Distance Learning Practicum During Covid-19 Pandemic

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Abstract. Due to the COVID-19 spreading rapidly, schools worldwide are using online learning to slow the spread of the disease. One of the lessons that face significant challenges during the pandemic is practical learning. Practical learning that should be done in the laboratory with the teacher's direct supervision should be accomplished by students at home during this pandemic. This study was conducted to collect information about distance practicum learning media in a new normal period. The method used in this study is through a literature study that gathers data from several previous studies related to practicum learning and distance practicum media. Learning media that can be used for distance learning practicum can be done with various online applications, videos, virtual laboratories, augmented reality, and Learning Management Systems (LMS). The preparation of distance practicum learning and the use of appropriate practicum media is designed to support a smooth and effective practicum learning process to help the learners meet their learning objectives.

Keywords: Practicum · Distance Learning · Learning Media

1 Background

The spread of COVID-19 becomes a danger to humanity since it has limited people's daily activity globally, including many educational activities. In order to decrease the extended risks of the virus, many education institutions have engaged in online learning using various online platforms. Debating how universities, teachers and students transition in crisis response, challenges and opportunities, it is clear that online learning will be more feasible and thus, the educational activities will be more hybrid, unlike emergency distance learning. The challenges of this one-time pandemic pass are well studied and transformed into opportunities [1].

Workshops and hands-on courses are some of the most difficult topics in implementing open and distance learning. During the Covid19 pandemic, the problems increase significantly as some practical courses must rely solely on independent online learning [2]. Although various learning strategies have been used for these purposes, there are still serious problems. Practical learning that should be done in the laboratory or any other media with the teacher's direct supervision should be accomplished by students at home during this pandemic.

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Despite the actions taken, the institution must continue to uphold high academic standards and give students the kind of education required to attain the level of academic performance corresponding to each degree [3]. This presented difficulties for the entire university system, forcing scholars to switch to distance learning and other methods in order to perform well in the lab.

A practicum-free course is easier to construct as compared to a practicum-required course. Therefore, it is a new challenge for lecturers to ensure that the practicum learning implementation is successfully conducted. The purpose of this study is to offer alternative solutions for teachers and lecturers regarding practicum learning media to support distance learning practicum implementation.

1.1 Distance Learning

Greenberg (1998) defines modern distance learning as a planned teaching and learning process designed to remotely access learners using a wide range of technologies and facilitate learner interaction and learning authentication. Teaster and Blieszner (1999) say the term "distance education" applies to a variety of teaching methods. However, the main difference is that teachers and students are in different places and time. According to this definition, students and teachers are spatially separated, but not necessarily temporally. This includes compressed video delivered in real time. As mentioned earlier, this type of real-time learning is the fastest growing distance learning tool today. For this reason, much of the discussion here focuses on the perspectives and challenges of this technology.

1.2 Practicum

Practicum courses are subjects that are usually conducted face to face between students and lecturers in the Laboratory. Practicum courses emphasize the psychomotor aspects, mostly done through laboratory work that aims to train skills (competencies) in specific fields of study. The competency in question is the competence that emphasizes what can be done (practiced) by students and not merely knowledge/theory [4].

1.3 Learning Media

Learning media are instruments that can be used to record, process, and reorganize verbal or visual knowledge. They can be graphic, photographic, or electronic in nature. Media is a part of learning resources or actual objects with educational materials in the classroom setting that can encourage students to study (Sutirman 2013). Online learning media is an alternative way for teachers to carry out the teaching and learning process as the pandemic progresses [5]. There are many options for online learning tools, from simple messaging (chat) to media that can display videos or conduct video conferencing.

2 Discussion

The Covid19 pandemic has put tremendous pressure on the education system for all teaching and learning activities, as well as for specific hands-on learning [6]. Hands-on

training that was originally taught in the laboratory can be applied at home [7]. How can practicum which is an activity to hone skills be carried out online/remotely? How can learning outcomes be achieved with non-real activities? How is it possible that knowledge and work attitude can be built without direct interaction between lecturers and students?

Literature studies have shown that to improve efficiency and achieve the goals of hands-on learning during the Covid19 pandemic, this can be done using educational tools. Various online media platforms such as Google Meet, Google Classroom, Virtual Lab, and Augmented Reality are widely used to support remote classes [8], zoom, kahoot, schoology [9], and whatsapp [10].

Of course, hands-on training in a pandemic era must include skills as operators, senders and receivers of hands-on results [11]. The benefit of using technology in hands-on learning is that it allows students to explore more deeply the content of science and technology in their applications, as well as practice critical thinking skills in problem solving and creativity in developing science and technology. If this is done as part of a basic project [12].

