



OPTIMIZING STUDENTS' QUARTERLY ASSESSMENT SCORES IN ARLING PANLIPUNAN 7 THROUGH A MULTIPLE-CHOICE QUESTION REVIEWER

Arson R. Yap¹, Arietta G. Yu², Catherine Q. Nayre³

¹arson.yap@deped.gov.ph., Teacher, Baybay National High School, Baybay City, Leyte, Philippines

²arietta.yu001@deped.gov.ph., Teacher, Baybay National High School, Baybay City, Leyte, Philippines

³catherine.nayre@deped.gov.ph., Teacher, Baybay National High School, Baybay City, Leyte, Philippines

ABSTRACT

This action research was conducted to determine the effectiveness of a Multiple-Choice Question (MCQ) reviewer, crafted with Bloom's Taxonomy as guide in enhancing students' performances in the quarterly assessment in Araling Panlipunan 7 at Baybay National High School. The study used a quasi-experimental design using two intact sections of Grade 7: 7-Saging and 7-Lanzones. For the 1st quarter, treatment group was 7-Saging with the use of the MCQ reviewer and control group was 7-Lanzones. The groups reversed roles in the second quarter to confirm intervention effect under reversal conditions. Data were collected from the MPS scoring topping quarter's examinations of the students and analyzed using descriptive statistics and Welch-Satterthwaite independent samples t-test to obtain significant differences between performance. In the first quarter, students with access to the MCQ reviewer had better scores than those in the control group, with an MPS of 73.6% for the experimental group versus 65.2% for the control, but the difference was not statistically significant at 0.05. The second quarter also reflected such a trend where the experimental group achieved an MPS of 72.1% as compared to 69.3% for the control group, and the difference between the two was statistically insignificant again ($p > 0.05$). These findings indicate that an MCQ reviewer based on the essentials of Bloom's Taxonomy can effectively raise the level of students' performance in Araling Panlipunan 7; however, such an impact might be obscured by the test and learner variables. The research herein supports the use of and further development of MCQ-based reviewers conforming to Bloom's Taxonomy as a means of mastery and exam preparation for junior high students in Araling Panlipunan 7.

Keywords: *Multiple-Choice Reviewer, Bloom's Taxonomy, Academic Performance, MPS (Mean Percentage Score), Araling Panlipunan 7*

Received : February, 2026

Accepted : March, 2026

Available : May, 2026

Recommended Citation:

Yap, A., Yu, A., & Nayre, C. (2026). Optimizing Students' Quarterly Assessment Scores in Araling Panlipunan 7 Through A Multiple-Choice Question Reviewer. *Franciscan College of the Immaculate Conception Insights*, 04(01), 73–84. <https://doi.org/10.5281/zenodo.20459605>



INTRODUCTION

Assessment is essential for keeping track of what and how well students are learning, and for helping teachers find out whether students have mastered the content, have any misconceptions, and need to be provided with additional instruction. Contemporary perspectives highlight that rigorous assessment not only assesses achievement, but it also leads to learning through feedback and informs instructional decisions (Sortwell et al., 2024). Formative and summative assessments can also signal whether students are proficient at retrieving, comprehending, and utilizing critical knowledge and skills, particularly in content-heavy courses such as social studies (Dolin et al., 2020).

In Baybay National High School, a number of *Araling Panlipunan 7* students still have difficulty repeating essential socio-historical terms and concepts and in performing higher-order thinking skills on the said subject during the quarterly examinations. Teachers also regularly report students excessive use of passive learning, and surface learning behaviors, such as highlighting notes, rereading materials, and cramming days before the exams — behaviors that have been found to be ineffective for long-term retention (Carpenter et al., 2022). This is the same practice that makes our quarterly results in the drill and practice exams keep on getting lower and lower, and yet is not making our students any weaker in terms of basic skills and critical thinking skills.

