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# Best Practices and Challenges in the Assessment of Online Learning among Bsed Freshmen

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#### **ABSTRACT**

This study examined the practices and challenges of assessing online learning in the Bachelor of Secondary Education (BSEd) Program. The study particularly examined the assessment methods used by instructors to evaluate BSEd freshmen amid online learning due to the COVID-19 pandemic. The study utilized document analysis and interviews to gather data. Results revealed that the common assessment strategies employed were traditional examinations, online quizzes and assessments, projects and assignments, multimodal outputs, class participation, and audio-video presentations. Traditional examinations continue to be used to evaluate cognitive abilities, employing a variety of question formats such as multiplechoice, short-answer, and essay questions. Along with these, online quizzes and assessments are widely used, providing the advantage of immediate feedback. Project-based assessments demonstrate a transition towards practical applications, in line with constructivist learning theories. Class participation assessments prioritize active involvement and effective communication abilities. Diverse learning styles can be accommodated through the use of multimodal outputs and audio-video presentations. Effective strategies derived from student interviews encompass clear communication, varied assessment methods, and timely feedback. Various challenges, including technical issues, communication barriers, and time management, were also revealed. This research provides valuable insights into optimizing assessment practices in online learning for BSED freshmen. It promotes a student-centered approach to enhance educational experiences.

## **INTRODUCTION**

The COVID-19 pandemic has brought so much terror to the world. It has hampered many operations and created unimaginable changes in the different walks of life. Because of the imposition of lockdowns and community quarantines, many social and business activities are put to a halt. The realm of educational institutions has been among the different industries that have been affected by the pandemic. Because of fear of contagion and the further spread of the disease, the Philippine government suspended the conduct of face-to-face classes and resorted to different learning modalities, including modular and online learning approaches.

The Mindoro State University, being one of the esteemed higher education institutions in the country, responded to this regulation by delivering instruction on the prescribed modalities based on the student's preferences and circumstances. Upon the students' enrolment, they are asked to choose their preferred instruction modality. In the BSEd program, the majority of the students opted online learning modality where the delivery of instruction is done synchronously or asynchronously.

But because of the reality that the college has been accustomed to the traditional face-to-face classes, this sudden change of instruction of delivery comes with different challenges to all members of the academic community. The adjustment has to be done in a short period it does not adequately prepare the school administration, teachers, students, and parents for the

sudden change (Daniel, 2020). The teachers had to take on the challenge of providing meaningful learning experiences to the students (De Witt, 2020), while the students had to take an active part in their learning while struggling with social isolation and anxieties (Brooks *et al.*, 2020).

While the learning contents can be easily prepared, guided by the provided mandates and guides from the Commission on Higher Education, one of the outstanding challenges that this sudden change brought to the educational arena is in terms of learning assessment. Because of the proximity barriers, as teachers and students have to continue the learning process away from one another, evaluating the learning success while considering several factors due to the different circumstances has become a struggle.

The assessment of student learning is a crucial and fundamental part of the teaching-learning process (Kearns, 2012). The results from the assessment dictates the success or failure of the instruction delivery and are often used as the starting point for any intervention and remediation and other further actions to maintain of enhance the success of the learning process. Because of the new context of online learning, some of the traditional assessment methods may not be appropriate to use. As there are different risks such as cheating and committing plagiarism, the assessment methods have to changed to tailor the desired learning outcomes. However, the change on assessment strategies have also required more adjustments from the side of the learners.

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In light of these circumstances, the researchers proposed to conduct a study that will examine the different assessment methods to be applied by the general education teachers of the BSEd program program this second semester of academic year 2020-2021. Towards the end of the semester, when these methods are expected to be applied, selected freshmen students will be interviewed to identify the different best practices and challenges in the assessment of their online learning.

#### **METHODOLOGY**

This study employed the qualitative method of research. In particular, document analysis and interviews will be conducted. Frey (2018) defined document analysis as a form of qualitative research employing a systematic procedure to analyze essential documents to seek answers to specific research questions. In the proposed study, the syllabi for all of the general education subjects of the BSED freshmen will be analyzed to identify the most common assessment strategies implemented by the instructors.

On the other hand, Frances, et al., (2009) defined qualitative research interviews as the most commonly used method in data collection particularly in the fields of health and social research. This type of method is utilized to gain insight into people's perceptions and experiences of a given phenomenon. To identify the challenges and best practices in the assessment of online learning, randomly selected BSED freshmen will be interviewed through online communication tools. Interview transcripts will be analyzed using thematic analysis.

