Zilli, Bounded probabilistic model checking with the muralpha verifier, in: A.J. Hu, A.K. Martin (Eds.), *Proceedings of the Formal Methods in Computer-Aided Design*, Springer, Berlin, Heidelberg, 2004, pp. 214–229. DOI: https://doi.org/10.1007/978-3-540-30494-4_16
- E. Clarke, O. Grumberg, S. Jha, et al., Counterexample-guided abstraction refinement, in: E.A. Emerson, A.P. Sistla (Eds.), *Computer Aided Verification*, Springer, Berlin, Heidelberg, 2000, pp. 154–169. DOI: https://doi.org/10.1007/10722167_15
- H. Barringer, R. Kuiper, A. Pnueli, Now you may compose temporal logic specifications, in: *Proceedings of the Sixteenth Annual ACM Symposium on the Theory of Computing (STOC)*, ACM, 1984, pp. 51–63. DOI: <https://doi.org/10.1145/800057.808665>
- A. Pnueli, In transition from global to modular temporal reasoning about programs, in: K.R. Apt (Ed.), *Logics and Models of Concurrent Systems*, Springer, Berlin, Heidelberg, 1984, pp. 123–144. DOI: https://doi.org/10.1007/978-3-642-82453-1_5
- B. Meyer, Applying “Design by Contract”, *Computer* 25(10) (1992) 40–51. DOI: <https://doi.org/10.1109/2.161279>
- S. Bensalem, M. Bogza, A. Legay, T.H. Nguyen, J. Sifakis, R. Yan, Incremental component-based construction and verification using invariants, in: *Proceedings of the Conference on Formal Methods in Computer Aided Design (FMCAD)*, IEEE Press, Piscataway, NJ, 2010, pp. 257–256.
- H. Barringer, C.S. Pasareanu, D. Giannakopolou, Proof rules for automated compositional verification through learning, in *Proc. of the 2nd International Workshop on Specification and Verification of Component Based Systems*, 2003.
- M.G. Bobaru, C.S. Pasareanu, D. Giannakopoulou, Automated assume-guarantee reasoning by abstraction refinement, in: A. Gupta, S. Malik (Eds.), *Proceedings of the Computer Aided Verification*, Springer, Berlin, Heidelberg, 2008, pp. 135–148. DOI: https://doi.org/10.1007/978-3-540-70545-1_14
- I. Wahidah, R. Athallah, N.F.S. Hartono, M.C.A. Rafiqie, M.A. Septiadi, Pandemi COVID-19: Analisis Perencanaan Pemerintah dan Masyarakat dalam Berbagai Upaya Pencegahan, *Jurnal Manajemen dan Organisasi*, vol. 11, 2020, pp. 179188. DOI: <https://doi.org/10.29244/jmo.v11i3.31695>
- W.A.F. Dewi, Dampak Covid-19 terhadap Implementasi Pembelajaran Daring di Sekolah Dasar. Edukatif: Jurnal Ilmu Pendidikan, vol. 2, 2020, pp. 55–61. DOI: <https://doi.org/10.31004/edukatif.v2i1.89>
- A. Kartikasari, Roemintoyo, S. Yamtina, The Effectiveness of Science Textbook Based on Science Technology Society for Elementary School Level, *International Journal of Evaluation and Research in Education (Ijere)*, vol. 7, 2018, pp. 127–131. DOI: <https://doi.org/10.11591/Ijere.V7i2.13022>
- D.N. Baety, D.R. Munandar, Analisis Efektifitas Pembelajaran Daring Dalam Menghadapi Wabah Pandemi Covid-19, *Edukatif: Jurnal Ilmu Pendidikan*, vol. 3, 2021, pp. 880–989. DOI: <https://doi.org/10.31004/Edukatif.V3i3.476>
- F. Nadziroh, Analisa Efektivitas Sistem Pembelajaran Berbasis E-learning. *Jurnal Ilmu Komputer dan Desain Komunikasi Visual*, vol. 2, 2017, pp. 1–14. DOI: <https://doi.org/10.55732/jikdis.komvis.v7i1.363>
- H. Febnesia, M. Nurtanto, I. Ikhsanudin, H. Abdillah, Pengaruh Model Pembelajaran Hybrid Learning Dengan Metode Tutor Sebaya Terhadap Hasil Pengelasan Pada Siswa SMKs Yabinka. *Research and Development Journal of Education*, vol. 7, 2021, pp. 532–543. DOI: <https://doi.org/10.30998/rdje.v7i2.11265>
- T. Handayani, N. Utami, The Effectiveness of Hybrid Learning in Character Building of Integrated Islamic Elementary School Students During the Covid -19 Pandemic, *Journal of Educational Science and Technology (Est)*, vol. 6, 2020, pp. 276–83. DOI: <https://doi.org/10.26858/Est.V1i1.15545>

- S. Dwijonagoro, S. Suparno, *Pranatacara Learning: Modeling, Mind Mapping, ELearning, Or Hybrid Learning?*, Jurnal Cakrawala Pendidikan, vol. 38, 2019, pp. 156–173. DOI: <https://doi.org/10.21831/cp.V38i1.23034>
- L.M. Jeffrey, J. Milne, G. Suddaby, A. Higgins, *Blended learning: How Teachers Balance the Blend of Online and Classroom Components*, Journal of Information Technology Education, vol. 13, 2014, pp. 121–140.