3 Media for Practicum Learning

3.1 Zoom Cloud Meeting

Zoom Cloud Meeting is a widely used learning medium to enable learning activities and discussions such as synchronous learning and to support needs of communication with many people anytime, anywhere without having to meet physically, it is one of the forms. Zoom allows instructors and students to conduct video conferences. Video conferencing is used as a communication tool for online learning instead of a real meeting in an offline class, but it is completely effective due to inadequate signals due to choppy audio and lack of students. Not the target. “understanding the material” [13].

3.2 Augmented Reality

One of the uses of technology in education is the use of augmented reality technology in learning. Based on the results of literature analysis, augmented reality is known to have several advantages. The advantages of augmented reality are:

a. interactive,
b. effective use,
c. widely implementable on a variety of media,
d. simple object modeling due to the small number of objects displayed,
e. cost, too many creations without spending,
f. easy to use [14].

From the results of the analysis, we can conclude that augmented reality can be used to support internship activities. Must be developed with supplemental support from augmented reality to support the process of internship activities.

3.3 Video

A video is a series of videos with audio that contains messages to form units, form actions, and achieve learning goals, and is stored on tape or diskette along with the storage process [15]. Video is an audiovisual medium that shows movement (Sadiman 2008). The use of video in hands-on learning was made.

A video is a collection of sound-and-picture clips that are put together into a narrative and contain messages for achieving learning goals. These messages are saved on tape or disk media during the recording and storing processes (Arsyad 2004: 36 in Rusman et al. 2011: 218) A form of audiovisual media known as video shows motion (Sadiman 2008: 74). Video was used for practical learning. The outcomes of using video content can improve learning efficiency.

3.4 Virtual Laboratory

An interactive setting for designing and carrying out simulated experiments is called a virtual lab. In other words, it is a platform for experimentation. It consists of a domain-specific modeling program, an experimental unit called an object containing a data file, and a tool that works with that object. Virtual lab is an excellent opportunity for students to practice in a secure online setting. Students can engage with objects, devices, and interfaces through virtual scientific lab games and engineering simulation software before or in place of real-world experiences.

The educational benefits of using a virtual laboratory can be seen in several aspects. One of them is student grades. Virtual laboratories are more effective than traditional laboratory applications and can improve chemistry learning outcomes [16]. Virtual laboratories can organize student internships and improve student ideas for teaching materials [17]. With free simulation, this lab can motivate students in the learning process [18]. Can improve student grades. Based on literature research, it can be concluded that the use of mobile virtual laboratories may have a more favorable effect on student knowledge and regulatory metacognition in practice-related learning. Therefore, it is recommended that teachers and students use this model when studying in an internship.

3.5 Learning Management System

A software program called a learning management system (LMS) is used to implement and manage online training and learning programs. The learning management system LMS is an asynchronous example with features such as attendance, delivery of materials in PDF and PPT format, task assignment and collection, and management of ratings. Discussions and lectures can provide ratings for each of these discussions. Therefore, the combination of synchronous and asynchronous must support the learning process being communicated. There are many platforms available for the learning management system, including Schoology, Google Classroom, and Edmodo. With these, students can learn and learn something anytime, anywhere outside the classroom.

The use of LMS as a practical medium is carried out [19]. The online workshop utilizing the LMS of the learning management system may be applied well during the COVID-19 epidemic and can be a substitute for the practice during the COVID-19 period, it can be inferred from the outcomes of the LMS for practice.

4 Conclusion

The learning media available for remote internships can be run using a variety of video conference online applications (zoom), video, virtual laboratories, augmented reality, and learning management systems (LMS). Preparing for a remote internship and using appropriate internship media should support a smooth and effective internship learning process so that learners can achieve their learning goals.

