



E-Portfolio for Distance Learning in Elementary School

Suprayekti

Universitas Negeri Jakarta, Jakarta, Indonesia

Abstract

Received: : September 15, 2023

Revised: : October 30, 2023

Accepted: : December 27, 2023

Technology is being a part of education development. Every sector use a digital tool to assist their work. The purpose of this study was to determine the effectiveness of distance learning e-portfolios. This research uses mixed methods by combining qualitative and quantitative research methods to be used together in research activity to obtain more comprehensive, valid, reliable, and objective data. The data collected used by collecting and analyzing qualitative data built on quantitative preliminary results to analyze web-based e-portfolios on distance learning in elementary schools. The result of this study state that using e-portfolio assessment wisely to balance classroom assessment and facilitate content knowledge learning is an alternative for teachers. Using a web-based portfolio can minimize the space as a place to store tasks with more diverse formats. Storage can also be neater, making it easy to find and easier to assess by educators.

Keywords: e-portfolio; distance learning; elementary school

(*) Corresponding Author: suprayekti@unj.ac.id

How to Cite: Suprayekti. (2023). E-Portfolio for Distance Learning in Elementary School. *JTP - Jurnal Teknologi Pendidikan*, 25(3), 443-454. <https://doi.org/10.21009/jtp.v25i3.38870>

INTRODUCTION

Elementary school distance learning is becoming more and more necessary, especially in light of the current pandemic and global challenges that necessitate online learning. While a lot of work has gone into making distance learning as efficient as possible, there are still difficulties in effectively assessing and recording student growth and accomplishments.

A viable workaround for these drawbacks is the use of e-portfolios. With e-portfolios, students can gather and present their work as well as engage with teachers, other students, and parents and provide and receive feedback. The implementation of E-Portfolios is expected to enhance the engagement, quantifiability, and relevance of remote learning to the specific requirements of each student.

According to earlier studies, using e-portfolios in the classroom can increase students' comprehension of the subject matter, encourage more active participation, and give a more complete picture of their academic and non-academic growth. Nonetheless, there is still a dearth of research on the use of E-Portfolios for distance learning in elementary schools.

Technological developments in education, making electronic portfolios (e-portfolio) gain popularity as a tool of assessment and learning (Lam & Lee, 2009). Nonetheless, most studies on e-portfolios focus on implementation in the context



of higher education, while studies referring to such adoption are still relatively few in primary education (Akbari & Seyed Erfani, 2018). On the other hand, using paper-based portfolios in the classroom is considered an optional alternative way to monitor student progress and is therefore rarely and unsystematically used by teachers (Hooker, 2019). Most teachers lack professional training and experience in using portfolios either in the classroom or for their professional documentation (Hung, 2012). An e-portfolio is a valuable tool in learning and assessment procedures (Alajmi, 2019). Therefore, an e-portfolio as a digital form facilitates documentation of owner learning and understanding and better represents the owner's personality and achievements (Oner & Adadan, 2011). However, e-portfolios are more than just a collection of personal works and artifacts; they encourage reflection, feedback, and an in-depth exchange of ideas (Balaban, 2020). According to Barrot (2020), e-portfolios are more flexible and facilitate owners' control of inputs over time. Meanwhile, it can include learning documentation in various forms, such as videos, recordings, images, and links to websites. That can offer a better view of the owner's progress, proof of learning, and proof of skill.

The elementary school in many countries is facing unprecedented challenges due to the Covid-19 pandemic (Bubb & Jones, 2020). School cover in a short period causes severe disruption, and principals must mobilize staff to teach remotely with little preparation or training time. This impacts the traditional portfolio change to an e-portfolio (Thornton et al., 2011). The portfolio is a collection of learners' work as evidence of the progress of learners or groups of learners, evidence of achievement, skills, and attitudes of learners (Cepik & Yastibas, 2013). The portfolio displays the best learners' work or the most meaningful work of learners due to their activities to illustrate the progress of learners' learning (Chang et al., 2018). According to Beckers et al. (2019), a portfolio is a way that the learner grows confidence that he can do the task. The growth of confidence in the learner is expected to motivate him to seek his own knowledge and understanding and create and open new ideas that they do in the activities of their learners.

