

UNIT 4: CURRICULUM EVALUATION AND QUALITY ASSURANCE

Learning Objectives

By the end of this unit, students will be able to:

1. Differentiate the purposes of formative and summative curriculum evaluation.
2. Explain the CIPP model and its four dimensions (Context, Input, Process, Product).
3. Identify and use appropriate tools and indicators for curriculum review and impact assessment.
4. Describe continuous improvement, accreditation, and accountability mechanisms in education.
5. Apply evidence-based decision-making principles to curriculum reform.
6. Develop a comprehensive quality assurance framework for a curriculum programme.

4.1 Purposes and Models of Curriculum Evaluation

4.1.1 Defining Curriculum Evaluation

Curriculum evaluation is the systematic process of collecting, analysing, and interpreting information to determine the value, effectiveness, and quality of a curriculum. It is "understood as an essential, planned framework in the educational process, influenced by diverse paradigms, including behavioristic, cognitive, constructivist, and humanistic" (Afriadi & Fitri, 2025, p. 2). Evaluation serves multiple functions: it provides accountability to stakeholders, guides improvement decisions, and generates knowledge about what works in education.

The literature shows that curriculum evaluation models "offer a unique perspective in assessing the effectiveness of education" (Afriadi & Fitri, 2025, p. 2). Key models include the Stufflebeam Context, Input, Process, Product (CIPP) Model, the Stake Responsive Model, and the Formative and Summative Evaluation classifications. "Tyler's Goal-Oriented Model emphasises accountability through the achievement of measurable targets" (Afriadi & Fitri, 2025, p. 3). Notably, "there is no single model that is superior for all situations; the selection of the model must be adaptive to the objective, context, and philosophy of the evaluation" (Afriadi & Fitri, 2025, p. 3).

4.1.2 Formative versus Summative Evaluation

The distinction between formative and summative evaluation is one of the most fundamental concepts in curriculum evaluation, originally developed by Michael Scriven (Stufflebeam, 1974). These two types serve different purposes, occur at different times, and address different questions.

(a) Formative Evaluation

Formative evaluation is conducted during curriculum development and implementation to provide ongoing feedback for improvement. It is designed to identify strengths, weaknesses, and areas needing refinement while the curriculum is still being shaped.

Dimension	Formative Evaluation	Summative Evaluation
Purpose	To improve the curriculum during development	To judge the worth of the curriculum after completion
Timing	During implementation	At the end of a cycle or programme
Audience	Curriculum developers, teachers, administrators	Funders, policymakers, accreditation bodies
Key question	"How can we make it better?"	"Did it work?"
Stakes	Low stakes, internal use	High stakes, external accountability
Examples	Pilot testing, classroom observations, feedback surveys	Final examination results, standardised test scores, graduation rates

According to Stufflebeam et al. (1971, as cited in Keenan & Forster, 2017), "evaluations are conducted from one of two orientations: (a) improvement/formative-oriented evaluations performed at program completion to guide the creation of a new program or improve an existing program or (b) accountability/summative-oriented evaluations conducted during program implementation to determine adherence to the intended program outline" (p. 2).

(b) Summative Evaluation

Summative evaluation occurs after a curriculum has been fully implemented to determine its overall effectiveness, value, and impact. It typically results in judgments about whether to continue, expand, modify, or terminate a programme. The CIPP model "allows for evaluation of the quality and merit of end-of-life care education within a nursing program" (Keenan & Forster, 2017, p. 1). When used appropriately, Stufflebeam's model "serves as a valuable guide for in-depth curriculum evaluation" (Keenan & Forster, 2017, p. 1).

(c) The Complementary Relationship

Formative and summative evaluations are not mutually exclusive but rather complementary. "Formative and Summative Evaluation function to facilitate continuous improvement and strategic decision-making" (Afriadi & Fitri, 2025, p. 2). Effective curriculum evaluation systems integrate both approaches, using formative data to guide ongoing improvements and summative data to demonstrate overall effectiveness to external stakeholders.

4.1.3 The CIPP Evaluation Model (Stufflebeam)

The **Context, Input, Process, Product (CIPP) Model** was developed by Daniel Stufflebeam and colleagues in the 1960s and 1970s. It remains "a popular model for curriculum evaluation" that is "both flexible and prescriptive when utilized to assess program quality" (Keenan & Forster, 2017, p. 2). The CIPP model "provides a theoretical framework that can guide the determination of a program's overall quality and merit" (Keenan & Forster, 2017, p. 1).