Data collection using the document analysis was done in April 2021 while the interviews were conducted towards the end of the second semester A.Y. 2020-2021. In addition, respondents were the College freshmen of the program who are duly enrolled in the second semester of the A.Y. 2020-2021.

# RESULTS AND DISCUSSION

# Common Assessment Strategies Amidst Online Learning

In the field of education, evaluating students' comprehension and proficiency in course material is an essential aspect of the teaching and learning process. This comprehensive analysis delves into the assessment strategies identified through document analysis of syllabi for general education subjects among BSED freshmen. The study uncovers a wide range of assessment methods used by educators, providing insight into the changing landscape of evaluation techniques in higher education.

### **Traditional Examinations**

Traditional examinations continue to be widely used as an assessment method for BSED freshmen, highlighting their long-standing importance in gauging students' comprehension of course material. Assessments usually consist of multiple-choice questions, short-answer responses, and essays, offering a thorough evaluation

of cognitive abilities. According to Shraim (2019), traditional exams are considered a reliable method for assessing students' ability to recall factual information and grasp fundamental concepts. Nevertheless, some critics warn against placing too much trust in these assessments. Agustin and Shofiyah (2023) argue that a more comprehensive evaluation of higher-order thinking skills is necessary.

Traditional exams are commonly preferred due to their convenient administration and efficient evaluation of diverse subject matter. According to Nobre (2021), traditional exams tend to encourage surface learning and memorization rather than fostering deep understanding, despite their positive aspects. To address this concern, educators have the option of incorporating Bloom's Taxonomy (Arneson & Offerdahl) into their exam design. By doing so, they can assess not only recall, but also application, analysis, synthesis, and evaluation. This approach promotes a more comprehensive evaluation of students' cognitive abilities.

A study conducted by Geng et al. (2019) revealed that the combination of traditional exams and active learning strategies can significantly improve student performance and foster the development of critical thinking skills. It can be inferred that the instructional methods used alongside traditional examinations may impact their effectiveness. When it comes to enhancing student learning outcomes, educators should explore the potential benefits of integrating traditional exams with pedagogical approaches that foster active engagement and practical application of knowledge.

# Online Quizzes and Assessments

The incorporation of online quizzes and assessments signifies a notable change in assessment methods, in line with the growing dependence on technology in the field of education. Online assessments have various benefits, including prompt feedback and adaptability, as emphasized by Benhura *et al.* (2022). Nevertheless, there have been concerns raised regarding equity and accessibility (Mohd Basar *et al.*, 2021). Students who have limited access to technology or are facing digital disparities may face challenges in online assessment environments, potentially putting them at a disadvantage.

A study conducted by Heflin and Macaluso (2021) indicates that carefully crafted online quizzes have the potential to increase student engagement and motivation. Online assessments have the advantage of being interactive and can include multimedia elements to accommodate different learning styles (El-Sabagh, 2021). Educators need to acknowledge and tackle the potential problems of cheating and plagiarism that may arise in online environments (Valizadeh, 2022). Ensuring the implementation of secure online assessment platforms and fostering a culture of academic integrity are of utmost importance.

The efficacy of online quizzes and assessments may also be influenced by the type of course and the content



being taught. As an example, online assessments that incorporate simulations and virtual experiments can be advantageous for science and engineering courses (Flegh *et al.*, 2023). Educators need to ensure that online assessment methods are in line with the learning objectives and requirements of their courses.

#### **Projects and Assignments**

Project-based assessments and assignments indicate a transition towards assessing students' capacity to apply theoretical knowledge in real-world situations. Project-based assessments are in line with constructivist learning theories, which prioritize practical experiences and real-life applications (Duke *et al.*, 2020). The authors argue that project-based learning promotes the development of critical thinking, problem-solving, and collaboration skills.

Nevertheless, certain obstacles have been recognized, including differences in student abilities and limited time availability. Educators need to establish precise guidelines and assessment criteria to maintain fairness and consistency when evaluating a wide range of projects. Incorporating project-based assessments that mirror industry tasks can enhance their authenticity and better equip students to tackle real-world challenges (Miller & Konstantinuo, 2021).

Scholarly studies indicate that project-based assessments have the potential to foster a more profound comprehension and long-term retention of information when compared to conventional exams. Effective incorporation of projects and assignments into the curriculum necessitates careful planning, providing structure, and implementing feedback systems to assist students in their learning journey.