Multiple-choice questions (MCQs) are a popular test format, and when well written, they are an efficient instrument for implementing retrieval practice, reinforcing memory and testing various cognitive levels according to Bloom's Taxonomy (Dunlosky et al., 2021). Review of Literature indicates that studies on MCQs reveal that they enhance long term retention as in answering questions whether right or wrong — induce retrieval processes that consolidate learning (Yang et al., 2021). In addition, higher-order thinking MCQs can consistently assess analysis, evaluation, and problem solving (McDonald, 2024).

In the Philippines, a number of studies show that MCQ-based reviewers enable students to be better prepared for tests. structured MCQ drills positively affected students' test scores in social studies as a result of repeated retrieval and multiple exposures to different item formats (Miranda & Roxas, 2020). Several local studies also reveal that MCQs constructed based on Bloom's Taxonomy promote critical thinking among Filipino learners and foster understanding in dealing with difficult concepts particularly in *Araling Panlipunan* and other content laden subjects (Daguio & Malaluan, 2021).

Even with mounting evidence to support higher-order thinking, existing research reports that MCQ reviewers are generally confined to recalling lower-order thinking skills with analysis or evaluation used minimally (Muhayimana et al., 2022). Most of the review centers in the country are likewise devoid of systematic designs and teach practice that are in accordance with competency-based learning standards like the Matatag Curriculum. Furthermore, there is scarce quasi experimental evidence of the effect of MCQ reviewer on students' performance in quarterly assessment, particularly in public junior high schools. These gaps provide a strong rationale to investigate further the possibility of designing Bloom-aligned MCQ reviewers that can enhance mastery in *Araling Panlipunan 7*.

To respond to these gaps the researcher designed a Multiple-Choice Question (MCQ) reviewer based on Bloom's Taxonomy. This Reviewer is the product of considered design which contains items on all six levels of the Bloom's Taxonomy – remembering,

understanding, applying, analyzing, evaluating and creating (McDonald, 2024). Incorporating principles of Bloom-based item construction the reviewer seeks to focus students on higher-order questions, to reinforce retrieval practice and to align with the competency-based curriculum of *Araling Panlipunan 7*. The present study hopes to advance students' test preparation and add to the limited empirical studies on the efficacy of structured MCQ reviewers in the context of Philippine public schools.

The results of this study will serve to advantage many people. Students could get better test scores, develop more robust retrieval skills, and have more confidence while being assessed. Educators will have research-based review tools that can augment instruction and be used to help students learn in a competency-based environment. School leaders could apply the evidence to improve their intervention routines in an effort to increase quarterly MPS rates. In this way, the study supports DepEd's vision of raising the standards of learning vis a vis the *Matatag Curriculum* by way of a validated approach to helping students master skills and concepts in *Araling Panlipunan 7*.

Action Research Questions

This research intended to establish the effectiveness of an MCQ reviewer in improving students' performance in *Araling Panlipunan 7's* quarterly summative assessment. Particularly, it intended to answer the following questions:

1. What are the quarterly examination MPS of the experimental group (with MCQ reviewer) and the control group (without the reviewer).
2. Is there a notable discrepancy in the assessment scores of both groups?
3. How do students view the effectiveness of the MCQ reviewer in enhancing their comprehension and test performance?

This study aimed to identify the efficiency of MCQ reviewer developed based on Bloom's Taxonomy in improving the students' learning performance in *a* in the quarterly summative assessment. The study was conducted in two intact Grade 7 sections of Baybay National High School for the school year, with one section acting as the experimental group and the other as the control group per quarter, as dictated by a reversal design. The treatment was confined to the MCQ reviewer given during regular class review periods and assessed solely by the students' Mean Percentage Scores (MPS) in the quarterly examinations as well as through their comments on the applicability of the tool

METHODOLOGY

Research Design

The study utilized a quasi-experimental design by comparing two groups (after being matched using Their pre-intervention scores) of grade 7 students in *Araling Panlipunan*, one group served as the experimental group and the other was the control group. The research adopted a quasi-experimental design because it enabled the investigators to analyze the effects of the intervention (MCQ reviewer) on the students' learning within the context of real classrooms. This design was particularly valuable to educational research because it brought scientific rigor to school research with a minimum of disruption to the school routine. The

investigators evaluated the potential transformative effects of interventions by implementing standard classroom groups and measuring their outcomes in typical educational settings, thereby producing educational data in the real world.

