

PORTFOLIO ASSESSMENT TRENDS ON FUTURE LEARNING

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ABSTRACT

This text discusses in-depth study and tests the assessment of the adaptive portfolio. Assessments will consistently diagnose problems and how educators perform solutions from less than optimal learning. The matching method is done by matching and comparing the characteristics of several similar studies with criteria so that one particular conclusion is obtained. Furthermore, a systematic review is used, a Narrative systematic review, to review relevant studies. This text is about anticipating a new version of the assessment program into the current learning reform efforts. Portfolio development is more challenging than they expected. Portfolios can gather the information that can be used to evaluate student achievement in the classroom

Keywords: Teacher Professional Development. Portfolio Assessment, Learning Outcomes, Learning Improvement

I INTRODUCTION

The importance of teacher practice is one of the critical factors in student learning. Teachers are required to think creatively and innovatively in providing online learning so that children are not saturated in receiving the learning, how the level of understanding of children's understanding of the material that has been given online, through an interactive dialogue between teachers and children, raises the level of child's acceptance of good material. In comparison, the role of government is significant in providing quality education to the nation's children because education is the key to the development of the human resources of a country. In the hands of children in the future we can become advanced (*Pendidikan Di Masa Pandemi*, n.d.).

The Covid-19 pandemic has provided an overview of the future survival of education through the help of technology. However, technology cannot replace teachers, lecturers, and learning interactions between students and teachers because education involves acquiring knowledge and values, cooperation, and competence. This pandemic situation is a challenge for the creativity of each individual in using technology to develop the world of education (*Tantangan Dunia Pendidikan Di Masa Pandemi – Direktorat Jenderal Pendidikan Tinggi Kementerian Pendidikan Dan Kebudayaan Republik Indonesia*, n.d.)

In terms of benefits, distance learning (PJJ) has set the education process in the country towards digitalization. Nevertheless, on the other hand, it also creates obstacles. For areas that experience internet access constraints and the absence of gadgets due to the low economic level of the PJJ community is quite difficult to do. In addition, the teaching and learning process that requires direct practice also experienced obstacles (*Tantangan Pendidikan Di Masa Pandemi, Semua Orang Harus Jadi Guru | Kementerian Koordinator Bidang Pembangunan Manusia Dan Kebudayaan*, n.d.).

Assessment of learning is a response to maintaining the spirit and psychology of children during learning during a pandemic. With assessment, teachers can classify whether a learner belongs to a group of intelligent, sufficient, or lacking in his class. With assessment, teachers can determine the success of achieving goals, the mastery of learners to the lesson, and the accuracy or effectiveness of teaching methods. Students were asked to identify the atmosphere that indicates the morning, then cut and paste the atmosphere in the morning, afternoon, and evening. After that students compile it into a portfolio (*Penilaian Hasil Belajar Peserta Didik Sekolah Dasar Sebagai Umpan Balik Pembelajaran - Direktorat Sekolah Dasar*, n.d.).

Kemendikbud (2013: 237) explained that portfolio assessment assesses a collection of artefacts that show progress and be appreciated as a result of real-world work. Portfolio assessment can depart from learners' work and be evaluated based on several dimensions. A portfolio assessment is an ongoing assessment based on information that shows the development of students' abilities. So from the description of the opinion above, the portfolio assessment is the student's work of the learning process that is considered the best, test results (not grades), or other information relevant to the attitudes, skills, and knowledge demanded by a particular topic or subject.

Yamin (2012: 250) mentions that portfolio assessment should pay attention to the following: (1) The work collected is the work of the students concerned. (2) Determine which examples of work should be done. (3) Collect and listen to the work of learners. (4) Determine the criteria for portfolio valuation. (5) Ask learners to assess the results of their portfolios continuously. (6) Plan a meeting with learners to be assessed. (7) Involve parents in assessing the work of learners.

2 RESEARCH METHODS

The method used to assess research results using an evaluation approach is the matching method and documentation method through several relevant sources. The matching method is done by matching and comparing the characteristics of the same discussion with the criteria so that one particular conclusion is obtained. Furthermore, a systematic review is used as a systematic narrative review by selecting what researchers have written on a subject or topic. The aim is to obtain a summary of the existing scientific literature and produce a comprehensive report on the current position of science relating to a particular topic.