# **Class Participation**

Class participation serves as an assessment method to gauge students' involvement, proficiency in communication, and comprehension of the subject matter. This is achieved by their active engagement in conversations and activities. This implies that teachers under the BSEd program chose to employ clear participation rubrics and establish opportunities for both verbal and non-verbal contributions during their respective class discussions.

The study conducted by Double (2018) suggests that well-structured class participation assessments can positively influence the learning environment and increase student engagement. It is crucial to strike a balance that encourages active participation while also respecting the diverse learning styles of individuals. Incorporating reflective components into assessments of class participation enables students to articulate their educational progression and demonstrate their capacity for introspection.

# **Multimodal Outputs**

Multimodal outputs have gained recognition as an assessment strategy that acknowledges the diverse ways in

which students can showcase their understanding. During multimodal assessments, content is generated by using different modes such as text, images, audio, and video. This approach aligns with the principles of Universal Design for Learning (Bouchey *et al.*, 2021), which caters to a diverse range of learning styles and abilities.

Research conducted by Abdulrahman *et al.* (2020) suggests that incorporating multimedia elements into assessments can enhance learning outcomes by stimulating different cognitive processes. However, when developing multimodal assessments, it is crucial to carefully consider assessment criteria and clearly define expectations.

# Audio-Video Presentations

The focus on audio-video presentations as an assessment strategy underscores the importance of effective communication skills in higher education. Audio-video presentations require students to effectively convey their ideas, research findings, or project outcomes through recorded presentations that combine verbal and visual communication elements.

Research conducted by Tang and Intai (2018) supports the notion that the incorporation of audio-visual aids can enhance the process of learning and improve long-term retention. Integrating audio-video presentations into assessments enables students to improve their communication skills, which are essential in professional settings.

However, it is important to consider the issues surrounding accessibility, technical obstacles, and the need for objective evaluation criteria. It is crucial to have well-defined guidelines, adequate technical support, and evaluation criteria that take into account various presentation styles in order to ensure a fair and inclusive implementation of audio-video presentations as an assessment strategy.

Including audio-video presentations in education aligns with the contemporary practice of integrating multimedia components. It is acknowledged that visual and auditory communication play a crucial role in enhancing learning outcomes (Magulo, 2019). In today's fast-paced world, it is imperative for educators to stay informed about the latest developments in technology.

# Best Practices in the Assessment of Online Learning

As online learning continues to evolve, understanding student perspectives on assessment practices is crucial for optimizing the educational experience. This discussion delves into key themes identified through interviews with students, shedding light on their views regarding best practices in online learning assessment. The three prominent themes that emerged from these interviews include the importance of clear communication, the favorability of varied assessment methods, and the significance of timely and constructive feedback.

#### **Clear Communication**

During the interviews, students consistently highlighted



the crucial role of effective communication from instructors when it comes to online assessments. They valued clear and precise instructions that minimized confusion and offered a structured approach to effectively completing assessments. This sentiment is supported by a study conducted by Moore *et al.* (2020), highlighting the significance of clear and effective communication in the context of online learning.

"I really like it when teachers give clear instructions. It makes things clearer for me and helps me concentrate on the job at hand. It's like a plan that helps me get through the test".

Students indicated a preference for instructors who utilized various communication channels, such as discussion forums and announcement posts. These findings are in line with the research conducted by Abdulrahman *et al.* (2020), which highlights the importance of utilizing different channels to reinforce essential assessment-related information. In addition, students emphasized the importance of using clear and straightforward language, which aligns with the findings of Tang and Intai's (2018) study. This research indicates that using plain language promotes inclusivity and accessibility in online learning settings.

Through the interviews, it was found that effective communication plays a crucial role in establishing expectations and improving the online assessment experience. This, in turn, helps to alleviate stress and enables students to better concentrate on their learning goals.

#### Varied Assessment Methods

According to the students, the utilization of different assessment methods was seen as positive and inclusive of different learning styles and preferences. The interviews demonstrated an understanding of utilizing a variety of quizzes, assignments, and projects, in line with the principles of Universal Design for Learning (UDL) to promote inclusivity.

"I like having tasks, projects, and quizzes all at the same time." It's more interesting and works for more than one way of learning. It's not enough to just memorize; you need to understand the information in different ways.