Unfortunately, conventional portfolios (using paper) experience some obstacles in implementing the distance learning process (Gámiz-Sánchez et al., 2019). In addition, conventional portfolios of data accuracy levels cannot be updated according to the development of information because if it is in paper format, the data becomes more static (Händel et al., 2020). Distance learning requires teachers to use e-portfolios more often. So teachers inevitably have to use technology to store e-portfolios (Greviana et al., 2020). As for the principle of the practicality of documents by utilizing conventional portfolios will also experience obstacles because the demands of the portfolio will produce a large stack of paper; this is certainly not practical (van Wyk, 2017). Portfolios gradually become widely accepted methods that focus on processes rather than products, often assessing written capabilities over time (Lukitasari et al., 2018). This resulted from a shift in product approach to process in teaching writing, which led to a shift from indirect procedures to direct procedures in evaluating writing skills. Portfolio writing is seen to improve performance through evaluative feedback and reflections (Sidhu, 2015).

In addition, e-portfolio has also been widely used in several countries. Previous empirical studies of peer feedback have shown that it can be beneficial for improving student writing performance, both in traditional classrooms (Sharifi et al., 2017). However, studies are concentrated on secondary and higher education, so that the e-portfolio for is still relatively rare (van der Schaaf et al., 2017). Nevertheless, because facing Covid-19 distance education provides a challenge to elementary education teachers to explore the e-portfolio. In addition, according to Sanchez, Santiuste, and Pareja (2019) e-portfolio can support the feedback skills of fellow students in the learning process in elementary school.

The use of portfolio assessments has been shown to encourage learning and self-setting in English writing classrooms (Shea & Parayitam, 2019). Building a portfolio can be an 'empowering activity' that puts learners accountable for their learning, including setting individual goals, choosing jobs that demonstrate their learning, and reflecting on their progress and outcomes (Sidebotham et al., 2018). Traditional paper-based writing portfolios involve students compiling and organizing text sets over time that display 'effort, progress, and achievement' (Akbari & Seyed Erfani, 2018). Portfolios can include written goals, examples of work, and reflections. It is shared with teachers, peers, and family members as evidence of learning (Theodosiadou & Konstantinidis, 2015). With the development of e-learning technology, there are now many digital learning platforms that teachers and students can use to leverage and expand the benefits of portfolio assessment and develop twenty-first-century students' skills (Kilinc et al., 2016). Digital learning platforms give students the space to create and collect multimodal text, such as annotated videos and photos and provide real-time interaction with peers (Papadakis & Kalogiannakis, 2017). Popular platforms include Moodle, Google Classroom, and Edmodo (Swart, 2015). It differs from social media platforms, such as Facebook and Twitter, in that it is explicitly designed for educational purposes. They provide enclosed spaces supervised by teachers with no ads or switchers and have no age restrictions on their use.

Seesaw is a digital platform specifically designed for learners aged four to 18 (Riadil, 2020). Seesaw differs from other digital platforms in that it is free, has an easy-to-use interface, and does not require a username or password (Moorhouse, 2019). The platform also allows students to share their portfolios and work with family members and the wider community. This feature is ideally used for kindergarten, elementary, and middle school students. In addition, Nur and Riadil (2019) showed that using Seesaw in the learning process allows students to communicate with their instructors in *real-time*. The application of Seesaw media can also help students include tropes to improve scientific knowledge as a framework for learning regulations. Nevertheless, no research has led to the application of e-portfolio using Seesaw in Elementary Schools. Therefore, researchers choose to focus on applying an e-portfolio for distance learning in elementary school.

Thus, the purpose of this study is to look into the possibilities and effects of using E-Portfolios in elementary school distance learning environments. It is hoped that by gaining a deeper understanding of E-Portfolios' efficacy, it will be possible to address evaluation issues in the context of online learning and enhance the quality of distance learning at the elementary school level.