3 DISCUSSION AND RESULTS OF THE STUDY

Portfolios can gather the information that can be used to evaluate student achievement in the classroom. Portfolios have a long history, but their widespread use in class evaluations is relatively recent. The term portfolio is widely used in various fields, such as finance/banking, politics and government, management and distribution, art, and education. A portfolio is defined as a set of

personal information that records and documents a person's achievements in his education.

There is evidence that tracking students over time provide the best information on improving student learning. Evidence shows that following students around the clock provides the most helpful information for improving their learning. Portfolios provide a rich means of providing formative and summative information about the teaching and learning process, which is the goal of the process (Olds & Pavelich, n.d.).

Portfolios are described as empowering experiences because they encourage self-awareness, self-motivation, self-esteem, and future development. Educator testimony is supported by student assignment data (Spicuzza, 1996). Portfolios provide an objective way to understand past and present experiences. Portfolios can facilitate authentic learning. Portfolio valuation offers a time-to-time portrait of a person's development as a learner. In the context of education, to know students' performance, a portfolio is physical evidence (document) that describes the experience of work/achievement achieved during the task of the profession as a teacher in a specific time interval. This document relates to elements of experience, work, and achievement. Portfolios not only for documenting their work can also be a powerful resource for early childhood educators' professional preparation and development, from evaluating one's classroom practices to demonstrating skills and achievements.

The portfolio confirms a professional identity and a strong foundation for future growth. This allows students to identify their skills deficiencies and gaps in knowledge. Students recognize that they must develop their assessment and evaluation skills (Spicuzza, 1996). A portfolio is a process by which previous learning experiences can be translated into educational goals, documented, and assessed for academic credit. The process of developing a portfolio is a learning experience in itself. It can be valuable to the learner as a finished product portfolio. It is also a way for participants to become more systematic and organized about learning recordings.

Portfolio evaluation is an evaluation method for evaluating a student's effort process. It is an evaluation method for students to know their achievements and limitations. Portfolio evaluation is a method of evaluating how students know their

achievements. In other words, students can view themselves positively by filing promptly in portfolio evaluation.

The main objective of the work portfolio is to serve as a "holding tank" for student work. Another goal of the display portfolio is to demonstrate students' highest level of achievement. Collecting items for this portfolio is a student's way of saying, "Here I am. Here is what I can do." Pieces related to a particular topic are collected here until they move into an appraisal portfolio or display portfolio. In addition, a portfolio of work can be used to diagnose students' needs. Here, both students and teachers have evidence of students' strengths and weaknesses in achieving learning goals, which helps design future teaching.

This portfolio is beneficial for parents who do not accept their child's current skills limitations or do not have a realistic picture of their child's development compared to other children. In addition, a portfolio can serve to document the progress students have made, progress that parents may not be aware of.

Steps in Portfolio Development. The portfolio development process usually involves the following steps: (1) Reflecting on important events and activities that have been influential (e.g., work experience, personal experience, training, extraordinary achievements, hobbies, recreational activities, etc.). (2) Summarizes this achievement in a technically written autobiography. (3) Identify career and educational goals. (4) Prepare a written statement on the purpose of education. (5) Identify significant learning experiences. (6) Extracts and clusters of learning outcomes from this experience. (7) Prepare a written competency statement. (8) Research the institutional calendar and the outline of the academic calendar for the program with comparable results and competencies. (8) Match personal learning with a specific course or program. (9) Write a description of learning that summarizes competencies, explains how they were acquired during this time, and introduces material that will verify learning. (10) Prepare the data organized to present supporting documentation. (11) Compile all items into a complete portfolio. (12) Presenting the student portfolio to the institution's leadership.

Portfolio assessment essentially assesses students' works at one period for a subject.

Teachers and learners collect and assess the end of a work period. Based on the development information, teachers and learners themselves can assess learners' abilities and continue to make improvements. Thus, the portfolio can show the development of the learning progress of learners through his work, among others: essays, poems, letters, music compositions, pictures, photos, records of work development, discussion results, reading literature books, research results, interview results, and so on. LSI or the results of learners' products that can be assessed with a portfolio are (Agus Dudung 2015: 116-125): (1) Project results, investigations, or practices presented in writing. (2) Images or reports of observations. (3) Analysis of related or relevant situations. (4) Description and diagram of solving a problem. (5) Report the results of investigations on the relationships between concepts. (6) Open-ended questions. (7) The results of a typical homework assignment. (8) Group work report. (9) The learners' work is obtained using video recording, audio design, and computers. (10) Photocopy of the charter letter or award mark. (12) The work in the subjects of learners, which is not assigned by the teacher (At the choice of the learners themselves, but relevant). (13) Stories about the pleasure or displeasure of learners towards the subjects concerned. (14) Stories about learners' efforts in overcoming psychological obstacles or self-improvement efforts. (15) Report on the attitude of learners towards the lesson.

