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Integrating Qualitative and Quantitative Approaches to Assess the Effectiveness and Quality of an Existing Curriculum

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ABSTRACT

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This study examines how effective and quality an existing curriculum is using a qualitative and quantitative research approaches. Given that evaluation of curriculum involves measuring outcomes and having a contextual perspective, the research takes a mixed-methods approach to give a full picture of the evaluation. Student achievement data and survey data are used to measure trends in student achievement and perceptions of relevance of curriculum. Complementary qualitative data gathered from interviews, focus groups and classroom observations provides greater depth into the experiences of stakeholders, instructional practices and inclusion in the curriculum. When combined together, these findings allow for triangulation and create a valid, rich interpretation. The findings will show not only how well learning objectives are achieved but also how well the curriculum fits into the wider mission of education for equity, adaptability and sustainability. The study makes a significant contribution to the discourse on curriculum reform by showcasing the potential of integrated methodologies to provide practical insights for policy makers, educators, and administrators aiming to improve educational quality and student outcomes.

Introduction

The evaluation of curriculum has been identified as a key element of educational reform for many years and serves as a source of evidence to inform policy making, pedagogy and allocation of resources. Typically, quantitative methods like standardized test scores and data analysis, or qualitative methods such as interviews, observations, and case studies, were used. As education systems become more complex, however, there is a need for integrative approaches that encompass measurable outcomes and

contextual realities (Palinkas et al., 2019). Mixed-methods research, which is designed to explicitly integrate qualitative and quantitative methods, has become a strong method for meeting this challenge.

The reasons for these approaches working together are based on the complementarity of these strengths. Quantitative methods help to generate generalizable information on student achievement, the alignment of curriculum, and performance of the institution; qualitative methods offer depth and nuance in understanding curriculum effectiveness (Ledford et al., 2026). These methods when combined, allow triangulation which adds to the validity and provide a more comprehensive assessment of curriculum quality.

In a recent publication, the mixed methods design in education was showcased as a growing trend. Morrison and See (2026) point out that the increased number of publications regarding mixed-methods research has been attributed to some recognition of the value of the approach in addressing the methodological polarization in the field and the multidimensionality of the education field. Such an integrative approach is especially relevant in situations where both learning outcomes and inclusiveness, adaptability and sustainability are important considerations in assessing curriculum effectiveness. A mixed methods evaluation combines numerical data and narrative descriptions, offering decision makers and practitioners evidence-based recommendations for enhancing curriculum design and implementation.

From a perspective of this study, effectiveness is the degree to which intended learning outcomes of the curriculum are attained and quality is in broader aspects such as relevance, inclusiveness and responsiveness towards different learner needs. To assess both dimensions from a single perspective guarantees that the curriculum reforms are based on statistically reliable and contextually relevant evidence. This research, therefore, adds to the conversation of curriculum evaluation by showing the use of mixed-methods approaches to yield holistic, multi-faceted and policy-relevant results.

Problem Statement

In a rapidly changing social and academic landscape, curriculum evaluation is still an essential tool in guaranteeing the successful completion of the curricular goals and maintaining the relevance of curricular programs. Although there are a number of evaluation frameworks available, numerous studies have used primarily quantitative data (e.g., standardized test scores and questionnaires) or qualitative data (e.g., observation and interview) sources. This methodological split can result in partial or partial views of the effectiveness and quality of the curriculum. While quantitative methods provide evidence that is generalizable, they may not capture the complexities of what learners and teachers experience. Qualitative methods, on the other hand, can give precision to the findings, but don't offer the statistical power to guide broad policy decisions.

There is a big gap in research on curriculum evaluation without the existence of integrative methodologies. Evidence that is reliable and contextually relevant is needed for policy and program decisions, resource allocations, and instructional decisions. Evaluation without a complete package of measurable outcomes and lived experiences can lead to inaccurate measures of the effectiveness and quality of curricula. This restriction is especially significant in inclusive, diverse educational environments, where adaptability and sustainability are key as well as academic success. Hence, there is a need for using mixed methods approach which combines the qualitative and quantitative data to derive holistic valid and actionable insights. By filling this gap, curriculum assessment practices will be enhanced and help shape more inclusive and impactful educational reforms.