(a) The Four Dimensions of CIPP

Dimension	Key Questions	Purpose
Context	What needs exist? What are the assets and opportunities?	Identify strengths, weaknesses, and opportunities
Input	What resources are available? What strategies might work?	Assess alternative approaches and plan resource allocation
Process	Is the plan being implemented as intended?	Monitor implementation, identify needed modifications

Product	What outcomes were achieved?	Measure goal attainment, document impact
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(b) Context Evaluation

Context evaluation involves "evaluating program needs, problems, assets, and opportunities" (Keenan & Forster, 2017, p. 2). This dimension examines the environment in which the curriculum operates and identifies the gaps between current conditions and desired outcomes. "Much of this information is obtained from stakeholders, including accreditation bodies, program administration, the community, and students and faculty within the program" (Keenan & Forster, 2017, p. 2). Data collection methods for context evaluation include "checklists, advisory panels, or town hall meetings" (Keenan & Forster, 2017, p. 2), "as long as the information obtained is reliable and credible" (Keenan & Forster, 2017, p. 2).

(c) Input Evaluation

Input evaluation focuses on "budget, work plans, political barriers, legal constraints, review of best practice standards/extant literature, and resource availability" (Keenan & Forster, 2017, p. 3). This dimension helps decision-makers choose among alternative programme designs and allocate resources effectively. "From a comparison to best practice standards, educators develop new programs or identify changes needed to the current program" (Keenan & Forster, 2017, p. 2). "Stakeholders utilize input evaluation data to make decisions regarding subsequent program implementation" (Keenan & Forster, 2017, p. 3).

(d) Process Evaluation

Process evaluation examines the fidelity of programme implementation. It involves "the fidelity of program implementation to the expectations and work plan are compared to identify improvements or modifications" (Keenan & Forster, 2017, p. 3). "Frequently, process evaluations utilize an evaluator (either someone within the program or an objective outside party) to systematically obtain and evaluate implementation data to share with stakeholders" (Keenan & Forster, 2017, p. 3).

(e) Product Evaluation

Product evaluation measures the outcomes of the curriculum. Data for this evaluation are obtained from multiple sources, including student achievement data, stakeholder satisfaction surveys, and long-term impact studies. Product evaluation answers the fundamental question: "Did the curriculum achieve its intended outcomes?"

(f) Strengths of the CIPP Model

Strength	Explanation
Comprehensive	Addresses all phases of curriculum development and implementation
Decision-oriented	Provides actionable information for decision-makers at each stage
Flexible	Can be adapted to different contexts and programme sizes
Integrates formative and summative	Incorporates both improvement-oriented and accountability-oriented purposes
Stakeholder-inclusive	Emphasises input from diverse stakeholders

(g) Limitations of the CIPP Model

Limitation	Explanation
Resource-intensive	Requires significant time, expertise, and resources to implement fully
Complexity	Can be overwhelming for small-scale evaluations
Requires skilled evaluators	Demands expertise in multiple data collection and analysis methods

4.1.4 Other Evaluation Models

(a) Stake's Responsive Model

The Responsive Stake Model "highlights the importance of stakeholder perspectives and dynamic contexts" (Afriadi & Fitri, 2025, p. 2). Rather than focusing on predetermined objectives, this model responds to the actual concerns and issues of stakeholders, including students, teachers, parents, and community members.

(b) Tyler's Goal-Oriented Model

Ralph Tyler's model "emphasises accountability through the achievement of measurable targets" (Afriadi & Fitri, 2025, p. 3). This model focuses on comparing actual outcomes with predetermined objectives, making it particularly useful for accountability purposes.

(c) Kirkpatrick's Four-Level Model

Kirkpatrick's model, widely used in training and professional development evaluation, includes four levels:

Level	Focus	Key Question
Level 1: Reaction	Learner satisfaction	Did participants enjoy the training?
Level 2: Learning	Knowledge and skill acquisition	What did participants learn?
Level 3: Behaviour	Application on the job	Are participants using what they learned?
Level 4: Results	Organisational impact	What measurable results were achieved?