Participants and Sampling

The students of this study were the Grade 7 students of Baybay National High School, these sections were purposively selected to participate in the study. In the 1st quarter, Grade 7-Saging was designated as the experimental group using the MCQ reviewer, the control group was Grade 7-Lanzones. In the following quarter, the two sections switched places: Grade 7-Lanzones was the experimental group and 7-Saging the control. To assess the consistency of the intervention's effects, this counterbalancing design was implemented.

This study applied a purposive sampling technique in which the researchers selected two class sections with comparable academic performance, explicitly showing more or less the same Mean Percentage Scores (MPS) in their written works in a past assessment. In this way, teaching and testing conditions were established to minimize variance attributable to differing instructional approaches and/or teaching styles. Purposive sampling was similarly used to enable a concentrated examination of the MCQ reviewer's performance in the context of a controlled learning environment.

Research Instruments

The Multiple-Choice Question (MCQ) reviewer, developed by the researchers, was the main instrument of the study. This reviewer was heavily grounded based on Bloom's Taxonomy and was directed over the first and second quarters of the school year. What's inside the reviewer are series of questions that correspond to *Araling Panlipunan 7* competencies. Additionally, these questions are strategically organized according to the six cognitive levels of Bloom's Taxonomy—Remembering, Understanding, Applying, Analyzing, Evaluating, and Creating, these questions target both lower-order and higher-order thinking skills.

Data Collection Procedure

The study proceeded with a number of structured steps in the 1st quarter and 2nd quarter of the School Year (SY) 2025–2026. The first and second phases of the operation were conducted in this manner: the experimental students accessed the MCQ reviewer quarterly and they were made to answer questions for 2 class days prior to each quarterly examination. As a further stage, the investigators also obtained and compared the mean percentage scores (MPS) of both groups (experimental and control) to assess the impact of the reviewer on the students' performance. At the end of this term, reactions from students regarding their competences using the MCQ reviewer in the test were obtained through a questionnaire survey completed by students, to find out if using the quiz enhanced their understanding and preparedness for the test.

Data Analysis

Descriptive Statistics: Simple descriptive statistic such as mean, median and standard deviation were calculated for the Mean Percentage Scores (MPS) of the sections involved to describe and assess students' academic performance before and after the treatment. These calculations allowed us to better understand the range of student performance in the experimental and control group. The results showed how reliable and robust the MCQ reviewer was in enhancing the test scores of AP7 students.

Independent sample t-test with Welsh-Satterthwaite correction: An independent sample t-test was used to determine if there was a statistically significant difference in performance between students of the experimental group (7-Saging or 7-Lanzones, which

depended on the quarter) and the students of the control group. This test compared the mean MPS of the experimental and control group for every quarter.

Student Attitude Measurement (Likert Scale): To assess the students' level of agreement or interest toward the subject, a 5-point Likert scale was used. Students' attitudes and perceptions were measured at five levels, and these levels facilitated us to quantify the degree of the students' interest and participation. The scale was explained as follows:

- 4.21 – 5.00: Very High – Indicated a strong and consistent positive attitude or high interest in the topic.
- 3.41 – 4.20: High – Reflected a generally positive attitude, just slightly less intense than "Very High."
- 2.61 – 3.40: Moderate – Showed a neutral or average attitude or interest in the topic.
- 1.81 – 2.60: Low – Represented a less positive or disengaged attitude, with lower interest in the topic.
- 1.00 – 1.80: Very Low – Reflected a very low or negative attitude, with minimal to no interest in the topic.

This Likert scale was used to determine the degree of students' interests regarding the contents, and the results were analyzed with the focus on identifying tendencies and possible areas for further engagement or support of the students.