METHODS

The general purpose of this research is to apply an e-portfolio for distance learning in primary school. This research uses mixed methods by combining qualitative and quantitative research methods to be used together in research activity to obtain more comprehensive, valid, reliable, and objective data (Bowen et al., 2017). At the same time, the design used in this study is sequential *explanatory* (Chiu, 2021). In this study, researchers collected and analyzed quantitative data followed by collecting and analyzing qualitative data built on quantitative preliminary results to analyze web-based e-portfolios on distance learning in elementary schools.

The subjects of this study are teachers and students in elementary school. Teachers are chosen as research subjects because they can provide information regarding the assessment process conducted by them in public and private elementary schools. The population in this study was a fifth-grade elementary school teacher located in West Java with 120 students. Therefore, the sample in this study was 60 teachers from public and private elementary schools. This sample is selected using a random sample. As for looking at the student's responses, the study subjects were fifth-grade elementary school students.

Data Collection Techniques

Researchers use interviews directed to teachers to ask what assessments are made in the student's learning process and outcomes. This in-depth interview is conducted when the teacher has completed the learning process (Bowen et al., 2017). Because pandemic covid-19 interviews are conducted face-to-face directly by following the Health protocol, this interview is conducted 55 minutes following the interview guidelines. Researchers carried out the dissemination of questionnaires to teachers to assess the feasibility of e-portfolios used as a medium for collecting assignments for students. After that, observations are made by researchers who make direct observations. Researchers as observation participants see firsthand what assessments are made by teachers and how applying e-portfolio to learning in elementary school (Vattøy & Gamlem, 2019). Researchers followed the learning process through zoom with three meetings. Data collection is done from various sources.

Data Collection Test

In addition, to test the validity of the data, researchers used triangulation. Triangulation is done for checking purposes as well as a comparison to the data (Yin, 2011). Researchers tried to review the data by reviewing several sources and checking the study results with five media experts through due diligence. In addition, researchers test the credibility of data by checking data obtained from various sources.

Data Analysis

In qualitative analysis, we build words from interview results and data observations needed to be described and summarized. Researchers make statements to look at the relationships between the various themes identified,

behavioral relationships, and individual characteristics such as age and gender. While quantitative analysis is used to find out the results of the application of e-portfolio takes place (Dixon et al., 2005). In this study, the data analysis is intended to combine the collected data with being further sorted and grouped on specific codes and themes. Thus, researchers systematically search and compile data obtained from interview results, field records, and documents. As for quantitative data, it analyzes the assessment process by calculating the percentage of the value obtained with the results of the data interpreted using the rating *scale*. The formula used in processing the data obtained from the questionnaire is as follows:

$$P = \frac{f}{N} \times 100\%$$

Information:

P = Percentage number

f = Frequency of answers

N = Number of respondents

In this study, the data analysis technique used by researchers to assess the quality of products used contained categories that can be seen in the following table:

Information	Shoes
Excellent	4
Good	3
Pretty Good	2
Less Good	1

Researchers determined the feasibility of developing a self-help book to improve mental health literacy by adjusting the results of the calculations into five assessment percentage scale criteria:

Table 2. Percentage Range and Validation Results Quality Criteria

No	Present (%)	Validation Criteria
1	81-100	Highly Feasible
2	61-80	Feasible
3	41-60	Moderately Feasible
4	21-40	Less Feasible
5	≤ 20	Unfeasible

RESULTS & DISCUSSION

Implementing proper policy in education sector will lead into good society. As teacher and education practioner report that using digital tools to assist the execute teaching and learning was perfectly proper to enhance the students understanding. This research has been answer the question that e-portofolio is essential for the distance learning.

