International Journal of Modern Education
EISSN: 2637-0905
Volume: 8 Issue: 30 (June 2026) PP. 644-655

INTERNATIONAL JOURNAL OF MODERN EDUCATION (IJMOE)
www.gaexcellence.com/ijmoe

DEVELOPMENT AND CONTENT VALIDITY OF AN OUTCOME-BASED EDUCATION CURRICULUM EVALUATION FOR MALAYSIAN PARAMEDIC TRAINING INSTITUTES

Intan Idura Mohamad Isa[1], Hishamuddin Ahmad[2*]

[1]Department of Educational Measurement, Faculty of Human Development, Sultan Idris Education University
intan.idura@ilkkm.edu.my https://orcid.org/0009-0009-8467-729X

[2]Department of Educational Measurement, Faculty of Human Development, Sultan Idris Education University
hishamuddin.a@fpm.upsi.edu.my https://orcid.org/0000-0002-7120-1593

[*]Corresponding Author

Article Info:

Article history:
Received date: 20.04.2026
Revised date: 11.05.2026
Accepted date: 31.05.2026
Published date: 25.06.2026

To cite this document:

Isa, I. I. M., & Ahmad, H. (2026). Development And Content Validity of An Outcome-Based Education Curriculum Evaluation for Malaysian Paramedic Training Institutes. *International Journal of Modern Education, 8*(30), 644-655.

Abstract:

The primary purpose of curriculum evaluation is to assess the effectiveness of the existing curriculum. This study aims to evaluate the content validity of newly developed instruments for assessing the implementation of the OBE curriculum in paramedic training institutes by selecting a diverse group of experts and ensuring that the instrument is relevant to the demands of producing competitive graduates. There were two phases involved in this study: design of the instrument and judgmental indications. A panel of seven experts was selected to validate the questionnaire. There were four experiential university lecturers and three paramedic tutors involved in the OBE curriculum. The quantitative content validity index (CVI), scale-level CVI (S-CVI), and item-CVI (I-CVI) were applied to decide whether to keep or remove certain items from the instrument. Preliminary versions of this instrument showed high content validity for individual items (I-CVI range: 0.7-1.0) and excellent overall scale content validity (S-CVI = 0.95). The initial 138 items remained when achieving a minimum score of at least 0.86. Most of the items were retained (n =131), and only seven were eliminated, which were considered not relevant by the experts. Despite time and resource constraints, a professional content validity index for OBE curriculum practice indicators in paramedic training institutes is crucial for the development of valid and reliable instrument.

International Journal of Modern Education
EISSN: 2637-0905
IJMOE
Volume: 8 Issue: 30 (June 2026) PP. 644-655

DOI: 10.35631/IJMOE.830041 **Keyword:**

Content Validity, Curriculum, Evaluation, Outcome-Based Education, Paramedic

Introduction

Outcome-based education (OBE) has emerged as a significant change in educational systems, emphasizing precisely specified competencies and end-of-course curriculum outcomes over traditional training approaches (Sunra et al., 2024). Recent studies have explored various factors related to the implementation of OBE in dissimilar educational contexts. OBE implementation has effectively enhanced student performance thoroughly regarding their competencies in paramedic professional roles (Chan et al., 2020; Garfinkel et al., 2025), critical thinking capability (Mohanta & Mandal, 2019; Pavani et al., 2020; Huang et al., 2023), and effective assessment (Amirrafiei et al., 2021;). OBE-oriented students showed high levels of satisfaction toward the curriculum to enhance knowledge and skills (Hallikainen et al., 2007; Williams, 2009; O'Sullivan et al., 2025).

For instance, the Ministry of Health (MOH) has introduced the Curriculum Transformation Agenda for paramedic training institutes, which was implemented starting in 2020 (BPL, 2024). The direction of this transformation has the goal of producing competent and high-quality health personnel in line with the needs of the country's health services. OBE curriculum administration is formulated based on the accreditation requirements set by the Malaysian Qualifications Agency (MQA). MQA is an agency responsible for implementing the Malaysian Qualifications Framework (MQF) and plays a role in providing accreditation certificates to programs or courses that comply with all the criteria and standards set (MQA, 2011).