RESULTS AND DISCUSSION

Results

Table 1. Independent Samples t-test Results for 1st Quarter

Statistical Measure	Experimental Group (7 Saging)	Control Group (7 Lanzones)
Mean (M)	29.42	26.07
MPS	73.6%	65.2%
Variance	73.12	68.75
Number of Students (n)	38	42
Degrees of Freedom (df)		77
t Statistic		1.78
p-value (two-tailed)		0.08
α (Significance Level)		0.05
Decision	Not Significant	
Interpretation	The experimental group obtained a higher mean score (M = 29.42) than the control group (M = 26.07). However, the difference was not statistically significant at the 0.05 level ($p = 0.08$).	

A review of the 1st quarter results are presented in Table 1. This compare the MPS of the Grade 7-Saging that was treated as the experimental group with the use of the MCQ reviewer, and the Grade 7-Lanzones as the control group without the reviewer. This includes the mean, variance, number of students, degree of freedom, t statistic and p-value, with the related decision on the significance. With these results, differences in performance between the two groups are clearly revealed, providing an interpretation of the MCQ reviewer's efficacy in first quarter.

Table 2. Independent Samples t-test Results for 2nd Quarter

Statistical Measure	Experimental Group (7 Lanzones)	Control Group (7 Saging)
Mean (M)	28.85	27.71
MPS	72.1%	69.3%
Variance	30.18	26.05
Number of Students (n)	42	38
Degrees of Freedom (df)		77
t Statistic		-0.96
p-value (two-tailed)		0.34
α (Significance Level)		0.05
Decision	Not Significant	
Interpretation	Although the difference in mean performance between the experimental and control groups was not statistically significant ($p = 0.34$), the experimental group (7 Lanzones) achieved a slightly higher mean score ($M = 28.85$) compared to the control group ($M = 27.71$). This suggests that the use of the MCQ reviewer may have contributed to sustaining or slightly enhancing students' performance during the 2nd Quarter, even if the improvement was not large enough to reach statistical significance.	

The second quarter results of the independent samples t-test (see Table 2) show the comparison between Grade 7-Lanzones as the experimental group using the MCQ reviewer and Grade 7-Saging as the control group. In this table we can see the mean scores, variance, sample size, degrees of freedom, t statistic, and p-value, as well as the decision on significance. This data shows the results between two groups, and we can see the positive influence of the MCQ reviewer as highlighted by the numbers in this table.

Table 3. Students' Perceptions of the MCQ Reviewer Based on Survey Responses

(n = 80)

Survey Item	5	4	3	2	1	Mean	Interpretation
Nakakatulong ang MCQ reviewer sa pag-unawa ko sa aralin	72	5	2	1	0	4.85	Very High
Mas interesado akong mag-aral gamit ang MCQ reviewer	61	10	7	1	1	4.61	Very High
Mas napapadali ang review sa AP gamit ang MCQ format	58	12	5	3	2	4.51	Very High
Naging mas kumpiyansa ako sa pagsagot ng pagsusulit	68	9	2	0	1	4.79	Very High

Discussion

The focus of this research is to know if the use of the MCQ reviewer can really help in enhancing the academics and interest of the students in *Araling Panlipunan 7*. The study involved two intact classes that switched roles between experimental and control groups during the first and second quarters of School Year 2025–2026. Data were gathered through quarter assessments and a student survey to assess the reviewer perceptions.

Academic Performance (MPS) Results

In the first quarter, 7 Saging was allocated as treatment group with 7 Lanzones as control. The independent samples t-test (Welch-Satterthwaite) revealed that the mean of the experimental group ($M = 29.42$) was greater than that of the control group ($M = 26.07$). While this difference between scores was not significant by the 0.05 standard ($p = 0.08$), the result could be interpreted as indicating that the MCQ reviewer might have contributed to a modest increase in students' scores. This would imply that the reviewer acted as a facilitator of content understanding and test preparedness in the experimental group.