E-Portfolio Planning for Distance Learning in Elementary School

An e-portfolio becomes essential in education, especially in elementary schools. E-

portfolio is no longer a new term in the field of education research. The e-portfolio reflects the importance of technology, access to technology in life, and anticipatory accommodation of improving the electronic job market (Akbari & Seyed Erfani, 2018). This research is to analyze the results of implementing web-based e-portfolios at <https://web.seesaw.me/addresses>. Teachers are guided to download, install, then operate the seesaw app. Simulations are also done so that teachers understand and understand how to apply it in the classroom. The four teachers are Nana, Ike, Yuda, and Farhan (the same name is to maintain the research code of ethics). Teachers are also involved in group discussions to create learning implementation plans using the "seesaw" learning media. The goal is that target can operate the application "seesaw" and create learning design using online learning media "seesaw" correctly. Thus, teachers are directed to plan learning and assessment using a seesaw. The training is conducted two times, the first meeting in the classroom and the second direct use of the application. After that the teachers are accompanied to create their respective accounts, then the other participants use student accounts to enter the classroom of one of the teachers. Simulation of learning through this application is done to feel familiar and overcome problems or obstacles that may occur in their use. After that, we conducted the first interview related to e-portfolio planning.

As an elementary school teacher, I was greatly helped by this seesaw app. Moreover, the use of this e-portfolio provides ease in seeing student progress. (Nana, 2021). Through the use of a web-based portfolio allows students to generate their personal portfolio of learning quickly and easily through the systems provided. I think students can collect the results of their work that is always evolving. This collection of student work shows learners' effort, ability, and progress, and this is called the student portfolio. (Yuda, 2021)

The results of this interview show that teachers are enthusiastic about using e-portfolios. Thus, a web-based portfolio makes teachers feel that learners can devote their learning experience, and this is an effective form of assessment to encourage learners to make progress in learning (Venville et al., 2017).

However, the web-based portfolio is not arbitrary in loading a collection of documents (such as a multimedia presentation or digital memo) but rather a reflective tool that can show the growth of learners from period to period. So, I think there should be an e-portfolio development that provides this (Farhan, 2021)

It is seen that teachers are comfortable using e-portfolios during the covid-19 pandemic. It's just that there may be a part of the e-portfolio that used to be developed. Portfolio assessment considers that assessment is a complete part of the learning process so that learning can be carried out by providing tasks that demand that learning activities be meaningful and apply what is learned in a real context (Theodosiadou & Konstantinidis, 2015). In addition, portfolio assessment can also help students see self-reflection to evaluate themselves and determine their next learning goals. Thus, the portfolio assessment can assess learners' learning thoroughly in terms of cognitive, affective, and psychomotor aspects.

Application of E-Portfolio for Distance Learning in Elementary Schools

E-portfolio feasibility is tested by several experts who are appointed and assessed as having competence in their field. Validation results in the form of suggestions and inputs are used as a reference to create an e-portfolio that will be developed and applied in elementary school during distance learning. E-portfolio validation on this research includes validation of design and products. Experts validate with the following results:

Table 3. Media Expert Feasibility Test Results

No	Aspect	Percentage	Category
1	E-portfolio design	79%	Feasible
2	Accuracy of information	82%	Highly Feasible
3	Use of Language	61%	Feasible
4	Ease of accessing e-portfolio	84%	Highly Feasible
Average		76.5	Feasible

Based on the assessment results using questionnaires by experts, a percentage value of media design feasibility is 79%, then entered on the criteria feasible. So that design development is needed to be made with improvements, namely on the type and size aspects of letters, and the arrangement of web product links seewas on the main web seewas e-portfolio developed. Researchers make improvements following the advice and inputs of validators, and after several discussions and reflections, finally, experts provide good and valid recommendations on e-portfolio products that have been developed. This can be indicated by the percentage of language usage, which is 61% or feasible. Web seesaw currently still uses English. So it takes Indonesian, which can make it easier for students to use it. This is also based on the teacher's assessment of the feasibility test of the e-portfolio.