However, to what extent is the effectiveness of the paramedical training curriculum in producing competent and highly skilled trainees in terms of the context, input, process, and product from student perspectives? In this regard, curriculum evaluation needs to be carried out continuously to obtain information on efficiency and weaknesses throughout its implementation (Nouraey et al., 2020; Amat Tarop Sumo, 2022). The quality and effectiveness of program offerings in Higher Education Institutions (HEIs) must be assessed and monitored through accreditation to maintain higher standards (Halibas et al., 2020; Dayananda et al., 2021; Hapinat, 2023). To date, no comprehensive study has been conducted to assess the OBE performance in paramedic training institutes. Thus, to fill the gap, developing a valid and reliable instrument to thoroughly assess the OBE implementation is crucial for evaluating learning outcomes and guiding the effectiveness of the OBE curriculum practices in paramedic training institutes. A profound understanding of the OBE execution from various angles is essential in supporting the attainment of intended learning outcomes.

International Journal of Modern Education
IJMOE
EISSN: 2637-0905
Volume: 8 Issue: 30 (June 2026) PP. 644-655

Validity is the degree to which an instrument measures what is intended to be measured, and reliability is the capacity of a study to obtain similar values when the same measurement is repeated (Hidayat et al., 2025). Validity and reliability are crucial to keep the questionnaire items accurate and free from defects (Sarimah Baco & Mohd Zaki Ishak, 2021). There are various methods applicable in evaluating the content validity of developing instruments (Polit, Beck, & Owen, 2007). Based on literature, the pioneer (Lynn, 1986) established content validity in nursing research, which described how content validity must be determined and demonstrated by involving two stages (development or judgment) to be quantified. First, it starts by identifying all measured factors, followed by the items for each construct. Lynn additionally recommends designating experiential experts in the content validation process, and this process has become a requirement in nursing studies and many other disciplines in developing new instruments (Polit et al., 2004). The majority of studies suggested the selected experts must be knowledgeable on the subject matter contained (Lynn, 1986; Slocumb & Cole, 1991; Davis, 1992; Grant & Davis, 1997; Creswell, 2014; Siau et al., 2025); the conceptual framework to be the basis of the instrument (Davis, 1992; Grant & Davis, 1997); and the development of the instrument (Davis, 1992; Slocumb & Cole, 1991). The experiential experts assigned to this study represent a group of experts with extensive knowledge in educational measurement and OBE implementation.

This article aims to describe an approach to evaluate the content validity of an instrument purposely to act as OBE achievement indicators and performance designed for paramedic training institutes employing experiential experts (university lecturers and the institute's tutors). This approach can offer adequate evaluation of the instrument's content validity after a thorough review of the literature. The panel of experts must meet certain specific criteria to be selected to serve as experiential expert judges before they begin their assignment. Experiential experts' involvement in this content validity evaluation can significantly improve the relevance, clarity, and overall assessment for the instrument (Schilling et al., 2007; Lien et al., 2010; Cassandra et al., 2024). Assessing an individual's expertise for content validity evaluation of the instrument in an OBE setting requires careful consideration of several important factors. Incorporating individuals with real-world experience with normal cognitive function as experiential experts to assess the suitability of self-reported instruments will provide insightful advice on writing clarity, the subject's significance, and personal impressions (Lien et al., 2010; Mohamad et al., 2023; Liu et al., 2025).