Furthermore, Agus Dudung discussed the things that need to be considered and used as guidelines in the use of portfolios, among others: (1) Mutual trust between teachers and learners, meaning that in the process of assessment, teachers and learners must have mutual trust, need each other and help each other so that the education process takes place well. (2) Confidentiality, meaning mutual confidentiality between teachers and learners. Confidentiality of the results of collecting information on the development of learners needs to be adequately maintained and not conveyed to parties who are not interested in negatively impacting the education process. (3) Mutual property between learners and teachers, meaning that teachers and learners need to have a sense of having a portfolio file so that learners will feel they have the work collected and will strive to continue to improve their abilities. (4) Satisfaction,

that is, the results of portfolio work should ' contain information and evidence that encourages learners to improve themselves further. (5) Conformity, that is, the results of work collected are the results of work following the competencies listed in the curriculum. (6) Assessment of processes and results. That is, portfolio assessment applies the principles of processes and results. The learning process that is assessed, for example, is obtained from the teacher's record about the performance and work of learners. (7) Assessment and learning: portfolio assessment is inseparable from learning. The main benefits of this assessment as diagnostics are significant for teachers to see the advantages and disadvantages of learners.

Portfolio assessment techniques in the classroom require the following steps: (1) Explain to learners that the use of portfolios is not only a collection of learners' work used by teachers for assessment but also by learners themselves. (3) Determine with learners what portfolio samples will be created. The portfolio between one student and the other can be the same can be different. (4) Collect and store the works of each learner in a folder or folder in their respective homes or lokers at school. (5) Give the date of manufacture on each material information on the development of learners so that there can be seen differences in quality over time. (6) Determine the criteria for assessing portfolio samples and their weights with learners. Discuss how to assess the quality of the work of the learners. (7) Ask students to assess their work continuously. Teachers can guide learners, how to assess by providing information about the advantages and disadvantages of the work and how to improve it. This can be done when discussing a portfolio. (8) After work is assessed and its value has not been satisfactory, learners can improve. However, between learners and teachers need to be made a "contract" or agreement regarding the period of improvement; for example, 1-2 weeks of work that has been repaired must be submitted to the teacher. (10) If necessary, schedule a meeting to discuss the portfolio. If necessary, invite the parents of learners and be briefed on the purposes and objectives of the portfolio so that parents can help and motivate their children.

To prove the principle of portfolio assessment of whether a particular testing instrument is practical, purposeful, and functional in

its context, experts have long devised a set of guiding principles that serve to measure how testing instruments are of good quality to assess student learning (Bachman and Palmer 1996) appropriately. In this case, writing a portfolio valuation is no exception. To validate whether a portfolio valuation has fulfilled some of its functions to be instructional, trustworthy, realistic, manageable, and motivating with the Bachman and Palmer test usability framework (1996). Within their framework, there are six principles of assessment, including validity, reliability, authenticity, interactivity, practicality, and impact, will be discussed as follows (Ricky Lam 2018: 31-35):

First, in educational assessment, validity refers to whether the test measures what it wants to measure. If a teacher wants to evaluate a student's speaking ability, the teacher can adopt a face-to-face oral test/exam with the student. Plakans and Gebril (2015) argue that construct validity is supported by assessment information collected from content, constructs, and validity-related criteria. In terms of portfolio valuation, it has relatively high validity in general, as it aims to assess the writing process and product over time. In addition, portfolio assessments have high content validity because they usually evaluate what students have learned, for example, narrative, argumentative, and reflective pieces.