Table 4. Master's Due diligence on E-Portfolio Application

No	Aspect	Percentage	Category
1	E-portfolio design	82%	Highly Feasible
2	Accuracy of information	79%	Feasible
3	Use of Language	63%	Feasible
4	Ease of accessing e-portfolio	80%	Feasible
Average		76%	Feasible

Table 4 shows that the application of e-portfolio for teachers for design aspects reaches 82% with very decent categories. However, in terms of language usage percentage of 63% with feasible category. Therefore, based on the data, researchers conducted interviews with elementary school teachers. According to those data between the masterr's due diligence and the expert have similar percentage. It can be informed that those data have linier result relationship correlation.

This e-portfolio is interesting to use. It come along with previous hypothesis that e-portfolio could help teacher deliver their material. However, the language used still uses English. So, the students need more effort to understand what being taught is. (Yuda, 2021).

The researcher continues to find using an e-portfolio challenging due to the cryptic nature of the content. As a result, the researcher requested assistance from a friend to operate it. Elementary school pupils still need parental supervision when studying, so the information's accuracy, language use, and e-portfolio accessibility are important. (Ike, 2021).

Therefore, the application of e-portfolio is not only done through the seesaw website. It takes the development of an e-portfolio using Indonesian and is easy for students to understand.

Discussion

In this section the results showed that using e-portfolios seemed to result in better exam performance when compared to traditional portfolio groups. Barrot (2020) showed that students using Facebook-based e-portfolios had outperformed those from conventional portfolio groups. These results are associated with interactive features, flexibility, accessibility, and its ability to expose students to social pressures and increase their audience awareness. A web-based portfolio can be a complement to the assessment that has been running so far. Several benefits can be obtained from this web-based portfolio program, especially for learners; among these benefits are feedback facilities. However, for elementary school students the use of e-portfolio using social media such as Facebook is not very appropriate. So, applications such as seesaw are needed by teachers and students. Through their research, Handel, Wimmer, and Ziegler (2020) showed that the use of e-portfolios compared to conventional portfolio groups seemed to result in higher exam performance. Although data some e-portfolio elements are not often used by students. This is in line with the researchers' findings that indeed e-portfolio helps improve the interaction between teachers and students.

A digital or electronic portfolio created and maintained online to support and record the learning experiences of students participating in remote or distance education is referred to as an e-portfolio for distance learning. A range of artifacts, including documents, multimedia files, and reflections, are usually included in this digital collection to highlight the person's accomplishments, development, and abilities. In the context of remote learning, e-portfolios give students an easy way to arrange, showcase, and distribute their work to instructors, fellow students, and possibly even parents or employers. This format is especially useful in distance learning settings where traditional in-person interactions may be hampered by physical distance and where digital tools are necessary for efficient communication and evaluation.

E-portfolio for distance learning matter for various reasons, contributing to take success and effectiveness of mobile education. There are some key aspect to pointed the significance of eportfolio such as documenting of learning, reflection and assessment, showcasing achievements, communication and collaboration, assessment and evaluation, flexibility and accessibility and technology integration. To sum up, e-portfolios are important for distance learning because they offer a dynamic, reflective, and easily accessible way for students in remote learning environments to record, evaluate, and showcase their accomplishments.

E-portfolio assessment produces a positive washback effect on learning, including building a community of practices, facilitating peer learning, enhancing content knowledge learning, promoting professional development, and fostering critical thinking. However, e-portfolio assessment also carries some negative washback effects, such as studying anxiety coming from a larger audience and resistance to technology. Yastibas (2013) research results show that e-portfolio can also improve students' technology skills.

Nevertheless, there are still some obstacles to be fixed. In addition, a motivational boost during requirements may be beneficial for students, because especially here, they are not very involved in the e-portfolio. On the other hand, in their research, Theodosiadou and Konstantinidis (2015) illustrate that the electronic portfolio serves as a medium for better communication and effective collaboration between teachers, students, and parents. Although the study has not prompted a direct response by students and parents, media experts show that e-portfolio through the website is worth using according

to the results of the feasibility tests.