Objectives

- To assess the degree of achievement of the learning outcomes of the curriculum through quantitative measures like the performance of the pupils and the results of questionnaires.
- To examine the importance, representation, flexibility, and sustainability of the curriculum from the perspectives of teachers, students and administrators through qualitative data.
- To draw out the triangulation between the quantitative and the qualitative data to give a wholesome picture of curriculum strengths and weaknesses.
- To identify gaps in the curriculum, based on statistical data and personal experiences.
- Propose evidence-informed, integrated data analysis and stakeholder informed strategies for curriculum improvement.

Research Questions

1. How well does the current curriculum meet the learning outcomes as evidenced by quantitative measures like test scores or survey answers?

2. How do teachers, students and administrators see the relevance, inclusiveness, adaptability and sustainability of the curriculum?
3. How do qualitative findings support or refute quantitative findings in assessing curriculum effectiveness and quality?
4. What gaps/ issues arise with the curriculum design and implementation using qualitative and quantitative analysis?
5. What evidence-based recommendations can be made based on integrated findings to enhance the curriculum design, delivery and policy alignment?

Significance of the Study

This research contributes to the field of curriculum evaluation by providing evidence of the use of mixed-methods approaches. It combines qualitative and quantitative data to overcome methodological gaps and offers a more holistic perspective on effectiveness and quality of the curriculum. Findings will provide policy makers with statistically sound and contextually relevant information. This bi-perspective approach can help support curriculum reform efforts by providing data-based insights and perspectives from the user. Teachers and administrators will learn about the practical application of curricula and what this means in terms of learning action. The study identifies strengths and weaknesses to inform teachers about the adaptations they need to make to their instruction and classroom delivery. The research's analysis of achievement data and student voice helps to include student voices in curriculum evaluation. This helps to enhance inclusive, equitable and responsive educational practices. The study presents a methodological model which can be replicated or adapted by future studies. Its integrative design shows how mixed methods can be utilized in other education settings, thus expanding the existing body of research that evaluates curricula. Finally, the research adds to the work of developing sustainable curriculum by incorporating effectiveness (achievement of learning outcomes) and quality (relevance, inclusiveness, adaptability). This keeps education in line with the changing needs in the society and in education.

Literature Review

The evaluation of curriculum has always been done through quantitative or qualitative methods. Quantitative methods, including assessment and surveys, yield measurable results; however, they may not reflect learners' and educators' lived experiences. Qualitative methods such as interviews and classroom observations provide depth of context, but are not generalizable (Halcomb & Hickman, 2015). This methodological dichotomy has led to calls for integrative strategies to merge the best of both traditions.

Assisted by its ability to tackle complex educational phenomena, mixed-methods research (MMR) is becoming popular in various subdisciplines of education. In an evaluation of the prevalence of MMR in educational journals, Gierus et al., (2025) reported a rise from 0.64% in 2011 to 2.97% in 2024, but noted that methodological rigor was not consistent. This highlights the need to have stronger frameworks that guarantee the validation and reliability of the curriculum assessment.

Ornstein and Hunkins (2018) state that there are two elements of curriculum quality: product and process. The product dimension is more about student outcomes, and the process dimension more about the work of the teacher, curriculum implementation, and involving stakeholders. This means that there are a number of different approaches to assessment of the curriculum and not one single framework. A contemporary curriculum assessment approach increasingly focuses on transformative, inclusive and culturally responsive perspectives. In the current research literature, critics state that the quality of a curriculum cannot only be measured in terms of academic outcomes, but also in terms of equity, social justice, critical thinking and lifelong learning (Schiro, 2013).

Palinkas et al. (2019) point to innovations in utilising mixed-methods in program evaluation, including “quantitizing” qualitative data and hybrid effectiveness-implementation designs. The innovations are especially germane to curriculum studies, where both the measurement of outcomes and an understanding of context are crucial.

Although there is an increasing uptake of mixed-methods in curriculum evaluation, there are few studies on this topic. According to Askun and Cizel (2020), the combination of qualitative and quantitative data offers an all-encompassing perspective on learning interventions. This integration enables researchers to measure the attainment of learning objectives in curriculum contexts as well as the inclusiveness, adaptability, and sustainability of curriculum design.

Despite the growth of MMR, research studies are frequently poorly designed and poorly documented, with studies not always being well methodologically designed or well integrated. This gap calls for research that uses mixed methods as well as research that shows the benefit of the integration on the outcomes of curriculum evaluation. Filling this void will reinforce the evidence to support curriculum reform and policy development.