Students recognized the advantages of using a range of assessment formats, supporting the findings of Behar-Horenstein and Niu (2011) study which suggests that diverse assessments can accommodate various learning styles and promote critical thinking and creativity. The theme highlights the notion that assessments should go beyond mere performance evaluation and instead provide chances for active engagement and a more profound comprehension of the content (Martin & Bollinger, 2018).

Based on the interviews conducted, students expressed a clear preference for assessments that go beyond mere memorization. They value assessments that promote a deep understanding of the subject matter and provide opportunities to demonstrate their skills in diverse ways.

## Timely and Constructive Feedback

The interviews revealed that timely and constructive feedback was a crucial aspect for students, as it greatly influenced their learning experience. Students have indicated a need for feedback that is clear and practical, which aligns with the idea put forth by Hattie and Gan (2011) that effective feedback should serve as a guiding tool for students in their learning process.

"Getting comments on time is very important. It's not enough to just fix mistakes; I need to know what I did wrong and how I can get better. I feel like I'm always talking to the teacher, which keeps me linked and motivated."

Within the realm of online learning, where students may feel isolated due to the lack of physical presence, the importance of feedback in fostering a meaningful connection with instructors was highlighted by students. Interviewees emphasized the importance of comprehensive feedback, which not only identifies mistakes but also acknowledges strengths and offers guidance for enhancement. This is in line with the viewpoint of students that feedback plays a role in formative assessment, helping them develop metacognitive skills and creating a supportive online learning environment (Ortega-Ruiperez, 2022).

Overall, the findings from student interviews highlight the significance of effective communication, diverse assessment techniques, and prompt and constructive feedback in the evaluation of online learning. By incorporating these effective strategies that cater to student preferences, educators can optimize the online learning experience, fostering increased engagement, satisfaction, and overall achievement.

To successfully implement these best practices, it is crucial to adopt a student-centered approach. This involves instructors making a deliberate effort to prioritize clear communication, utilize a variety of assessment methods, and offer timely and constructive feedback. By aligning pedagogical theory with student expectations, educators can create a positive and effective online learning environment. By incorporating these themes, which are based on student perspectives, valuable contributions can be made to the ongoing discussions and enhancements in online learning assessment practices.

# Challenges in the Assessment of Online Learning Technical Issues

One notable theme that arose from student interviews is the widespread occurrence of technological difficulties in assessing online learning. These hurdles involve a variety of issues, such as difficulties with internet connectivity and problems relating to the platform.

"Frequent problems with connecting to the internet can be very annoying."

Basa (2021) emphasize the need of tackling digital infrastructure difficulties, since these technical obstacles can significantly disrupt students' assessment experience. Examining the precise characteristics of these technical obstacles is essential for devising focused remedies.



Lai et al. (2022) stressed the importance of schools conducting comprehensive evaluations of the technology environment to identify prevalent problems and offer sufficient assistance. For instance, determining if connection problems are limited to a particular location or widespread can guide the implementation of targeted remedies for that region or more extensive enhancements to the overall infrastructure.

# **Communication Barriers**

The perceived communication difficulties in online learning, notably the lack of face-to-face interaction with teachers, surfaced as a second issue from student interviews. Participant 5 said,

"It's hard because we don't talk to each other in person. I feel like I'm by myself sometimes. When I don't understand a job, I'm not always sure if I should ask the teacher for help. It can also be a pain to ask too many questions."

Communication is critical in creating a healthy and engaging online learning environment.

Instructors should explore implementing best practices guided by student suggestions to overcome these communication problems. Collaboration tools, video conferencing, and discussion boards, for example, have been advocated as useful ways to improve communication in online environments (Hassan Khalil, 2017). Investigating students' preferences and experiences might help teachers choose the best communication tactics for certain cohorts and subjects.

# Time Management Challenges

Students have identified the challenge of successfully managing time for online exams as the third significant issue. As one participant shared,

"It's hard to keep track of time during online tests. It's not enough to just know the subject; you also need to know how to use your time well."

Proficiency in time management is crucial for achieving success in any academic environment. However, the online format presents distinctive obstacles. It is essential to determine whether these challenges are unique to the online format or representative of wider academic requirements in order to create focused remedies.

According to Batbaatar and Amin (2021), incorporating regular calendars, explicit deadlines, and proactive communication from instructors might help alleviate time management difficulties in online learning. Analyzing the factors contributing to challenges in managing time, such as conflicting priorities or unclear expectations, can guide the creation of effective strategies that target the underlying causes.