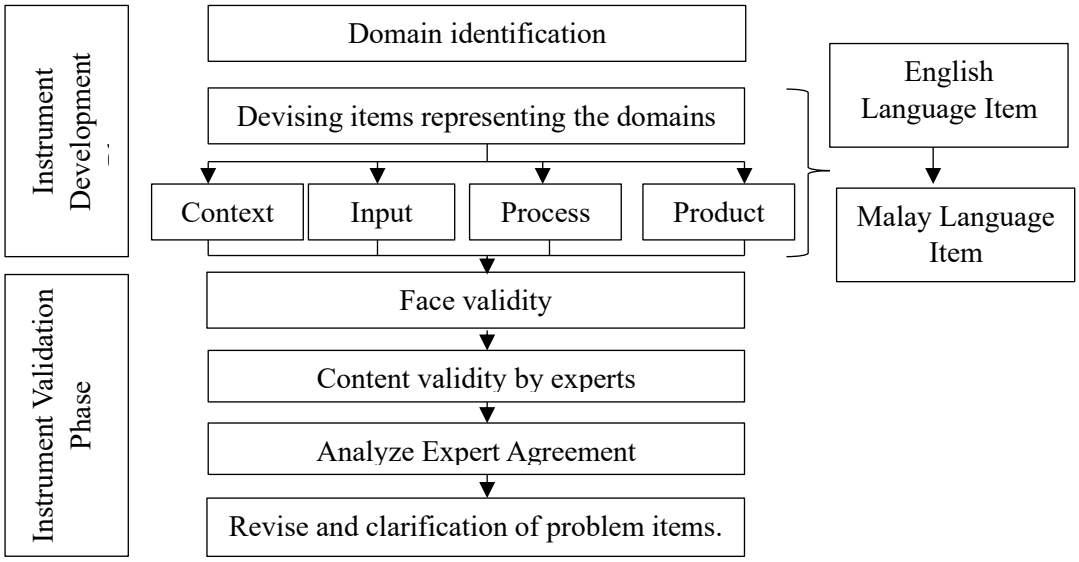
Although the criteria discussed in the literature vary, there are no standard requirements or inclusive criteria for achieving the minimum standards. Therefore, in this study, the researcher had adopted the process of identifying a potential panel of experts based on the following six criteria, :1) had a minimum of 10 years of work experience in academia, 2) had a minimum of three or more publications in conferences and journals, 3) had been involved in the implementation of OBE in any institute, 4) had been involved in the OBE syllabus or structure development, 5) was a member or chairperson of an OBE committee in any institute, and 6) was a book editor or an author of a chapter. An invitation email will reach the potential panel of experts. The researcher will also inform them of the objectives and the period of the study. The assignment of heterogeneous expert types indicates that varied experts will provide distinctive contributions to enhance the content validity of the instrument. The content validity indices (CVIs) are measured using a traditional approach of content validity measurement (Lynn, 1986). Polit et al. (2007) recently provided the definitions and computation methods for both item-level CVI (I-CVI) and scale-level CVIs (S-CVI). However, some nursing research studies in the literature demonstrated that two groups of experts were assigned: traditional and

International Journal of Modern Education
IJMOE
EISSN: 2637-0905
Volume: 8 Issue: 30 (June 2026) PP. 644-655

experiential experts to assess the content validity of newly created instruments. Nevertheless, Polit and Beck never take into account the needs or significance of calculating multiple I-CVI when a researcher needs to decide whether to accept, eliminate, or revise items for instrument development.

Methodology

Development and Validation of the Instrument



Flow Diagram of Instrument Development and Validation

Figure 1 illustrates the systematic flow diagram of instrument development and validation. The process begins with developing the questionnaires based on a thorough literature search related to curriculum evaluation for OBE implementation. Previous studies have developed and identified assertions and elements of curriculum (Alias et al., 2013; Misni et al., 2020; Nouraey et al., 2020; Dr. Preeti Oza, 2021; Amat Tarop Sumo, 2022; Duan et al., 2023; Yuan et al., 2023; Mistamiruddin & Nasri, 2024; Sunra et al., 2024). All of the main domains in the conceptual framework had been covered by previously formulated questionnaires. The domain of OBE implementation in paramedic training institutes comprised of the context, input, process, and product (CIPP) of the learning outcomes based on Stufflebeam's CIPP evaluation model (Stufflebeam, 1971). The questionnaire was divided into five sections. Section A comprised background and sociodemographic information, including the name of the training institute, gender, program, group intake, and Cumulative Grade Point Average (CGPA) for six semesters. Section B is the question related to the context assessment, explaining a student's perception about the appropriateness of the OBE curriculum structure and its teaching and learning process. Section C, input assessment that is related to students' insights on tutor readiness in implementing OBE, their interaction among them and tutors, and also facilities and educational resources provided by institutes. For section D, the question focuses on process assessment, which includes teaching and learning quality as well as evaluation and assessment procedures. Section E is the question on the product construct, an assessment of the student's learning outcome according to their knowledge, clinical practices, and generic skills. The translation of the questionnaire was using the back-to-back method (Richard W. Brislin, 1970). Every item that was originally in English has been translated into Bahasa Malaysia accordingly. To

International Journal of Modern Education
IJMOE
EISSN: 2637-0905
Volume: 8 Issue: 30 (June 2026) PP. 644-655

complete the translation, the researcher assigned a linguistics expert from Universiti Kebangsaan Malaysia. A meeting was held to discuss and ensure the original items had the correct meaning and proper sentence structure. The research project supervisor, a statistician from Universiti Putra Malaysia, and an expert panel on OBE curriculum from Universiti Kebangsaan Malaysia reviewed the questionnaire for clarification. The modifications were made based on these experts' advice and recommendations.