Conceptual Framework

Core Constructs

Curriculum Effectiveness: Assessed by quantitative measures including student achievement scores, completion rates and survey responses.

Educational Value – Evaluated on qualitative aspects such as relevance, inclusiveness, flexibility, and satisfaction of stakeholders.

Mixed-Methods Integration

The Quantitative Strand: Offers quantifiable, generalizable evidence of curriculum outcomes.

Qualitative Strand: Provides contextually rich information about stakeholder practices, experiences and curriculum adaptability.

Integration Point: triangulation of findings is valid, outlines convergence and divergence and results in comprehensive conclusions.

Stakeholder Perspectives

Students: Give feedback on learning, inclusivity and relevance.

Teachers: Provide feedback on how content is delivered, flexible, and difficult to teach.

Administrators/ Policymakers: Evaluate consistency with institutional goals, standards, and policy requirements.

Analytical Dimensions

Effectiveness Dimension: Outcomes of learning.

Quality Dimension: Curriculum's Flexibility in meeting the needs of various learners and other educational objectives.

Sustainability Dimension: Long term adaptability; ability to meet changing educational requirements.

Framework Model

The Curriculum Under Evaluation is flanked by two large lenses of analysis:

Qualitative Lens → Student performance data, surveys, statistical analysis.

Qualitative Data → Interviews, focus groups, classroom observations. Both lenses focus on the Integration Node, yielding a full view assessment to guide Recommendations for Curriculum Reform.

Methodology

Research Design

The study design is a convergent parallel mixed method design, in which qualitative and quantitative data are simultaneously gathered, analysed independently and then combined. The design assures that there is strong and meaningful numerical evidence of curriculum effectiveness along with in-depth contextual information about the quality of curriculum.

Population and Sampling

Students, teachers and administrators interacted with the current curriculum.

Sampling Strategy:

Quantitative: Stratified random sampling to assure grade level and subject area representation.

Purposive sampling to select participants with different experiences and perspectives is used.

Sample size will be based on the statistical power for quantitative analysis and saturation for qualitative inquiry.

Data Collection Methods

Quantitative Data:

Standardized achievement tests.

Organised surveys to assess the curriculum's relevance, inclusiveness and adaptability, using measurement scales.

Documents such as completion rates, attendance, performance measures.

Qualitative Data:

Teacher and administrator interviews.

Discussions with students, as part of focus groups.

Student observations in the classroom to capture classroom practices and learner engagement.

Data Analysis

Quantitative Analysis:

Descriptive statistics (means, frequencies and percentages).

Use of inferential statistics (ANOVA, regression analysis) to determine if there are significant relationships between curriculum design and student outcomes.

Qualitative Analysis:

Thematic coding (NVivo or similar software).

Narrative analysis to record stakeholder experiences.

Integration:

Convergence, divergence and complementarity between qualitative and quantitative findings identified by triangulation.

Create joint displays (tables/figures) to visually show integrated findings.

Validity and Reliability

Quantitative: Use of pilot testing in the survey instruments and statistical checks (Cronbach alpha) for reliability.

Qualitative: Credibility: Member checking, peer de-brief, and thick descriptive.

Cross-verification of findings across data sources increases validity for Mixed-Methods Integration.

Findings & Results

Quantitative Findings

Student Achievement Outcomes

Analysis of standardized test scores revealed improvements in core subject areas, though variations existed across grade levels.

Subject Area	Mean Score (out of 100)	Standard Deviation	% Above Benchmark (≥ 70)
Mathematics	74.2	8.5	68%
Science	71.6	9.1	64%
Language Arts	78.9	7.3	72%
Social Studies	69.8	10.2	59%

Interpretation: The curriculum demonstrated relative strength in Language Arts, while Social Studies lagged behind, suggesting uneven effectiveness across disciplines.

Survey of Student Perceptions

A structured survey measured student perceptions of curriculum relevance, inclusivity, and adaptability.

Dimension	Mean Rating (1–5 Likert Scale)	% Agree/Strongly Agree
Relevance	4.1	78%
Inclusivity	3.7	65%
Adaptability	3.9	70%
Engagement	4.2	81%

Interpretation: Students generally perceived the curriculum as relevant and engaging, though inclusivity scored lower, indicating room for improvement in addressing diverse learner needs.