From these perspectives, the challenges in evaluating online learning, as determined from student interviews, include technical difficulties, communication obstacles, and time management hurdles. To tackle these issues, it is necessary to possess a thorough comprehension of their essence and consequences. This discussion has utilized scholarly sources to offer insights on potential answers

and interventions based on the academic literature. Collaboration between institutions and instructors is necessary to apply specific tactics that improve the online assessment experience, hence creating a more inclusive and effective learning environment.

## **CONCLUSION**

The assessment landscape for BSED freshmen includes a range of strategies, including traditional exams, online quizzes, projects, assignments, and class participation. The study proposes a holistic approach that surpasses conventional exams, highlighting the application of Bloom's Taxonomy to cultivate a more profound understanding. Multiple assessment methods, including online quizzes, projects, and class participation, cater to diverse learning styles and talents. In addition, the curriculum is now integrating emerging trends such as multimodal outputs and audio-video presentations. Student viewpoints underscore the significance of clear communication, varied assessment methods, and timely feedback. The online learning environment followed the principles of Universal Design for Learning, ensuring a positive and inclusive experience. However, it is essential to address issues such as technical difficulties, language barriers, and time management challenges in order to foster a more inclusive and comprehensive experience. The research findings highlight the importance of institutions focusing on enhancing their digital infrastructure to tackle the identified challengesto tackle the identified challenges effectively effectively. Regular assessment of the technological landscape is crucial for proactively addressing common issues and tailoring support mechanisms to meet the unique needs of instructors and students. Effective communication strategies are essential for a seamless online learning experience. In order to foster engagement between students and instructors, institutions should employ a range of communication channels and incorporate collaborative tools. To effectively tackle time management challenges, institutions should consider implementing research-based, well-structured schedules, setting clear deadlines, and establishing proactive communication channels tailored for online learning environments. It is crucial to prioritize the resolution of technology-related disparities in order to maintain a fair and equitable society. In order to maintain fairness and credibility, institutions must guarantee equal access to essential resources and implement dependable online assessment systems. Continual professional development is crucial for educators to remain informed about the dynamic realm of online education. Incorporating student feedback into professional development strategies can greatly improve their effectiveness. These suggestions are grounded in evidence and cover a range of topics including digital infrastructure, communication, time management, equity, and professional development. They provide a strategic framework for institutions to enhance the online learning experience for learners.



#### REFERENCES

- Abdulrahaman, M., Faruk, N., Oloyede, A., Surajudeen-Bakinde, N., Olawoyin, L., Mejabi, O., Imam-Fulani, Y., Fahm, A., & Azeez, A. (2020). Multimedia tools in the teaching and learning processes: A systematic review. *Heliyon*, 6(11), e05312. https://doi.org/10.1016/j.heliyon.2020.e05312
- Agustin, S. P., & Shofiyah, N. (2023). Implementation of the problem based learning to improve higher order thinking skills (HOTS) of elementary school students. https://doi.org/10.21070/ups.3149
- Arneson, J. B., & Offerdahl, E. G. (2018). Visual literacy in bloom: Using bloom's taxonomy to support visual learning skills. *CBE—Life Sciences Education*, *17*(1), ar7. https://doi.org/10.1187/cbe.17-08-0178
- Behar-Horenstein, L. S., & Niu, L. (2011). Teaching critical thinking skills in higher education: A review of the literature. *Journal of College Teaching & Learning (TLC)*, 8(2). https://doi.org/10.19030/tlc.v8i2.3554
- Benhura, A. R., Venganai, H., Zengeni, F., & Munodawafa, M. (2022). Rethinking students' assessments in higher education during and post-COVID-19. Teaching and Learning with Digital Technologies in Higher Education Institutions in Africa, 77-89. https://doi.org/10.4324/9781003264026-7
- Bouchey, B., Castek, J., & Thygeson, J. (2021). Multimodal learning. *Innovative Learning Environments in STEM Higher Education*, 35-54. https://doi.org/10.1007/978-3-030-58948-6-3
- Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *The lancet*, 395(10227), 912-920.
- Daniel, J. (2020). Education and COVID-19 problem. Springer. https://doi.org/10.1007/s11125-020-09464-3
- De Witt, P. (2020). 6 Reasons Students aren't Showing Up for Virtual Learning. Available online: http://blogs.edweek.org/edweek/finding\_common\_ground/2020/04/6\_reasons\_students\_arent\_showing\_up\_for\_virtual\_learning.html?intc=main-mpsmvs
- Double, K. S. (2018). The impact of peer assessment on academic performance: A meta-analysis of control group studies. https://doi.org/10.31234/osf.io/c4rkv
- Duke, N. K., Halvorsen, A., Strachan, S. L., Kim, J., & Konstantopoulos, S. (2020). Putting PjBL to the test: The impact of project-based learning on second graders' social studies and literacy learning and motivation in Low-SES school settings. *American Educational Research Journal*, 58(1), 160-200. https://doi.org/10.3102/0002831220929638
- El-Sabagh, H. A. (2021). Adaptive E-lEarning environment based on learning styles and its impact on development students' engagement. *International Journal of Educational Technology in Higher Education*,