In quarter second, roles in the experimental group were reversed to 7 Lanzones while 7 Saging acted as the control group. The mean scores of the experimental ($M = 28.85$) and control ($M = 27.71$) groups were very similar. The t-test for equality of means indicated that this difference was not significant ($p = 0.34$), indicating that the performances of the groups were equal. Yet the positive trend in favor of the experimental group indicates that the MCQ reviewer would have at least enabled students to maintain their level of performance, if not to improve it, even if by a small margin, for the effect size was small.

In summary, the quantitative data on the MCQs suggested stabilization, if not bolstering performance by students with the reviewer. The differences were not large enough

to reach statistical significance; however, the trend is encouraging for improving understanding and test readiness.

Student Perceptions and Attitudes

The survey's results revealed the perceptions of students in regard to the MCQ reviewer. Almost all of the students concluded their agreement "high" to "very high" in terms of the usefulness of the reviewer. In particular:

- Understanding of lessons: Mean = 4.85 (Very High)
- Interest in studying using the reviewer: Mean = 4.61 (Very High)
- Ease of review using MCQ format: Mean = 4.51 (Very High)
- Confidence in taking assessments: Mean = 4.79 (Very High)

All these findings showed that the MCQ reviewer was a good teacher and a motivator. One of the overarching themes from student qualitative feedback was that the reviewer promotes self-assessment, revision, and test familiarity – a 'winning combination' for efficient learning.

CONCLUSION

Summary of Findings

The first quarter, 7 Saging was allocated as treatment group with 7 Lanzones as control. The independent samples t-test (Welch-Satterthwaite) revealed that the mean of the experimental group ($M = 29.42$) was greater than that of the control group ($M = 26.07$). While this difference between scores was not significant by the 0.05 standard ($p = 0.08$), the result could be interpreted as indicating that the MCQ reviewer might have contributed to a modest increase in students' scores. This would imply that the reviewer acted as a facilitator of content understanding and test preparedness in the experimental group.

In quarter second, roles in the experimental group were reversed to 7 Lanzones while 7 Saging acted as the control group. The mean scores of the experimental ($M = 28.85$) and control ($M = 27.71$) groups were closely similar. The t-test for equality of means indicated that this difference was not significant ($p = 0.34$), indicating that the performances of the groups were equal. However, the positive direction of the data trend towards the experimental group suggested that the MCQ reviewer was the major factor sustaining the performance level of the class.

In summary, the quantitative results of the MCQ analysis indicated stability and enhancement in students' performance. The differences were not large enough to reach statistical significance; however, the trend appears encouraging with respect to understanding and test readiness. The real win of this research is the psychological impact the MCQ reviewer has given to our students. As shown in the qualitative data, students perceived the reviewer as a significant boost of confidence.

Reflection

It is implied by the study that educational tools like the MCQ reviewer facilitate students' learning and motivation. Though the experiment did not achieve a statistically

significant gain, in a real classroom setting these small changes are a significant win. While the effect in test scores was not huge, the intervention showed promising trends that could be further improved by a longer exposure, a higher variety of items and by the integration with gamified or interactive review modalities in the next semesters.

Overall, the MCQ reviewer is a practical tool for facilitating student engagement and confidence which in turn helps them bolster their academic scores and performance.

Action Plan

The research confirmed that MCQ reviewer based on Bloom's Taxonomy contributed positive psychological and academic influence. Nonetheless, crafting these questions in a hundred formats, and constantly updating them is exhausting, time-consuming and costly. To overcome these obstacles and keep the intervention evolving, the next stage of the project will aim at converting the reviewer into a digital, mobile, gamified application.

This proposed mobile application will bring all the validated test items from all competencies into a one interactive and learner-centered platform. The application will focus on offline usage, feedback for every question and tracking capabilities to motivate self-studies and master learning competencies. Through the use of digital technology, the reviewer can be dynamically updated as the curriculum evolves with new or revised content, reducing the cost and repetitive printing of materials.