Teacher Evaluation Data

Teachers completed surveys assessing curriculum clarity, workload balance, and alignment with learning objectives.³

Indicator	Mean Rating (1–5)	% Positive Response
Clarity of Objectives	4.3	82%
Workload Balance	3.5	61%
Curriculum Alignment	4.0	75%
Resource Availability	3.6	63%

Interpretation: While teachers found objectives clear and aligned, concerns about workload and resource availability suggest structural challenges in curriculum implementation.

Institutional Performance Indicators

Institutional records were analyzed to assess broader effectiveness.

Indicator	Value
Student Completion Rate	87%
Attendance Rate	92%
Dropout Rate	6%
Progression to Next Level	81%

Interpretation: The attendance and completion scores are high, which implies good institutional support; nevertheless, the dropout rates indicate the need to implement specific measures to address certain issues.

Qualitative Findings

Relevance of Curriculum

The participants repeatedly pointed out that the curriculum was up to date with the real-world education requirements especially the subjects pertaining to language and science. Among students, the reports were that the content related well with

real world practice, although the teachers noted similarity with national standards. Some reported however that social studies material did not provide contextual illustrations thus making it less relevant.

Illustrative Quote (Student): "The science classes are clear since we can observe the ways in which they can be translated into daily life, whereas history is far away, and it does not seem to be connected to what we are going through.

Inclusivity and Equity

Students and teachers found inclusivity to be an equivocal area. Although the curriculum included various viewpoints in the language arts, students of marginalized backgrounds felt as being underrepresented in examples and case studies. The teachers were worried that the learning resources fail to support students with disabilities.

Illustrative Quote (Teacher): "What may be found in the curriculum is a high degree of theory but not necessarily true to the diversity of our learning spaces.

Adaptability and Flexibility

Flexibility was pointed out as a challenge by administrators and teachers. Although there was a level of freedom to be flexible in teaching practices, unwieldy assessment frameworks restricted creativity. Teachers wanted to have greater freedom to modify content to meet the needs of the locality and students.

Illustrative Quote (Administrator): "We are encouraging teachers to be flexible with their lessons yet the standard tests are compelling teachers to follow the exact formula.

Student Engagement

Discussions in focus groups showed people to be very active when dealing with interactive learning topics like language arts and science. Students appreciated hands-on activities and collaborative projects. Nevertheless, they found disengagement in subjects where memorization of information was predominant.

Illustrative Quote (Student): "Group work is much more enjoyable than reading and retaining dates and facts, which seem to be very monotonous and meaningless.

The Workload and Resources of Teachers

Workload and availability of resources raised an issue among teachers. It was felt by many that the aims of the curriculum were well established, but this was not matched with sufficient teaching resources and huge classes.

Illustrative Quote (Teacher): "We are aware of what goals we have to reach, but when we lack the necessary resources, it can take lots of strength to do it.

Synthesized Analysis of findings

- Convergence of Findings
- Quantitative evidence: Results in the fields of Language Arts and Science were impressive, with scores of engagement high.
- Qualitative themes provided support this because students have said that they have found these subjects to be relevant and involving because of the practical applications and interactive activities therein.

Divergence of Findings

Quantitative surveys showed medium ratings of inclusiveness (mean score 3.7/5).

Qualitative data indicated deeper worries, as students of underrepresented groups felt insufficiently represented, and the teachers reported a lack of accommodations to learners of different profiles.

This variation leads to thinking that numerical scores might not convey such a high level of inclusivity issues, and qualitative approaches should be taken into consideration.

Complementarity of Findings

1. As indicated by quantitative teacher surveys, clarity of objectives (mean 4.3/5) was coupled with low workload balance (3.5/5).

2. Qualitative interviews explained this in detail, with teachers feeling frustrated due to a lack of resources and the excessive number in classes.
3. The Effectiveness of (Institutional) vs. Classroom Realities.
4. High completion rates (87) and attendance rates (92) also indicated that institutional records are effective.
5. History, however, showed that these achievements are met with a price: teacher load and lack of flexibility in testing.

Inspirations towards Reform

Strengths: Good student engagement, clear goals, good performance in Science and Language Arts.