Flegr, S., Kuhn, J., & Scheiter, K. (2023). When the whole is greater than the sum of its parts: Combining real and virtual experiments in science education. *Computers* 3'2

18(1). https://doi.org/10.1186/s41239-021-00289-4

- virtual experiments in science education. *Computers & Education*, 197, 104745. https://doi.org/10.1016/j.compedu.2023.104745
- Frances, R., Coughlan, M., & Patricia, C. (2009). Interviewing in Qualitative Research. *International Journal of Therapy and Rehabilitation*, 16(6), 309-314. https://doi.org/10.12968/ijtr.2009.16.6.42433.
- Frey, B. (2018). Document Analysis. SAGE Encyclopedia of Educational Research, Measurement, and Evaluation. https://dx.doi.org/10.4135/9781506326139.n209
- Geng, S., Law, K. M., & Niu, B. (2019). Investigating self-directed learning and technology readiness in blending learning environment. *International Journal of Educational Technology in Higher Education*, 16(1). https://doi.org/10.1186/s41239-019-0147-0
- Hassan Khalil, H. (2017). Using online communication tools in group activities to develop collaborative learning skills. Conference on Education 2015. Partners in Excellence. https://doi.org/10.5339/qproc.2015.coe.23
- Heflin, H., & Macaluso, S. (2021). Student initiative empowers engagement for learning online. *Online Learning*, 25(3). https://doi.org/10.24059/olj. v25i3.2414
- Kearns, L. (2012). Student Assessment in Online Learning: Challenges and Effective Practices. *MERLOT Journal of Online Learning and Teaching*, 8(3).
- Lai, J. W., De Nobile, J., Bower, M., & Breyer, Y. (2022). Comprehensive evaluation of the use of technology in education validation with a cohort of global open online learners. *Education and Information Technologies*, 27(7), 9877-9911. https://doi.org/10.1007/s10639-022-10986-w
- Magulod, G. (2019). Learning styles, study habits and academic performance of Filipino University students in applied science courses: Implications for instruction. *Journal of Technology and Science Education*, 9(2), 184. https://doi.org/10.3926/jotse.504
- Martin, F., & Bolliger, D. U. (2018). Engagement matters: Student perceptions on the importance of engagement strategies in the online learning environment. *Online Learning*, 22(1). https://doi.org/10.24059/olj.v22i1.1092
- Miller, E., & Konstantinou, I. (2021). Using reflective, authentic assessments to embed employability skills in higher education. *Journal of Work-Applied Management,* 14(1), 4-17. https://doi.org/10.1108/jwam-02-2021-0014
- Mohd Basar, Z., Mansor, A. N., Jamaludin, K. A., & Alias, B. S. (2021). The effectiveness and challenges of online learning for secondary school students A case study. *Asian Journal of University Education, 17*(3), 119. https://doi.org/10.24191/ajue.v17i3.14514
- Nobre, V. (2021, January 11). Traditional assessment and its characteristics. New Routes. https://newroutes.



- com.br/cover-topic/traditional-assessment-and-its-characteristics/
- Shraim, K. (2019). Online examination practices in higher education institutions: learners' perspectives. *Turkish Online Journal of Distance Education*, 20(4), 185-196.
- Tang, D. K., & Intai, R. (2018). Effectiveness of audiovisual aids in teaching lower secondary science in a
- rural secondary school. *Asia Pacific Journal of Educators and Education, 32,* 91-106. https://doi.org/10.21315/apjee2017.32.7
- Valizadeh, M. (2022). Cheating in online learning programs: Learners' perceptions and solutions. *Turkish Online Journal of Distance Education*, 23(1), 195-209. https://doi.org/10.17718/tojde.1050394