Second reliability, the principle of reliability assessment, means consistency in assessment. In addition to assessment, several factors affect reliability levels, including consistency in testing conditions, test content and formatting, and the time to take the test. Sometimes, students play a role in reliability. For example, getting too used to the test format through excessive practice affects reliability in assessment. Exam anxiety is another factor that has a strong psychological impact on students' performance in high-risk exams. There are two types of reliability in assessment, including reliability between assessors and interrater reliability (White 2011). The former refers to consistency between two or more examiners who read the same test paper. For the latter, it is about the dependence of teachers and examiners on assessment. In portfolio research, reliability has always been an issue. When portfolio valuations are used as large-scale standard valuations, reliability between appraisers reaches as low as 0.30 (Koretz

1998). With that said, reliability can be a less intense concern in classroom-based portfolio assessments, as teachers can utilize multiple student entries/artefacts as a means of triangulation and authentication. Teachers' continued observation of student writing development is the most reliable evidence to corroborate their final writing performance.

The third *authenticity* is the third principle of judgment that will be discussed. It refers to how assessment tasks are analogous to real-world tasks. Despite the advent of task-based pedagogical approaches, scholars remain sceptical about the authenticity of classroom assignments because some are not designed based on everyday scenarios (Green 2014). Brown (2004: 28) has proposed that test tasks are authentic if they have the following characteristics: the language used in the test is natural; contextualized question items; topics of interest and closely related to student life; problem items are linked thematically by a storyline or episode; In a sense, a test task represents a real-world task. In writing assessment, there has been a transformation in the prompt format, i.e., from one-sentence instructional input to text-based prompts that are thematically related to other parts of the test such as competency reading or listening tasks (integrated reading examples and exam format writing; Plakans 2009). Although there have been changes in the test format, most writing assessments are still administrated in highly contrived environments, as exemplified in timed essay testing. In contrast, portfolio assessment provides students with a writing environment rather than testing to develop their composition skills both cognitively and metacognitively. Portfolio tasks are very similar to real-world tasks where writing is produced over a long time and with internal and external feedback for revision.

The fourth *practicality* principle of assessment that will be outlined is practicality, which refers to whether teachers and students can manage the test professionally and administratively (Bachman and Palmer 1996). For example, a one-on-one speaking test of English language proficiency is valid and accurate for measuring a student's speaking ability in an authentic sense. Nonetheless, it takes a long time to assess many candidates, requires much money to recruit testers, and requires expert marking expertise from examiners. Speaking tests are said to have low practicality

despite their high validity. There is a trade-off between practicality and validity. In writing portfolio valuations, practicality is a problem, although not the most problematic compared to other valuation principles such as reliability. Portfolio valuation may not be a practical option for accountability purposes across the country because reading and printing an extensive writing portfolio will swallow up much public revenue.

Conversely, if classroom teachers use a writing portfolio for pedagogical and learning-oriented purposes, practicality may not pose a significant threat even though they may worry about the heavy assessment burden (Lam 2013). Practicality issues in portfolio valuation can be mitigated by including peer review as part of the portfolio development process (Atai and Alipour 2012) and by shifting paper-based portfolios to electronic portfolios to reduce the complexity of all compilations. Logistics (Cambridge 2010).

Kiama *impact* is the final assessment principle that I will discuss. Test impact is also the same as a setback in most assessment literature. This refers to the social impact of testing on the teaching and learning process. Tests are essential for students' future learning careers; they will have excessive practice to familiarize themselves with the content and format of the test. Rogier (2014) argues that engaging students in the assessment process, including conducting self-assessment and peer review with rubrics before teacher assessment, promote a positive wash effect. Teachers can reduce assessment risk by writing a portfolio by adopting pending design and evaluation. Therefore, students have many opportunities to (re-) write concepts and get timely feedback from themselves, peers, and teachers for text improvement. These activities motivate students to learn and positively impact appropriate teaching practices.

Furthermore, the holistic rubric for writing portfolio valuations can be divided into several levels to distinguish such assessments: Level 5 portfolios represent outstanding quality work. It reflects students' enthusiasm, commitment, and perseverance in revising all written works. The selection of topics is very logical, creative, and diverse. Portfolio entry content is in-depth and can convey key ideas to readers. Entries are well written, well organized, and very neat. There is ample evidence to validate a student's

transformation into a reflective writer. Students can create error-free entries for portfolios.

A Level 4 portfolio is a good quality job. It reflects students' willingness and involvement in revising almost all written works. The selection of topics is logical and exciting but not comprehensive in scope. Portfolio entry content is quite in-depth and conveys key ideas to readers. Entries are generally well written but require better organization. There is sufficient evidence to validate a student's transformation into a reflective writer. Students have good mechanical commands despite sometimes slipping in grammar.