The "Kirkpatrick's evaluation framework" has informed the development of various evaluation instruments, including the "EDUCational Course Assessment TOOLkit (EDUCATOOL)" which includes "12 items grouped into the following evaluation components: (1) reaction; (2) learning; (3) behavioural intent (post-course)/behaviour (follow-up); and (4) expected outcomes (post-course)/results (follow-up)" (Frontiers in Education, 2023, p. 2).

4.2 Tools and Indicators for Curriculum Review and Impact Assessment

4.2.1 The Role of Evaluation Tools

Curriculum evaluation tools are systematic instruments designed to collect, analyse, and interpret data about curriculum quality and effectiveness. These tools range from simple checklists to complex, validated questionnaires. "The instruments for evaluation of educational courses are often highly complex and specifically designed for a given type of training" (Frontiers in Education, 2023, p. 1). However, there is a growing demand for "a simple and generic

EDUCational Course Assessment TOOLkit (EDUCATOOL)" that can be adapted across contexts (Frontiers in Education, 2023, p. 1).

4.2.2 Types of Evaluation Tools

Tool Type	Purpose	Examples
Questionnaires and surveys	Gather quantitative data from large numbers of stakeholders	Student satisfaction surveys, teacher feedback forms
Rubrics and scoring guides	Provide criteria for judging quality or performance	Curriculum review rubrics, lesson observation protocols
Checklists	Ensure comprehensive coverage of evaluation criteria	Accreditation checklists, alignment checklists
Interview protocols	Collect in-depth qualitative data	Stakeholder interview guides, focus group protocols
Observation instruments	Document classroom implementation	Classroom observation schedules, teaching logs
Document analysis frameworks	Analyse curriculum documents systematically	Textbook evaluation criteria, syllabus review guides
Portfolio assessment tools	Evaluate collections of work over time	Student portfolio rubrics, teacher portfolio frameworks
Performance assessments	Measure applied skills and competencies	Capstone project rubrics, clinical evaluation forms

4.2.3 Indicators for Curriculum Evaluation

Indicators are measurable variables that provide evidence about curriculum quality and effectiveness. Well-designed indicators are valid, reliable, and feasible to collect. The "Curriculum assessment system for sustainability (CASS)" presents "key indicators for curricular analysis that contribute to research and sustainability-focused education, from conceptual to attitudinal and methodological aspects" (CASS, 2025, p. 1).

Table: Categories of Curriculum Indicators

Category	Sample Indicators
Context indicators	Student demographics, teacher qualifications, resource availability
Input indicators	Budget per student, class size, instructional materials per student
Process indicators	Instructional time, teacher attendance, use of active learning strategies
Output indicators	Test scores, graduation rates, skill mastery
Outcome indicators	College enrolment, employment rates, civic engagement
Equity indicators	Achievement gaps by subgroup, access to advanced courses

CASS Framework for Sustainability Education

The CASS tool addresses multiple dimensions of curriculum quality:

- "The presence of the sustainable development goals and the dimensions of sustainability addressed"
- "The pedagogical-methodological strategies used"
- "The level of literacy encouraged"
- "The inclusion of values, beliefs and emotions"
- "The skills encouraged and the philosophies that guide the sustainable narrative" (CASS, 2025, p. 2)

4.2.4 The EDUCATIONAL Course Assessment TOOLkit (EDUCATOOL)

The EDUCATOOL is a validated instrument for evaluating educational courses. Studies have demonstrated that "the EDUCATOOL questionnaires have adequate factorial validity, convergent validity, internal consistency, and test–retest reliability and they can be used to evaluate training and learning programmes" (Frontiers in Education, 2023, p. 3).

Table: Psychometric Properties of EDUCATOOL

Property	Finding
Factorial validity	CFI = 0.99-1.00; RMSEA = 0.05-0.03; SRMR = 0.07-0.03
Convergent validity	ICC = 0.71-0.86
Internal consistency	Cronbach's α = 0.83-0.97
Test-retest reliability	ICC = 0.87-0.91

4.2.5 Impact Assessment in Curriculum Evaluation

Impact assessment goes beyond measuring immediate outcomes to examine the long-term effects of a curriculum on learners, organisations, and communities. The **MEiRA (Method for Evaluating Impact and Recognition of Achievement)** approach "is a novel method for evaluating learning effectiveness, emphasizing practical knowledge application and learner achievement. It transcends traditional metrics by valuing the learning journey and its outcomes equally" (Inter-American Development Bank, 2024, p. 1). MEiRA "overcomes conventional evaluation model limitations by measuring acquired knowledge and recognizing its real-world application and impact. It provides a flexible..." (Inter-American Development Bank, 2024, p. 1).