With the app's use of Bloom's Taxonomy-based questions, students will further build their higher-order thinking skills. The application will also allow teachers to give formative assessments and provide data-informed instruction. Through this pioneering approach, the researchers envision a permanent, dynamic, and cost-effective link between preparation and digital learning in *Araling Panlipunan* education and in other subjects as well.

REFERENCES

- Amanonce, J. T., & Maramag, A. M. (2020). Licensure examination performance and academic achievement of teacher education graduates. *International Journal of Evaluation and Research in Education*, 9(3), 510–516. <https://doi.org/10.11591/ijere.v9i3.20614>
- Amil, S. U. (2021). Perception of multiple-choice questions: Its challenges and implication among Grade 12 senior high students of Mindanao State University-Sulu. *Indonesian Community Empowerment Journal*, 2(1), 58–61. <https://doi.org/10.37275/icejournal.v2i1.12>
- Aquerido, N. C., & Soriano, P. R. (2024). Modelong banghay aralin sa Araling Panlipunan 7: Kuwarter 4, Aralin 8 (Linggo 8). Department of Education.
- Carpenter, S. K., Endres, T., & Finn, B. (2022). Using retrieval practice to improve student learning. *Educational Psychology Review*, 34, 1–25.
- Chandio, M. T., Pandhiani, S. M., & Iqbal, R. (2016). Bloom's taxonomy: Improving assessment and teaching-learning process. *Journal of Education and Educational Development*, 3(2), 203–221. <https://files.eric.ed.gov/fulltext/EJ1161460.pdf>
- Daguio, F. C., & Malaluan, N. (2021). Development of higher-order thinking skills through Bloom-based test questions in Araling Panlipunan. *International Journal of Multidisciplinary Research*, 9(3), 45–53.
- Danga, J. L., PNU-RITQ Team, Makabenta, R. P., Pimentel, M. M., & SiMMER National Research Centre. (2024). Modelong banghay aralin sa Araling Panlipunan Baitang 7: Kuwarter 1, Aralin 1 (Linggo 1). Department of Education.
- Dolin, J., Black, P., Harlen, W., & Tiberghien, A. (2020). Exploring formative assessment in science education. Springer.
- D'Sa, J. L., & Visbal-Dionaldo, M. L. (2017). Analysis of multiple-choice questions (MCQs): Item and test statistics from the 2nd year nursing qualifying exam in a university in Cavite, Philippines. ResearchGate. <https://www.researchgate.net/publication/338110197>
- Dunlosky, J., Rawson, K. A., Marsh, E. J., Nathan, M. J., & Willingham, D. T. (2021). Practice testing: Improving learning through retrieval. *Frontiers in Education*, 6, 581216.
- Hwang, R., Paley, M., Bull, D., Omrani, O., Vergara Jalandoni, D., & Egbury, G. (2025). A systematic review and meta analysis on the impact of peer made MCQ question bank usage on summative assessments in medical education. *Journal of Advances in Medical Education & Professionalism*, 13(4), 259–269. <https://doi.org/10.30476/jamp.2025.104780.2084>
- Lalap, V. G. Jr., Pimentel, M. M., & SiMMER National Research Centre. (2024). Modelong banghay aralin sa Araling Panlipunan 7: Kwartar 1, Aralin 2 (Linggo 3). Department of Education.