- A. Sutisna, *Pengembangan Model Pembelajaran Blended Learning Pada Pendidikan Kesetaraan Program Paket C dalam Meningkatkan Kemandirian Belajar*, Jurnal Teknologi Pendidikan, vol. 18, 2016, pp. 156–168. DOI: <https://doi.org/10.21009/jtp.v18i3.5373>
- Sutisna, *Perilaku Konsumen dan Komunikasi Pemasaran*, Cetakan Ketiga. Bandung: PT. Remaja Rosdakarya, 2003.
- D.R. Garrison, H. Kanuka, *Blended Learning: Uncovering its Transformative Potential in Higher Education*, Internet and Higher Education Journal, vol. 7, 2004, pp. 95–105. DOI: <https://doi.org/10.1016/j.iheduc.2004.02.001>
- J. Bersin, *The Blended Learning Book: Best Practices, Proven Methodologies, and Lessons Learned*, Pfeiffer, San Francisco, 2004.
- A. Massoud, U. Iqbal, D. Stockley, A. Noureldin, *Using Blended Learning to Foster Education in a Contemporary Classroom*, Transformative Dialogues: Teaching and Learning Journal, vol. 5, 2011, pp. 1–11.
- K. Jusoff, R. Khodabandelou, *Preliminary Study on the Role of Social Presence in Blended Learning Environment in Higher Education*, Journal of International Education Studies, vol. 2, 2009, pp. 8292.
- H. Heny, B. Pamungkas, *Implementasi Model Hybrid Learning pada Proses Pembelajaran Mata Kuliah Statistika II di Prodi Manajemen FPEB UPI*, Jurnal Penelitian Pendidikan LPPM UPI, vol. 3, 2016, pp. 181–184. DOI: <https://doi.org/10.17509/jpp.v13i2.3430>
- Hidayat, *Teori Efektifitas dalam Kinerja Karyawan*, Gajah Mada University Press, Yogyakarta, 1986.
- Handoko, *Manajemen Personalial dan Sumber Daya Manusia*, Andi, Yogyakarta, 1997.
- D. Simon, *Pengantar Ilmu Administrasi dan Manajemen*, Jakarta: Departemen Pendidikan Dan Kebudayaan, Direktorat Jenderal Pendidikan Tinggi, Pengembangan Lembaga Pendidikan Dan Tenaga Kependidikan, 1988.
- R.T. Mowday, G.R. Ungson, *Managing Effective Organizations: An Introduction*. Boston, Kent Publishing Company, Mass., 1985.
- A. Rohmawati, *Efektivitas Pembelajaran*, Jurnal Pendidikan Usia Dini, vol. 9, 2015, pp. 15–32. DOI: <https://doi.org/10.21009/JPUD.091.02>
- M.I. Hasan, *Pokok-pokok Materi Metodologi Penelitian dan Aplikasinya*, Ghalia Indonesia, Bogor, 2002.
- M. Widiyanto, *Statistika Terapan: Konsep dan Aplikasi dalam Penelitian Bidang Pendidikan, Psikologi, Ilmu Sosial Lainnya*. PT. Alex Media Komputindo, Jakarta, 2013.

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.