A Level 3 portfolio represents average quality work. This reflects the involvement of some students in revising most written works. The selection of topics is reasonable but limited in variety. Portfolio entry content is appropriate but not effective enough to convey critical ideas to readers. Entries are written satisfactorily but with problems in the coherence of the text. There is evidence to validate a student's transformation into a reflective writer. Consistent grammatical errors are seen even though they do not hinder understanding.

A Level 2 portfolio represents work of below-average quality. This hardly reflects the student's involvement in revising the paper. The selection of topics is haphazard and careless. Portfolio entry content is underdeveloped and cannot convey the main idea to the reader. The written entries are relatively poor and have serious problems incoherence and organization. There is minimal evidence to validate a student's transformation into a reflective writer.

A Level 1 portfolio represents substandard quality work. It cannot reflect students' involvement in revising written works—monotonous topic selection. The content of portfolio entries is illogical and inconclusive, so it barely conveys the main idea to the reader. Entries are poorly written with little evidence to show investments and holdings in writing. There is no objective evidence to validate a student's transformation into a reflective writer. Grammar problems are a problem, and most sentence structures are wrong.

Student portfolios are most effective when evaluating students' progress and learning achievement. When a portfolio is used to document and evaluate students' knowledge, skills,

and work habits in school, teachers can adapt teaching strategies when evidence shows that students are good or not learning what is being taught. Experts usually argue that a portfolio should be integrated into the teaching process. Students should gradually sustainably build a portfolio, i.e., the portfolio should not simply be an archive of unemployed work products that are only reviewed at the end of the course or school year.

Portfolios can help teachers monitor and evaluate learning progress over time. Tests and quizzes provide teachers with information about what students know at any given time, but a portfolio can document how students have grown, matured, and improved as learners over a project, school year, or several years. For this reason, some educators argue that a portfolio not only becomes a compilation of students' best work but should also include evidence and work products that show how students improve over time. For example, some versions of the essay can show how students revise and improve their work based on feedback from their teachers or peers.

Portfolios help teachers determine whether students can apply what they have learned to new problems and different fields of study. A test can help teachers determine, for example, whether a student has learned a particular math skill. Nevertheless, can those students also apply those skills to complex economics, geography, citizenship, or history issues? Can they use it to perform statistical analysis of large data sets in spreadsheets? Or can they use it to develop a better plan for a hypothetical business? (Educators can call this ability to apply skills and knowledge to new problems and different domains "transfer. They were learning").

Similarly, portfolios can also evaluate student work and learning in a non-school context. For example, suppose a student participates in an internship or completes a project under an expert mentor from the community. In that case, students can create a portfolio during these learning activities and submit it to their teacher or school as evidence that they have encountered specific learning expectations or graduation requirements.

Portfolios can encourage students to take more ownership and responsibility for the learning process. In some schools, portfolios are a way for students to critique and evaluate their work and

academic progress, often determining what to include in their portfolio. Because portfolios document learning growth over time, they can help students reflect on where they started the course, how they progressed, and where they ended up at the end of the school year. When reviewing a portfolio, teachers may also ask students to articulate the relationship between a particular work product and academic expectations and goals for the course. For this reason, portfolio advocates often recommend that students be involved in determining what goes into the portfolio and that teachers should not unilaterally make decisions without involving students. For related discussions, see student engagement and student voices.

Portfolios can improve communication between teachers and parents. Portfolios can also help parents become more informed about their students' education and learning progress, what is taught in a particular course, and what students do and learn in the classroom. Experts argue that when parents are more informed and involved in their child's education, they can play a more active role in supporting their children at home, positively influencing academic achievement and long-term outcomes.

Portfolio development has benefited students significantly (Marianne Jones and Marilyn Shelton: 23-26). First, the portfolio process helps students reframe how they see themselves as learners. It empowers individuals to take responsibility for their learning to examine previously passive roles and become more proactive in their learning efforts. It encourages them to think about their learning and environment critically and meaningfully to become conscious, deliberate, and independent learners.

Second, the portfolio process provokes learners to view education differently as integrative and sustainable beyond the confines of the classroom and continue throughout life. We have often heard that students feel that their college classes are irrelevant and have no connection to "real life." Many have experienced higher education as a series of obstacles that one passes through to get a "piece of paper." In contrast, students who have experienced the portfolio process report a high level of connectedness between what they do in the classroom and what they experience outside the classroom door. The tangible nature of portfolio work bridges the theory-to-practice gap

in a way that results in meaningful learning and change. The course contents are no longer the item of one of the tests for the exam and immediately forgotten. It comes to be owned by the learner and therefore becomes part of the fabric of one's professional life and development.