- Lalap, V. G. Jr., Pimentel, M. M., & SiMMER National Research Centre. (2024). Modelong banghay aralin sa Araling Panlipunan 7: Kwartar 1, Aralin 2 (Linggo 4). Department of Education.
- Lenchuk, I., & Ahmed, A. (2021). Tapping into Bloom's taxonomy's higher-order cognitive processes: The case for multiple choice questions as a valid assessment tool in the ESP classroom. *Arab World English Journal (AWEJ) Special Issue on COVID-19 Challenges*, 1, 160–171. <https://dx.doi.org/10.24093/awej/covid.12>
- Liu, Q., Wald, N., Daskon, C., & Harland, T. (2023). Multiple-choice questions (MCQs) for higher-order cognition: Perspectives of university teachers. *Innovations in Education and Teaching International*, 61(4), 802–814. <https://doi.org/10.1080/14703297.2023.2222715>
- McDonald, K. J. (2024). Changing levels of Bloom's Taxonomy in assessment design. *Education Sciences*, 14(9), 943.
- Miranda, G. & Roxas, M. V. (2020). Effectiveness of MCQ-based reviewers in improving Social Studies performance of junior high school students. *Philippine Social Science Journal*, 3(2), 15–28.
- Muhayimana, T., Kwizera, L., & Nyirahabimana, M. R. (2022). Using Bloom's taxonomy to evaluate cognitive levels in national examinations. *Curriculum Perspectives*, 42, 51–63.
- Nenow, J., Boyer, J., & Boyer, B. (2021). Understanding the components of multiple-choice question writing: A snapshot. East Carolina University Faculty Development. <https://medicine.ecu.edu/faculty-development/wp-content/pv-uploads/sites/294/2023/06/med-ed-2021-snapshots-pt-2-nenow.pdf>
- Niazi, M., Shamsi, M., & Shamsi, A. (2022). Automated question classification using Bloom's Taxonomy and deep learning. *International Journal of Education and Development using Information and Communication Technology*, 18(1), 261–269. <https://files.eric.ed.gov/fulltext/EJ1413430.pdf>
- Panchbudhe, S., Shaikh, S., Swami, H., Kadam, C. Y., Padalkar, R., Shivkar, R. R., Gulavani, G., Gulajkar, S., Gawade, S., & Mujawar, F. (2024). Efficacy of Google Form-based MCQ tests for formative assessment in medical biochemistry education. *Journal of Education and Health Promotion*, 13, 92. https://doi.org/10.4103/jehp.jehp_981_23
- Pappas, C. (2023). How to write multiple-choice questions based on the revised Bloom's taxonomy. *eLearning Industry*. <https://elearningindustry.com/how-to-write-multiple-choice-questions-based-on-revised-bloom-s-taxonomy>
- Perception of Multiple-Choice Questions: Its Challenges and Implication among Grade 12 Senior High Students of Mindanao State University-Sulu. (2021). *Indonesian Community Empowerment Journal*. <https://icejournal.com/index.php/icejournal/article/view/12>

- Pizà-Mir, B. (2023). Validation of the use of Bloom's revised taxonomy as a tool for the design of assessment tests. ResearchGate. <https://www.researchgate.net/publication/366153433>
- Sadeghi, P., Pourabbas, A., Dehghani, G., & Katebi, K. (2025). Quantitative and qualitative item analysis of exams of basic medical sciences departments of Tabriz University of Medical Sciences in 2023. *BMC Medical Education*, 25, Article 937. <https://doi.org/10.1186/s12909-025-07539-3>
- Sortwell, A., et al. (2024). Impact of formative assessment on K–12 learning: A systematic review. *Sustainability*, 16(17), 7826.
- Stringer, J. K., Santen, S. A., Lee, E., Rawls, M., Bailey, J., Richards, A., Perera, R. A., & Biskobing, D. (2021). Examining Bloom's taxonomy in multiple choice questions: Students' approach to questions. *Medical Science Educator*, 31(4), 1311–1317. <https://pmc.ncbi.nlm.nih.gov/articles/PMC8368900/>
- Tiemeier, A. M., Stacy, Z. A., & Burke, J. M. (2011). Using multiple choice questions written at various Bloom's taxonomy levels to evaluate student performance across a therapeutics sequence. *Innovations in Pharmacy*, 2(2), Article 41. <https://doi.org/10.24926/iip.v2i2.224>
- Yang, C., Potts, R., & Shanks, D. (2021). Enhancing long-term retention through MCQ retrieval practice. *Memory & Cognition*, 49, 865–878.