4.3 Continuous Improvement, Accreditation, and Accountability Mechanisms

4.3.1 Continuous Improvement in Curriculum

Continuous improvement is an ongoing, systematic process of enhancing curriculum quality through data collection, analysis, action, and evaluation. It is "a framework for growth, fostering a culture of excellence with the focus on continuous improvement within the institution" (OWIS India, 2025, p. 2). The School Quality Assessment and Assurance Framework (SQAAF) "empowers schools through three interlocking pillars: Self-Assessment & Honest Reflection, Strategic Improvement Planning, and Public Disclosure of Performance" (PARAKH NCERT, 2025, p. 2).

Table: The Continuous Improvement Cycle

Phase	Curriculum Application	Example
Plan	Identify a problem, hypothesise a solution, plan data collection	"Learners struggle with fractions. We will try hands-on manipulatives for two weeks."
Do	Implement the change on a small scale	Teach fractions using fraction circles and counters for one Grade 5 class
Study	Analyse data to see if improvement occurred	Compare pre-test and post-test scores; observe learner engagement
Act	If successful, standardise the change; if not, revise hypothesis and repeat cycle	Expand manipulatives to all Grade 5 classes; or try a different approach

(a) The Plan-Do-Study-Act (PDSA) Cycle

Continuous improvement is an ongoing, systematic process of collecting and using data to make incremental enhancements to curriculum, rather than waiting for major, periodic revisions.



Figure 4.1: The Plan-Do-Study-Act (PDSA) Cycle (Deming, 1986)

This diagram captures the **continuous improvement loop** beautifully:

- **Plan** → Identify goals and strategies for improvement.
- **Do** → Implement the plan on a small scale.

- **Study** → Analyze data and evaluate results.
- **Act** → Apply insights to refine or expand the plan.

The circular flow emphasizes that curriculum development is **iterative**, not static — educators continuously collect evidence, reflect, and adjust to ensure relevance and effectiveness.

(b) Key Principles for Curriculum Continuous Improvement

Effective curriculum improvement thrives on small, steady steps rather than large, infrequent overhauls. Instead of waiting for annual reviews, educators should make **weekly or monthly adjustments**, allowing the curriculum to evolve responsively.

Improvement should be **data-informed, not data-driven**—data serves as a guide to professional judgment, not a substitute for it. Teachers interpret evidence thoughtfully, balancing quantitative insights with classroom realities.

It is essential that the process remains **teacher-led**. Those closest to learners are best positioned to identify what works and what needs refinement. Their firsthand experience anchors improvement in authentic learning contexts.

Continuous improvement also depends on being **collaborative**. Teams of teachers work together to address shared challenges, exchange ideas, and co-create solutions that strengthen coherence across subjects and grade levels.

Finally, the environment must be **low-stakes and safe**. Meaningful innovation requires experimentation and the freedom to fail without fear—each attempt becomes a learning opportunity that fuels progress.

Example: School-Based Curriculum Improvement Team

A Zambian secondary school forms a Science Curriculum Improvement Team. They meet biweekly to:

- Review common assessment data (which topics had lowest scores?)

- Identify instructional challenges (e.g., lack of lab equipment for chemistry)
- Propose low-cost solutions (e.g., using local materials for experiments)
- Implement small PDSA cycles (e.g., try one new experiment per term)
- Share successful practices across the department

4.3.2 Quality Assurance in Curriculum

Quality assurance (QA) encompasses the policies, processes, and practices designed to ensure that curriculum meets defined standards of quality. "The QCAA quality assurance processes support schools to develop curriculum and assessment and ensure consistency of judgments about student achievement. The processes support the continuous improvement of practices in schools" (Queensland Curriculum and Assessment Authority, 2026, p. 1).