References

1. O. B. Adedoyin and E. Soykan, "Covid-19 pandemic and online learning: the challenges and opportunities," *Interact. Learn. Environ.*, vol. 0, no. 0, pp. 1–13, 2020, https://doi.org/10.1080/10494820.2020.1813180.
2. M. Yunus, "The Challenges of Open and Distance Learning in Managing Practicums / Practical Courses during the Covid-19 Pandemic : Universitas Terbuka Case Study," no. Semester I, pp. 48–59, 2021.
3. K. A. A. Gamage, D. I. Wijesuriya, S. Y. Ekanayake, A. E. W. Rennie, C. G. Lambert, and N. Gunawardhana, "Online delivery of teaching and laboratory practices: Continuity of university programmes during COVID-19 pandemic," *Educ. Sci.*, vol. 10, no. 10, pp. 1–9, 2020, https://doi.org/10.3390/educsci10100291.
4. M. A. N. Sholeh and M. I. Helmi, "The COVID-19 vaccination: Realization on halal vaccines for benefits," *Samarah*, vol. 5, no. 1, pp. 174–190, 2021, https://doi.org/10.22373/sjhk.v5i1.9769.
5. S. Aisyah and M. A. Kurniawan, "View of Penggunaan Media Pembelajaran Daring pada Masa Pandemi COVID-19.pdf," 2021.
6. L. Fierro, N. Nesheiwat, H. Naik, P. Narayanan, P. K. Mistry, and M. Balwani, "Gaucher disease and SARS-CoV-2 infection: Experience from 181 patients in New York," *Mol. Genet. Metab.*, vol. 132, no. 1, pp. 44–48, 2021, https://doi.org/10.1016/j.ymgme.2020.12.288.
7. R. M. Wijayanti and P. Y. Fauziah, "Perspektif dan Peran Orangtua dalam Program PJJ Masa Pandemi Covid-19 di PAUD," *J. Obs. J. Pendidik. Anak Usia Dini*, vol. 5, no. 2, pp. 1304–1312, 2020, https://doi.org/10.31004/obsesi.v5i2.768.
8. I. N. B. M. Shaharanee, M. S. Abu Bakar, H. Nordin, N. M. B. H. Ibrahim, J. M. Jamil, and J. S. Ang, "Assessing lecturer's readiness for online learning implementation during COVID-19 outbreak," *Elem. Educ. Online*, vol. 19, no. 2, pp. 79–84, 2020, https://doi.org/10.17051/ilkonline.2020.02.109.
9. A. Abidah, H. N. Hidaayatullaah, R. M. Simamora, D. Fehabutar, and L. Mutakinati, "The Impact of Covid-19 to Indonesian Education and Its Relation to the Philosophy of 'Merdeka Belajar,'" *Stud. Philos. Sci. Educ.*, vol. 1, no. 1, pp. 38–49, 2020, https://doi.org/10.46627/sipose.v1i1.9.
10. S. Mohebi, M. Parham, G. Sharifirad, and Z. Gharlipour, "Social Support and Self - Care Behavior Study," no. January, pp. 1–6, 2018, https://doi.org/10.4103/jehp.jehp.
11. S. Erduran, "Science Education in the Era of a Pandemic: How Can History, Philosophy and Sociology of Science Contribute to Education for Understanding and Solving the Covid-19 Crisis?," *Sci. Educ.*, vol. 29, no. 2, pp. 233–235, 2020, https://doi.org/10.1007/s11191-020-00122-w.
12. B. Chen and J. Marcus, "Students' self-presentation on Facebook: An examination of personality and self-construal factors," *Comput. Human Behav.*, vol. 28, no. 6, pp. 2091–2099, 2012, https://doi.org/10.1016/j.chb.2012.06.013.

13. R. N. Laili and M. Nashir, "Higher education students' perception on online learning during covid-19 pandemic," *Edukatif J. Ilmu Pendidik.*, vol. 3, no. 3, pp. 689–697, 2021.
14. R. Widiasih *et al.*, "Nurses' Actions to Protect Their Families from COVID-19: A Descriptive Qualitative Study," *Glob. Qual. Nurs. Res.*, vol. 8, 2021, https://doi.org/10.1177/23333936211014851.
15. M. I. Arsyad and H. Sujaini, "Pengaruh animasi pada program instruksional pendidikan," *Semin. Nas. Apl. Teknol. …*, 2004.
16. F. Alkan and C. Koçak, "Chemistry Laboratory Applications Supported with Simulation," *Procedia - Soc. Behav. Sci.*, vol. 176, pp. 970–976, 2015, https://doi.org/10.1016/j.sbspro.2015.01.566.
17. A. Hidayat and V. Gayuh Utomo, "Virtual Laboratory Implementation To Support High School Learning," *Int. J. Comput. Appl.*, vol. 120, no. 16, pp. 14–18, 2015, https://doi.org/10.5120/21310-4283.
18. N. Popović and M. B. Naumović, "Virtual laboratory and learning management system in optimal control theory education," *Int. J. Electr. Eng. Educ.*, vol. 53, no. 4, pp. 357–370, 2016, https://doi.org/10.1177/0020720916639321.
19. A. R. Safira and A. S. Ifadah, "The Readiness Of Limited Face To Face Learning In The New Normal Era," *JCES (Journal Character Educ. Soc.)*, vol. 4, no. 3, pp. 643–651, 2021.