Third, portfolio development encourages meaningful learning, not memorization. This kind of learning rarely occurs in a straight line. It involves inevitable twists and turns, requires a step back, and goes around just to face and challenge learners in new and unexpected ways. It is the kind of messy learning that requires all of us, teachers and students, to think about and question what we know, how we know it, and how it affects us, and it requires us to engage in dialogue about these things together. Grant and Huebner (1998) call this "strong active and relevant learning. In teacher education, as in all educational environments, strong learning occurs when what is learned and how it is learned is organized to build the learner's strength" (p. 33–34). Fink (2003) calls it significant learning.

Fourth, our experience shows that portfolio development reinforces formal operational thinking processes—metacognition, abstract and complex thinking, and hypothetical-deductive reasoning. It provides a means to internalize learning at a deeper level and develop and improve high-level thinking skills. Grant and Huebner (1998) show that "Learning with understanding is more likely when one is asked to explain, decipher, or maintain one's position to others, as well as oneself." Portfolios require a complex interaction of various activities in which the learner constantly seeks to explain, decipher, and maintain. They provide a vehicle through which learners turn information and experiences into new knowledge that belongs to them and think contextually about thinking and learning in increasingly complex ways.

Fifth, portfolio development facilitates self-awareness and discovery. It encourages learners to express what they know and can do in a meaningful way personally, individually, and creatively. Portfolios often validate learners' knowledge and skills, encouraging them to reflect, recognize, evaluate, and appreciate their progress. They are vehicles for refining professional identity and recording continued growth, and they provide a source of pride for builders.

4 CONCLUSION

An essential task of the portfolio approach is to identify learning in each period that reflects the student's abilities in one of the objective areas. Portfolios accommodate a variety of ways to know and recognize different learning styles. The portfolio process helps students to reframe how they see themselves as learners. This allows students to know how to evaluate themselves during the semester.

5 BIBLIOGRAPHY

- Agus, D. (2015). *Penilaian Psikomotor*. Jakarta: Jurusan Teknik Mesin Fakultas Teknik Universitas Negeri Jakarta.
- DeFabio, R. (1993). *Characteristics of Student Performances Factors in Portfolio Assessment*. New York: National Research Center on Literature Teaching and Learning, Albany, NY.
- <http://contest.japias.jp/tqj2000/30202/frame/portfolio.html#1> (accessed 06/30/2019 23:37)
- <http://www.ascd.org/publications/books/197171/chapters/The-Types-of-Portfolios.aspx> (accessed 06/30/2019 22:40)
- <https://www.edglossary.org/portfolio/> (accessed 06/30/2019 20:22)
- Jones, M., & Shelton, M. (2006). *Developing Your Portfolio Enhancing Your Learning and Showing Your Stuff*. New York: Routledge.
- Kemendikbud. (2013). *Penerapan Pendekatan Scientific Approach*. Jakarta: Kemendikbud.
- Lam, R. (2018). *Portfolio Assessment for the Teaching and Learning of Writing*. Hong Kong: SpringerBriefs in Education.
- Martinis, Y. (2012). *Paradigma Baru Pembelajaran*. Jakarta.
- Olds, B. M., & Pavelich, M. J. (n.d.). *A Portfolio-Based Assessment Program*. Pendidikan di Masa Pandemi. (n.d.).
- Penilaian Hasil Belajar Peserta Didik Sekolah Dasar sebagai Umpan Balik Pembelajaran - Direktorat Sekolah Dasar. (n.d.).
- Spicuzza, F. J. (1996). *An Evaluation of Portfolio Assessment*: 8(6), 6–9.
- Tantangan Dunia Pendidikan di Masa Pandemi – Direktorat Jenderal Pendidikan Tinggi Kementerian Pendidikan dan Kebudayaan Republik Indonesia. (n.d.).
- Tantangan Pendidikan di Masa Pandemi, Semua Orang Harus Jadi Guru | Kementerian Koordinator Bidang Pembangunan Manusia dan Kebudayaan. (n.d.).
- TINGGI, D. J. (2019). *SERTIFIKASI GURU DALAM JABATAN TAHUN 2019*. Jakarta: Departemen Pendidikan Nasional.