Quality Assurance Cycle

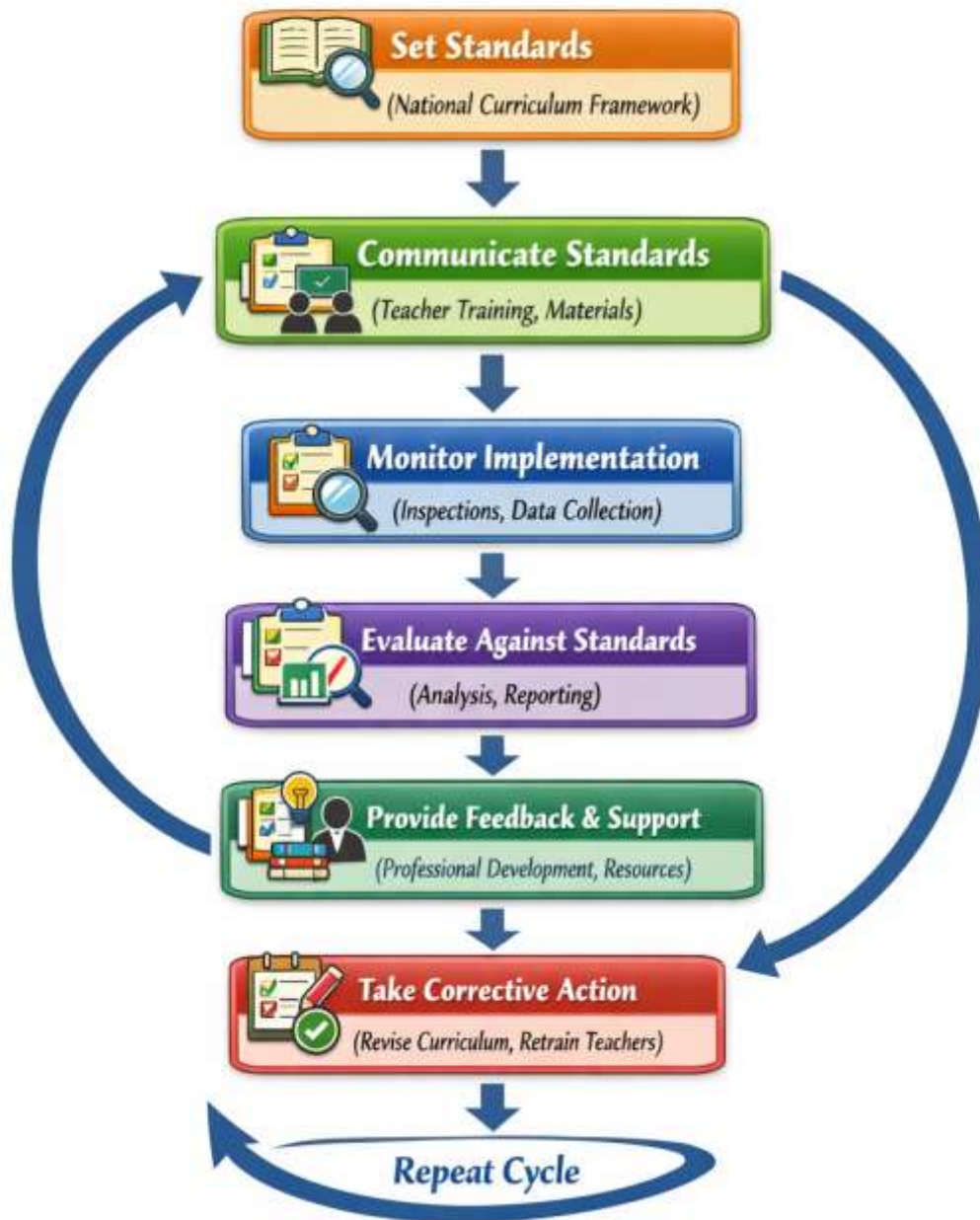


Figure 4.2: Educational Quality Assurance Cycle

This diagram highlights the process:

- **Set Standards** → Establish benchmarks through the national curriculum framework.
- **Communicate Standards** → Share expectations via teacher training and instructional materials.
- **Monitor Implementation** → Track delivery through inspections and data collection.
- **Evaluate Against Standards** → Analyze results and report findings.
- **Provide Feedback & Support** → Offer professional development and resources to strengthen practice.
- **Take Corrective Action** → Revise curriculum or retrain teachers where gaps are found.
- **Repeat Cycle** → Ensure continuous improvement through iteration.