Experts' Agreement on the Item's Relevance

Twelve experiential experts in OBE curriculum from university and paramedic training institutes were approached by an e-mail invitation to be one of the expert panels for the instrument's content validity. Nevertheless, only seven of them have agreed to be assigned as judges. All seven panels of experts had met the minimum standard and the inclusive criteria, where they met at least three of the following six requirements below, which are 1) had a minimum of 10 years of work experience in academia, 2) had a minimum of three or more publications in conferences and journals, 3) had been involved in the implementation of OBE in any institute, 4) had been involved in the OBE syllabus or structure development, 5) was a member or chairperson of an OBE committee in any institute, and 6) was a book editor or an author of a chapter. The researcher then mailed a cover letter and content validity questionnaire to each of them. Additionally, they have received a briefing on how to make the questionnaire assessment. The chosen items must be relevant to the OBE implementation context based on their previous experiences and expert judgment. They will determine if each item was relevant, understandable, and appropriate for each construct. Experts were reminded to score the items regarding their suitability for a paramedic training institute rather than how they applied in their respective institutions. The seven experiential expert judges evaluated 138 items in all. The questionnaire content validity assessment allowed an expert to rate each item for relevance to every aspect of the OBE implementation using a 4-point Likert scale: 1 = not relevant, 2 = fairly relevant, 3 = very relevant, 4 = extremely relevant. The four ratings were used in the manner mentioned by Davis (1992). Additionally, the experts were permitted to leave a comment on any items in the review form to make them easier to comprehend.

Statistical Analysis

All data collected in this research were analysed using IBM SPSS version 21 and Microsoft Excel. The background and characteristics of the experts were presented in the descriptive analysis, including their experience, qualifications, publications in conferences and journals, chapters or books authored, and current designation. The researcher categorized every item assessed by the expert panel as "Relevant" (represented by the index value of = 1) when the expert validator scored the item as "Very relevant" or "Extremely relevant". In opposition, the item was marked by the researcher as "Not relevant" (shown by value = 0) if the content validator or expert has rated the item as "Not relevant" or "Fairly Relevant". This method adheres to the protocol outlined by Davis (1992). An I-CVI was determined by calculating the total number of items scored as "Relevant" for the index answers, divided by the total number of experts serving as content validators. The recommended I-CVI score for the item would be 0.78. In the meantime, the researcher calculated the mean of 138 I-CVI scores in order to determine the S-CVI score. Thus, when an item's CVI exceeded 0.78 and its S-CVI was larger than 0.90, the item was presumed to meet the validation criteria threshold (Polit et al., 2007). In addition, the researcher also took into account all content validators' comments on the respective items.

International Journal of Modern Education
IJMOE
EISSN: 2637-0905
Volume: 8 Issue: 30 (June 2026) PP. 644-655

Results and Discussion

Demographic of the Expert Panel

Purposive random sampling was used to identify a list of experts in OBE curriculum. Based on their subject-matter competence, the listed experts have met the inclusive criteria. Heterogeneous types of experts from both university and paramedic institutes increased the accuracy of the data and also eliminated biases in the responses. Nearly all of the experts (75-100%) had been involved in OBE implementation, served on their organizations' OBE committees and actively participated in authored book and journal article writing, and attended conferences. Table 1 shows the remaining demographic characteristics of expert panels.

Table 1: Demographic of the Expert Panels

Demographic variable	Number of respodents	Percentage (%)
Gender		
Male	3	43%
Female	4	57%
Current Employer		
Paramedic Training Institute	3	43%
Universiti Utara Malaysia	1	14%
Universiti Kebangsaan Malaysia	2	29%
Universiti Pendidikan Sultan Idris	1	14%%
Highest Degree Qualification		
Master	1	7%
PhD	6	93%
Number of years in academia/training		
0-10 years	0	0%
> 10 years	7	100%

Instrument Validation Based on Expert Panels' Agreement

The I-CVI result is reflected by the percentage of panels that have rated an item as 3 = highly relevant or 4 = extremely relevant. Then, the I-CVIs were calculated for each item for the entire group (n = 7; S-CVI). The researcher will then select the I-CVI value. As stated by Stewart et al. (2013) and Polit et al. (2007), the acceptable I-CVI rate is 0.80 when more than three panels were assigned, while the value of 0.90 indicates an excellent face validity. Lynn (1986) had created a table of I-CVI cutoff values according to the total number of panels, with up to 10 panels. It can be concluded that the required I-CVI decreases with the greater number of panels. However, a CVI score less than 0.78 is unacceptable (Lynn, 1986). Similar values of at least 0.78 when six to ten panels are assigned and an I-CVI value of 1.00 when just three to five panels are involved.