When the covid-19 pandemic provides a change in the conventional learning process to online, students can learn wherever internet signals are available. However, the learning process must also be balanced with the assessment used by the teacher. The purpose of flexibility in this space is that learners can access learning anywhere. Likewise, as long as there is an internet network in the area. Therefore, this study shows that although e-portfolios are viable for elementary school students, they still need improvement in their development (Alajmi, 2019). As previously explained, the web portfolio combines computer devices or gadgets with network technology in its application. If learners do not have gadgets or a region with minimal internet access, this web portfolio cannot be used optimally in the learning assessment process. Then to assess the portfolio takes much time for educators while the material that must be delivered is very much. For that, it takes extra work so that the research can be done optimally and adequately. In creating a web-based portfolio, communication between educators and learners is needed. If educators are less responsive or learners are less active in submitting to educators, this can be an obstacle that results in less than optimal assessment. Moreover, in this time of online learning between educators and learners, it is impossible to meet in person; this can lead to miscommunication.

CONCLUSION

When the covid-19 affect in the education sector it change whole part. The educator must shifting into digital tool such as e-portofolio. Based on the result, it can be concluded that using e-portfolio assessments wisely to balance classroom assessments and facilitate content knowledge learning is an alternative for teachers. Using a web-based portfolio can minimize space as a place to store tasks with a more diverse format. Storage can also be neater, so it is easy to find and facilitate assessment by educators. This is because of the web-based portfolio. The next advantage is timeless. A created portfolio can be stored over a relatively long time and helps learners collect their growing works without time constraints, unlike the usual portfolio where files, the products of participants' work are more vulnerable to being lost because they are stored in a less secure place. Third, be flexible. Portfolio work can be monitored by educators, both teachers, and parents, anywhere and anytime. In addition, educators can comment directly on the web portfolio owned by learners. To collect the web portfolio, learners send an email to educators. They don't have to collect portfolios face-to-face.

Similarly, teachers can provide feedback directly on the portfolio page through the available comment box. It is very effective and efficient, especially in pandemic times like today. It's just that this research has limitations in development. Thus, research in the future is needed to develop an e-portfolio that can facilitate the readability of elementary school students. In addition, due diligence can be conducted on a large scale, namely to students and parents. Thus, for the further research it will be better if the researcher could expand the advantages of implementing e-portfolio in many education sector to see its efficiency.

REFERENCES

Akbari, F. Z., & Seyed Erfani, S. (2018). The Effect of Wiki and E-portfolio on Writing Skill of Iranian Intermediate EFL Learners. *International Journal of*