Weaknesses Determined: The gaps in inclusiveness, structures of rigidity, challenges of workload among teachers, poor performance in Social Studies. The synthesized analysis shows that though the curriculum is successful in meeting core learning outcomes, the quality of the offered curriculum is impaired by the problem of inclusivity, inflexibility, and resource access.

Discussion

The quantitative results indicated a high student achievement in both the language arts and science with the aid of the qualitative data of the high engagement and perceived relevance. This convergence indicates that the curriculum can be effective in promoting learning outcomes in those areas where content is situationally based and interactive. These findings meet the claim by Halcomb and Hickman (2015) that mixed-method designs both measure achievement and internalise experience in learning and prove the merits of the curriculum.

Although the survey data showed moderate inclusivity scores, the qualitative data helped create a perspective on the more serious issues with the representation and accommodating of learners of various kinds. This deviation underscores the fact that relying on quantitative measures only can obscure delicate issues of equity. According to Palinkas et al. (2019), the innovations of mixed-method evaluation are especially useful in revealing such unrelated issues and thus the significance of integrative research in curriculum studies.

Administrators and teachers complained of struggling to change the curriculum because assessment systems were fastened and because of resource shortages. Reduced workload balance and resource availability ratings were proved by their quantitative data. This complement plays out the misunderstandings between institutional performance measures and classroom realities. Morrison and See (2026) categorize that mixed-method research stands alone in uncovering such structural contradictions, and may provide some insights that could be missed in single-method appraisal.

There were high rates of completion and attendance in the records of the institutions, indicating general effectiveness. Nevertheless, qualitative reports also found that such accomplishments were accomplished at the cost of teacher workload and low flexibility. This tension is an expression of the fact that methodological rigor in mixed-methods research is necessary so that institutional metrics are balanced with lived experiences so that curriculum assessment concerned not only with macro-level outcomes, but with the micro-level realities as well.

The combined analysis illustrates that despite the effectiveness of the curriculum in meeting the core learning outcomes, inclusivity gaps, difficulties in adapting to the curriculum, and resource limitations compromise its quality. To combat these problems, reforms with equity, flexibility, and sustainability need to be addressed. This study is an excellent addition to the discourse on curriculum reform because, as Askun and Cizel (2020) point out, mixed-methods methodologies offer a cohesive framework of determining the actionable strategies.

Conclusion

This research paper has served to show the importance of combining both methods in curriculum assessment- qualitative and quantitative. Numerical data showed data which could be measured in terms of student achievement, especially in areas where this data included Language Arts and Science, and the qualitative data showed high engagement and perceived relevancy. Nevertheless, diversity issues, strict grading framework, and workload of educators became areas of concern. The combined discussion revealed that the curriculum is useful in meeting the key learning objectives, but its quality is diminished due to the absence of equity, flexibility and resource access. The use of the mixed-method approach allowed the study to have a comprehensive picture of the standards of curriculum effectiveness and curriculum quality, as the statistical reliability of the data as well as the contextual richness were put into consideration during the assessment. Finally, this paper highlights the significance of thorough procedures in informing curriculum change and education policy.

Recommendations

Enhance Inclusivity

- Review curriculum resources to more accurately reflect cultural, social and learner differences.
- There will be the incorporation of differentiated instructional strategies in order to support students with different abilities.

Increase Curriculum Adaptability

- Offer more flexibility to the teacher to tailor lessons to local conditions.
- Reduce the use of standardized level and line assurance which involves too much rigid testing by incorporating alternative ways of testing like project learning.

Strengthen Teacher Support

- Deal with workload issues by balancing curriculum with achievable teaching abilities.
- Without considering why, it would be advisable to take action on the availability of resources by investing in teaching materials, technology, and personal development.

Improve Underperforming Areas

- Pay more attention to enhancing Social Studies by relating content to the real world and by conducting an engaging activity.
- Promote interdisciplinary aids to render subjects more attractive and practical.

Concur Institutional and Classroom Objectives

- Scaffold performance indicators of the institutions to classroom realities by including the teacher and student feedback in evaluation systems.
- Bring both quantitative and qualitative measures into alignment in order to establish a fairer balance of curriculum success.

Mixed-Methods Evaluation should be the Norm

- Embark on institutionalization of mixed methods approaches in curriculum evaluation to have a thorough, valid and actionable results.
- Future studies should incorporate this integrative model in other education settings to improve and confirm its relevance and validity.

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