Thus, a cutoff value of 0.86 was used for the analysis of the panels' agreements. The I-CVI of seven items out of 138 was found not to meet the cutoff value of 0.86. Therefore, these seven items were removed from the instrument. Then, the instrument was reviewed with the remaining 131 items; it was then revised where the item wording and phrase structures were

International Journal of Modern Education
IJMOE
EISSN: 2637-0905
Volume: 8 Issue: 30 (June 2026) PP. 644-655

corrected based on the panels' suggestions. The CVI value for the entire instrument was computed by averaging I-CVIs across items, which was calculated to be 0.95 (Polit et al., 2007). Table 2 presents the list of eliminated items and expert panels' recommendations.

Table 2: List of Eliminated Item and Experts' Feedback

	Eliminated Item	I-CVI value (n=7)	Experts' Feedback
1	Cultivate lifelong learning for independent learning.	0.71	Too general and abstract; hard to measure in a single item.
2	Relate the experiences learned by students to their real lives.	0.71	Overlapping with other items on the knowledge of real-world application.
3	Tutors constantly ensure that the information about assessments is transparent.	0.71	Redundant with other items on relating to the assessment.
4	Tutors constantly verify that the information used in assessments is easily accessible.	0.71	Repeating the item transparency; both represent the assessment details accessibility.
5	Tutors constantly verify that tests are administered in accordance with the planned number of assessments.	0.71	Too procedural and detailed; not appropriate for student self-report.
6	Tutors evaluate the student's understanding of the topic during the teaching and learning process.	0.71	Difficult to measure accurately via student self-report; may not always be observable.
7	I find that I can develop my talents in related fields.	0.71	Vague wording; "related fields" ambiguous and imprecise to core curriculum evaluation.

An extensive literature review, along with the method of assigning experiential university lecturers and training institutes as judges, produced necessary information on the benefit of having experiential experts operate in this paramedic training institute where the research was previously conducted. It was assumed that these expert panels could assist in item rating according to their applicability to all aspects of OBE curriculum implementation, and the instrument's performance was graded based on their significance. Devriendt et al. (2012), previously discussed the method used in this study. The instrument featured 138 expert-reviewed items, with an excellent overall S-CVI of 0.95 and an I-CVI exceeding 0.86 for 131 of the items. Seven of the items were removed because their values were below acceptable limits. The main justification for elimination was that some sentences were too broad or unclear, which could reduce measurement accuracy. The first removed item on cultivating lifelong learning was thought to be conceptually significant but challenging to capture in a single survey statement. Although lifelong learning is a primary OBE objective, the item was too abstract and lacked precise indicators since OBE curriculum requires outcomes to be observable and specific (Spady, 1994). Additionally, OBE fosters holistic student development (Harden, 2007), but the item on talent development was deemed vague because the wording

International Journal of Modern Education
IJMOE
EISSN: 2637-0905
Volume: 8 Issue: 30 (June 2026) PP. 644-655

"related fields" was ambiguous. Students may interpret a few items inconsistently, thereby reducing the instrument's precision. (Polit & Beck, 2006; Zamanzadeh et al., 2015).

The core of OBE is transparency and assessment alignment (Biggs & Tang, 2011), fairness and clarity in assessment (Harden, 2007), and prioritizing quality in assessment orientation over frequency or quantity (Spady, 1994). However, several items in the instruments were found to be redundant or to overlap with other items. In particular, the items on transparency of the assessment, assessment information accessibility, and planned assessment adherence were considered repetitive. Expert panels suggested that these elements more successfully represented fewer and well-constructed items to evade duplication. This is consistent with Lynn's (1986) guideline that content validity also involves redundancy avoidance apart from relevancy. By eliminating overlapping items, the instrument was streamlined, which refined clarity and decreased respondent fatigue potential (Polit, Beck & Owen, 2007). In addition, certain items were considered too procedural and difficult to accurately measure through student self-report. For instance, the item on tutors' ongoing assessment of students' understanding during the teaching and learning process was judged to represent instructional strategies that may not be consistently observable by students. Despite formative assessment being integral to OBE (Biggs & Tang, 2011), it might not be suitable for questionnaire-based evaluation, as practical measurability is a requirement in content validity (Polit & Beck, 2006). The removal of these seven items therefore represents an improvement process to ensure that the final instrument measures only essential curriculum evaluation constructs in a way that is clear, pertinent, and practical. This process ultimately improved the content validity index (CVI) by keeping only items considered necessary, non-redundant, and clearly expressed (Lynn, 1986; Polit & Beck, 2006).