- Applied Linguistics and English Literature*, 7(3), 170.
<https://doi.org/10.7575/aiac.ijalel.v.7n.3p.170>
- Alajmi, M. M. (2019). The impact of E-portfolio use on the development of professional standards and life skills of students: A case study. *Entrepreneurship and Sustainability Issues*, 6(4), 1714–1735.
[https://doi.org/10.9770/jesi.2019.6.4\(12\)](https://doi.org/10.9770/jesi.2019.6.4(12))
- Balaban, I. (2020). An empirical evaluation of E-Portfolio critical success factors. *International Journal of Emerging Technologies in Learning*, 15(4), 37–52.
<https://doi.org/10.3991/ijet.v15i04.11757>
- Barrot, J. S. (2020). Effects of Facebook-based e-portfolio on ESL learners' writing performance. *Language, Culture and Curriculum*, 34(1), 95–111.
<https://doi.org/10.1080/07908318.2020.1745822>
- Beckers, J., Dolmans, D. H. J. M., Knapen, M. M. H., & van Merriënboer, J. J. G. (2019). Walking the tightrope with an e-portfolio: imbalance between support and autonomy hampers self-directed learning. *Journal of Vocational Education and Training*, 71(2), 260–288.
<https://doi.org/10.1080/13636820.2018.1481448>
- Bowen, P., Rose, R., & Pilkington, A. (2017). Mixed methods- theory and practice. sequential, explanatory approach. *International Journal of Quantitative and Qualitative Research Methods*, 5(2).
- Bubb, S., & Jones, M. A. (2020). Learning from the COVID-19 home-schooling experience: Listening to pupils, parents/carers and teachers. *Improving Schools*, 23(3), 209–222. <https://doi.org/10.1177/1365480220958797>
- Cepik, S., & Yastibas, A. E. (2013). The use of e-portfolio to improve English speaking skill of Turkish EFL learners. *Anthropologist*, 16(1–2), 307–317.
<https://doi.org/10.1080/09720073.2013.11891358>
- Chang, C. C., Liang, C., Chou, P. N., & Liao, Y. M. (2018). Using e-portfolio for learning goal setting to facilitate self-regulated learning of high school students. *Behaviour and Information Technology*, 37(12), 1237–1251.
<https://doi.org/10.1080/0144929X.2018.1496275>
- Chiu, T. K. F. (2021). Digital support for student engagement in blended learning based on self-determination theory. *Computers in Human Behavior*, 124.
<https://doi.org/10.1016/j.chb.2021.106909>
- Dixon, W. M., Agarwal, S., Jones, D., Young, B., & Sutton, A. (2005). synthesising qualitative and quantitative evidence: A review of possible methods. *Journal of Health Services Research & Policy*, 10(1), 45–55.
- Gámiz-Sánchez, V., Gutiérrez-Santiuste, E., & Hinojosa-Pareja, E. (2019). Influence of Professors on Student Satisfaction With e-Portfolio Use. *Journal of Educational Computing Research*, 57(3), 646–669.
<https://doi.org/10.1177/0735633118757016>
- Greviana, N., Mustika, R., & Soemantri, D. (2020). Development of e-portfolio in undergraduate clinical dentistry: How trainees select and reflect on evidence. *European Journal of Dental Education*, 24(2), 320–327.
<https://doi.org/10.1111/eje.12502>
- Händel, M., Wimmer, B., & Ziegler, A. (2020). E-portfolio use and its effects on exam performance – a field study. *Studies in Higher Education*, 45(2), 258–270. <https://doi.org/10.1080/03075079.2018.1510388>
- Hooker, T. (2019). Using ePortfolios in early childhood education: Recalling, reconnecting, restarting and learning. *Journal of Early Childhood Research*, 17(4), 376–391. <https://doi.org/10.1177/1476718X19875778>
- Hung, S. T. A. (2012). A washback study on e-portfolio assessment in an English as a Foreign Language teacher preparation program. *Computer Assisted Language Learning*, 25(1), 21–36.
<https://doi.org/10.1080/09588221.2010.551756>