Despite demonstrating excellent content validity, this study has several limitations. The study focused only on content validity and did not include further psychometric analyses such as EFA, CFA, or reliability testing. In addition, although 131 items were retained to ensure comprehensive coverage of the CIPP domains, the large number of items may contribute to respondent fatigue. Future studies are therefore recommended to further refine the instrument and strengthen its psychometric properties.

Conclusion

In conclusion, seven items were removed, and 131 items remained. This study has shown the content validity procedure of OBE curriculum implementation is applicable in all paramedic training institutes and also can be extended to other higher education institutions to evaluate their OBE curriculum effectiveness. Although the apparent time and human resources costs are involved with a newly developed instrument's content validity, its importance deserves more consideration in developing valid and reliable assessment instruments. Future studies are recommended to examine the construct validity and reliability of the instrument through exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and reliability analysis.

International Journal of Modern Education
EISSN: 2637-0905
Volume: 8 Issue: 30 (June 2026) PP. 644-655

Acknowledgements: The researcher would like to express the highest gratitude to each and every study participant who contributed to the success of this research. Sincere gratitude is also given to the Malaysian Ministry of Health for funding this PhD research under the Hadiah Latihan Persekutuan scholarship provided. Special appreciation is also extended to the UPSI Faculty of Human Development and Postgraduate Institute for their significant assistance in making this research possible. No specific grant from any public, commercial, or non-governmental (NGO) agency was obtained for this study. This research has been approved by the Medical Research Ethics Committee (MREC) (NMRR ID: 24-02827-GWD (IIR)) as well as by the Research Management and Innovation Centre (RMIC) of the Universiti Pendidikan Sultan Idris (2024-0568-01).

Funding Statement: No funding.

Conflict of Interest Statement: The authors declare that there is no conflict of interest regarding the publication of this paper. All authors have contributed to this work and approved the final version of the manuscript for submission to the International Journal of Modern Education (IJMOE).

Ethics Statement: This study was conducted in accordance with ethical research standards. All procedures involving human participants were reviewed and approved by the Medical Research Ethics Committee (MREC) (NMRR ID: 24-02827-GWD (IIR)) as well as by the Research Management and Innovation Centre (RMIC) of the Universiti Pendidikan Sultan Idris (2024-0568-01). Informed consent was obtained from all participants prior to data collection. Participation was voluntary, and respondents were assured of confidentiality and anonymity. The data collected were used solely for academic purposes.

Author Contribution Statement: All authors contributed significantly to the development of this manuscript. [Intan Idura Mohamad Isa] was responsible for the conceptualization, methodology, data collection, analysis, and interpretation of results. [Hishamuddin Ahmad] contributed to the literature review, drafting, critical revision of the manuscript and overall supervision of the study. All authors read and approved the final version of the manuscript prior to submission.

International Journal of Modern Education
IJMOE
EISSN: 2637-0905
Volume: 8 Issue: 30 (June 2026) PP. 644-655

References

Alias, M., Nor Hayati, H. A., Tajularipin, S., & Aminuddin, H. (2013). Penggunaan Model CIPP Dalam Penilaian Kurikulum Separa Perubatan. *Prosiding Model Penyelidikan Pendidikan Dan Pembangunan Sumber Manusia (PPPSM 2013)*, *Februari*, 1–9. https://doi.org/10.13140/RG.2.1.3849.3523.

Amat Tarop Sumo. (2022). Penilaian Kurikulum Elektif Teras Linguistk Terapan Di Institut Pendidikan Guru (Ipg). *International Journal of Education and Pedagogy*, *4*(4),159–177.

Amirrafiei, A., Zia Ziabari, S. M., Haghshenas-Bakerdar, F., Kazemnejad-Leili, E., & Asadi, P. (2021). Clinical competencies of emergency medical services paramedics in responding to emergency conditions using objective structured clinical examination (Osce) in Guilan. *Journal of Emergency Practice and Trauma*, *7*(2), 101–105. https://doi.org/10.34172/jept.2021.03.

Bahagian Pengrusan Latihan (2024). Institut Latihan Kementerian Kesihatan Malaysia. https://www.moh.gov.my/index.php/pages/view/6865?mid=1662.

Biggs, J., & Tang, C. (2011). Teaching for quality at university (4th ed.). McGraw-Hill Education.

Cassandra, C., Masrek, M.N., & Aman, F. (2024). Content Validity Assessmemt of Metaverse Characteristics Instrument for High School Teachers' Adoption. *10th International Conference on Smart Computing and Communication (ICSCC),* 652-656. https://doi.org/10.1109/ICSCC62041.2024.10690594.