- Kilinc, E., Kilinc, S., Kaya, M. M., Baser, E. H., Turkuresin, H. E., & Kesten, A. (2016). Teachers' attitudes toward the use of technology in social studies teaching. *Research in Social Sciences and Technology*, 1(1), 59–76. <http://dx.doi.org/10.1016/j.cirp.2016.06.001><http://dx.doi.org/10.1016/j.powtec.2016.12.055><https://doi.org/10.1016/j.ijfatigue.2019.02.006><https://doi.org/10.1016/j.matlet.2019.04.024><https://doi.org/10.1016/j.matlet.2019.127252><http://dx.doi.org/10.1016/j.ijfatigue.2019.02.006>
- Lam, R., & Lee, I. (2009). Balancing the dual functions of portfolio assessment. *ELT Journal*, 64(1), 54–64. <https://doi.org/10.1093/elt/ccp024>
- Lukitasari, M., Handhika, J., & Murtafiah, W. (2018). Higher order thinking skills : using e-portfolio in project-based learning. *IOP Conf. Series: Journal of Physics*.
- Moorhouse, B. L. (2019). Seesaw: <https://web.seesaw.me>. *RELC Journal*, 50(3), 493–496. <https://doi.org/10.1177/0033688218781976>
- Nur, M. R. O., & Riadil, I. G. (2019). Digital Natives' Preference in 4.0 Speaking Learning Class. *DIGITAL NATIVES*, 3, 7.
- Oner, D., & Adadan, E. (2011). Use of web-based portfolios as tools for reflection in preservice teacher education. *Journal of Teacher Education*, 62(5), 477–492. <https://doi.org/10.1177/0022487111416123>
- Papadakis, S., & Kalogiannakis, M. (2017). Mobile educational applications for children. What educators and parents need to know. *International Journal of Mobile Learning and Organisation*, 11(2), 1. <https://doi.org/10.1504/ijmlo.2017.10003925>
- Riadil, I. G. (2020). Teaching English: An afresh sophisticated technique to cultivate digital native learners' vocabulary by utilizing seesaw media as digital literacy. *Journal of Research on English and Language Learning (J-REaLL)*, 1(2), 62. <https://doi.org/10.33474/j-reall.v1i2.6855>
- Sharifi, M., Soleimani, H., & Jafarigohar, M. (2017). E-portfolio evaluation and vocabulary learning: Moving from pedagogy to andragogy. *British Journal of Educational Technology*, 48(6), 1441–1450. <https://doi.org/10.1111/bjet.12479>
- Shea, T., & Parayitam, S. (2019). Antecedents of graduate student satisfaction through e-portfolio: content analysis. *Education and Training*, 61(9), 1045–1063. <https://doi.org/10.1108/ET-04-2019-0064>
- Sidebotham, M., Baird, K., Walters, C., & Gamble, J. (2018). Preparing student midwives for professional practice: Evaluation of a student e-portfolio assessment item. *Nurse Education in Practice*, 32(April), 84–89. <https://doi.org/10.1016/j.nepr.2018.07.008>
- Sidhu, N. S. (2015). The teaching portfolio as a professional development tool for anaesthetists. *Anaesthesia and Intensive Care*, 43(3), 328–334. <https://doi.org/10.1177/0310057x1504300308>
- Swart, A. J. (2015). Student usage of a learning management system at an open distance learning institute: A case study in electrical engineering. *International Journal of Electrical Engineering Education*, 52(2), 142–154. <https://doi.org/10.1177/0020720915575925>
- Theodosiadou, D., & Konstantinidis, A. (2015). Introducing e-portfolio use to primary school pupils: Response, benefits and challenges. *Journal of Information Technology Education: Innovations in Practice*, 14(1), 17–38. <https://doi.org/10.28945/2158>
- Thornton, L., Ferris, N., Johnson, G., Kidwai, K., & Ching, Y. H. (2011). The Impact of an E-Portfolio Program in a Music Education Curriculum. *Journal of Music Teacher Education*, 21(1), 65–77. <https://doi.org/10.1177/1057083710397592>

- van der Schaaf, M., Donkers, J., Slof, B., Moonen-van Loon, J., van Tartwijk, J., Driessen, E., Badii, A., Serban, O., & Ten Cate, O. (2017). Improving workplace-based assessment and feedback by an E-portfolio enhanced with learning analytics. *Educational Technology Research and Development*, 65(2), 359–380. <https://doi.org/10.1007/s11423-016-9496-8>
- van Wyk, M. M. (2017). An e-portfolio as empowering tool to enhance students' self-directed learning in a teacher education course: A case of a South African university. *South African Journal of Higher Education*, 31(3). <https://doi.org/10.20853/31-3-834>
- Vattøy, K. D., & Gamlem, S. M. (2019). Systematic observation with two analytic video-score approaches and loss of instructional time in lessons. *Cogent Education*, 6(1). <https://doi.org/10.1080/2331186X.2019.1664841>
- Venville, A., Cleak, H., & Bould, E. (2017). Exploring the Potential of a Collaborative Web-based E-portfolio in Social Work Field Education. *Australian Social Work*, 70(2), 185–196. <https://doi.org/10.1080/0312407X.2017.1278735>
- Yin, R. K. (2011). *Qualitative Research From Start to Finish*. The Guilford Press.