Chan, T. M., Paterson, Q. S., Hall, A. K., Zaver, F., Woods, R. A., Hamstra, S. J., Stefan, A., Ting, D. K., & Thoma, B. (2020). Outcomes in the age of competency-based medical education: Recommendations for emergency medicine training in Canada from the 2019 symposium of academic emergency physicians. *Canadian Journal of Emergency Medicine*, *22*(2), 204–214. https://doi.org/10.1017/cem.2019.491.

Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Method Approaches* (4th ed.). SAGE Publications.

Dayananda, P., Latte, M. V., Raisinghani, M. S., & Sowmyarani, C. N. (2021). New approach for target setting mechanism of course outcomes in higher education accreditation. *Journal of Economic and Administrative Sciences*, *37*(1), 79–89. https://doi.org/10.1108/JEAS-03-2020-0024.

Dr. Preeti Oza, D. G. P. J. (2021). Curriculum and Evaluation in Outcome-Based Education. *Psychology and Education Journal*, *58*(2), 5620–5625. https://doi.org/10.17762/pae.v58i2.2982.

Duan, P., Xiang, J., Niu, H., & Han, C. (2023). Construction of Evaluation Index for Chinese Engineering Undergraduates Based on CIPP Model. *SAGE Open*, *13*(1), 1–14. https://doi.org/10.1177/21582440221149415.

Garfinkel, E., May, R., Margolis, A., Cohn, E., Colburn, S., Grawey, T., & Levy, M. (2025). Development and Evaluation of a Novel Curriculum for Whole Blood Transfusion by Paramedics in the Prehospital Environment. *Western Journal of Emergency Medicine*, *26*(3), 535–540. https://doi.org/10.5811/westjem.19438.

Halibas, A. S., Mehtab, S., Al-Attili, A., Alo, B., Cordova, R., & Cruz, M. E. L. T. (2020). A thematic analysis of the quality audit reports in developing a framework for assessing the achievement of the graduate attributes. *International Journal of Educational Management*, *34*(5), 917–935. https://doi.org/10.1108/IJEM-07-2019-0251.

Hallikainen, J., Väisänen, O., Rosenberg, P. H., Silfvast, T., & Niemi-Murola, L. (2007). Interprofessional education of medical students and paramedics in emergency

medicine. *Acta Anaesthesiologica Scandinavica*, *51*(3), 372–377. https://doi.org/10.1111/j.1399-6576.2006.01224.x.

Hapinat, H. L. (2023). Select HEI graduate school programs in the Philippines as input to institutionalizing mandatory accreditation. *International Journal of Advanced and Applied Sciences, 10*(3), 167–182.

Harden, R. M. (2002). Learning outcomes and instructional objectives: Is there a difference? *Medical Teacher, 24(2)*, 151-155.

Harden, R. M. (2002). Outcome-based education: The future is today. *Medical Teacher, 29(7)*, 625-629.

Hidayat, R., Ayub, A. F. M., Hamid, H. S. A., & Nasir, N. (2025). Validity and Reliability of Pre-service Teachers and Teachers' Self-Efficacy: A Scoping Review. *Asian Journal of University Education*, *21*(1), 262–285. https://doi.org/10.24191/ajue.v21i1.5678.

Huang, Y., Guo, H., & Li, Y. (2023). Study on the construction and practice of blended teaching mode of emergency first aid specialty based on OBE concept. *Medicine (United States)*, *102*(28), E34252. https://doi.org/10.1097/MD.0000000000034252.

Lewis, C., Perry, R., & Hurd, J. (2004). A deeper look at lesson study. *Educational leadership*, *61*(5), 18.

Lien, Y. C., Lin, K. C. & Lin, H. R. (2010). Using experiential experts in content validity: the example of elderlu population. *The Journal of Nursing*, 57(6), 72-76.

Liu, W., Jamaludin, K. A., & Hamzah, M. I. (2025). Content Validation for a Technical Communication Instrument for Vocational College Students in China. *Asian Journal of University Education*, *21*(2), 588–599. https://doi.org/10.24191/ajue.v21i1.40.

Lynn, M. R. (1986). Determination and quantification of content validity. *Nursing Research, 35*(6), 382–385.

Misni, F., Nik Mahmood, N. H., & Jamil, R. (2020). The effect of curriculum design on the employability competency of Malaysian graduates. *Management Science Letters*, *10*(4), 909–914. https://doi.org/10.5267/j.msl.2019.10.005.

Mistamiruddin, E., & Nasri, N. M. (2024). *Challenges in Integrating Outcome-Based Education (OBE) in Higher Education Institutions : A Systematic Literature Review*. *13*(4), 1135–1150. https://doi.org/10.6007/IJARPED/v13-i4/23378.

Mohanta, J., & Mandal, S. K. Das. (2019). The Effectiveness of the Outcome-Based Curriculum Towards Improving Educational Quality for Technical Education. *Proceedings - IEEE 10th International Conference on Technology for Education, T4E 2019*, *December 2019*, 242–243. https://doi.org/10.1109/T4E.2019.00-13.

Malaysian Qualifications Framework. (2019). The Malaysian Qualifications Framework (2nd Ed.) Kuala Lumpur.

Nouraey, P., Al-Badi, A., Riasati, M. J., & Maata, R. L. (2020). Educational Program and Curriculum Evaluation Models: A Mini Systematic Review of the Recent Trends. *Universal Journal of Educational Research*, *8*(9), 4048–4055. https://doi.org/10.13189/ujer.2020.080930.

O'Sullivan, O. E., Daykan, Y., & Rotem, R. (2025). Advancing obstetrics and gynecology training: The shift toward outcome and based education, a narrative review of literature. *International Journal of Gynecology and Obstetrics*, *May*, 1–6. https://doi.org/10.1002/ijgo.70284.

Pavani, K., Vasanth Babu, K., Arun, Y., & Tarangini, K. (2020). Improved attainment through outcome based education and a case study. *Journal of Engineering Education Transformations*, *33*(Special Issue), 352–359. https://doi.org/10.16920/jeet/2020/v33i0/150208.

Polit, D.F., & Beck, C.T. (2006). The content validity index: Are yiu sure you know what's being reported? Critique and recommendations. *Research in Nursing & Health, 29(5)*, 489-497.

Polit, D.F., & Beck, C.T., & Owen, S.V. (2007). Is the CVI an acceptable indicator of content validity? Appraisal and recommendations. *Research in Nursing & Health, 30(4)*, 459-467.

Sarimah Baco, & Mohd Zaki Ishak. (2021). Kesahan dan kebolehpercayaan instrumen penilaian kendiri pembelajaran ungkapan algebra tingkatan dua. [The validity and reliability of the form two algebraic expression self- assessment learning instrument]. *Malaysian Journal of Social Sciences and Humanities (MJSSH)*, *6*(11), 127–137. https://doi.org/10.47405/mjssh.v6i11.1136

Schilling, L. S., Dixon, J. K., Knafl, K. A., Grey, M., Ives, B., & Lynn, M. R. (2007). of instruments under development. They identify the paper by Lynn (1986) as being ‘‘especially influen-. *Nursing Research*, *56*(5), 361–366.

Siau, C. S., Wee, L. H., Chan, C. M. H., Salleh, R. M., Phoa, P. K. A., Fariduddin, M. N., Ambigapathy, S., Said, Z., & Baharom, N. (2025). Development and Validation of MyQUITVAPE: A Health Education Video for Quitting Vaping among University Students. *Asian Journal of University Education*, *21*(1), 43–51. https://doi.org/10.24191/ajue.v21i1.5446.

Spady, W. G. (1994). *Outcome-based education: Critical issues and answers*. American Association of School Administrators.

Stufflebeam, D.L. (1971). The Relevance of CIPP Evaluation Model for Educational Accountability. *Journal of Research and Development in Education* (5(1): 19-25.

Sunra, L., Aeni, N., & Sally, F. H. S. (2024). A Comprehensive Exploration of Outcome-Based Education Principles and Practices. *Asian Journal of Education and Social Studies*, *50*(1), 1–9. https://doi.org/10.9734/ajess/2024/v50i11234.

Williams, B. (2009). Do undergraduate paramedic students embrace case based learning using a blended teaching approach? A 3-year review. *Australasian Journal of Educational Technology*, *25*(3), 421–439. https://doi.org/10.14742/ajet.1143.

Yuan, J., Liu, F., Gao, Y., Zhang, X., & Li, Y. (2023). Teaching Reform of Innovation Practice Course Based on OBE Concept. *2023 IEEE 12th International Conference on Engineering Education, ICEED 2023*, 135–138. https://doi.org/10.1109/ICEED59801.2023.10264047.

Zamanzadeh, V., Ghahramaniam, A., Rassouli, M., Abbaszadeh, A., Alavi-Majid, H., & Nikanfar, A. R. (2015). Design and implementation content validity study: Development of an instrument for measuring patient-centred communication. *Journal of Caring Services*, 4(2), 165-178. https://doi:10.15171/jcs.2015.017