This cycle emphasises that quality assurance is **systematic and ongoing**, not a one-time event. It can also be designed in timeline form as in Figure 4.4.



Figure 4.3: Quality Assurance Cycle Timeline

This timeline shows the rhythm of continuous improvement:

- **Start of School Year – Set Standards:** Establish expectations through the national curriculum framework.
- **Fall – Communicate Standards:** Train teachers and distribute instructional materials.
- **Winter – Monitor Implementation:** Conduct inspections and gather classroom data.

- **Spring – Evaluate Against Standards:** Analyze results and report findings.
- **End of School Year – Provide Feedback & Support:** Offer professional development and resources.
- **Post-Year – Take Corrective Action:** Revise curriculum and retrain teachers before the next cycle begins.

The horizontal flow emphasizes that quality assurance is **seasonal and iterative**, ensuring that each academic year builds on the lessons of the last.

Principles of Quality Assurance

Quality assurance processes incorporate the following principles (Queensland Curriculum and Assessment Authority, 2026):

- "There is alignment between teaching, learning, and assessment"
- "Teachers implement students' individual curriculum plans and develop teaching, learning and assessment for students in their local context"
- "Teachers make judgments about student achievement using evidence in student work"
- "Quality assurance processes, including feedback and professional conversations, promote continuous improvement and help teachers improve teaching and inform assessment practices"

4.3.3 Accreditation in Education

Accreditation is a formal, external review process through which an educational institution or programme demonstrates that it meets established quality standards. "Accreditation by a recognised QA agency signals an institution's commitment to excellence and high standards, which builds a strong reputation for the school" (OWIS India, 2025, p. 2).

Table: Key Features of Accreditation

Feature	Description
External peer review	Evaluation by experts from outside the institution

Standards-based	Judged against pre-determined criteria
Voluntary (usually)	Institutions choose to participate
Periodic	Occurs on a regular cycle (e.g., every 5-10 years)
Self-study required	Institutions conduct internal review before external visit
Improvement-oriented	Focuses on both accountability and continuous enhancement

(a) Accreditation Cycle

An accreditation cycle is a structured and recurring process through which educational institutions are evaluated to ensure quality, compliance, and continuous improvement. Typically lasting between seven and ten years, the cycle varies depending on the accrediting body and institutional context.

Accreditation cycles are designed to **assess and reaffirm institutional quality** over time. They involve systematic evaluations, evidence collection, and periodic reporting to verify that institutions uphold established standards and pursue ongoing enhancement. This process fosters a culture of reflection and accountability, ensuring that educational practices remain effective and responsive to change.

Beyond internal improvement, accreditation provides **transparency and assurance** to key stakeholders — including students, faculty, and funding agencies — by demonstrating that the institution meets recognized benchmarks of excellence and integrity.



Figure 4.4: Accreditation Cycle

This diagram captures the process elegantly:

- **Self-Study (1 year)** → Institutions conduct an internal evaluation of standards and practices.
- **External Review (Site Visit, 3–5 days)** → Independent reviewers assess evidence and validate findings.
- **Accreditation Decision** → The accrediting body decides to accredit, accredit with conditions, defer, or deny.

- **Interim Reporting (Annual Updates)** → Institutions submit yearly progress reports to maintain accountability.
- **Mid-Cycle Review (Optional)** → A formative check-in to ensure continued compliance and improvement.
- **Next Self-Study (5–10 years later)** → The cycle renews, reinforcing continuous quality assurance.

The circular flow emphasizes that accreditation is **not a one-time event** but a **continuous process of reflection, validation, and improvement**.

(b) Assurance of Learning (AoL)

In higher education accreditation, assurance of learning is a critical component. "Under Standard 5 of AACSB's Business Accreditation Standards, schools must have 'well-documented assurance of learning processes'" (AACSB, 2025, p. 1). "The future of assurance of learning lies in adopting smarter systems and building academic cultures based not on compliance, but on continuous improvement" (AACSB, 2025, p. 1).

4.3.4 Accountability Mechanisms

Accountability in curriculum refers to the obligation of educators, schools, and systems to demonstrate that they are achieving expected outcomes and using resources responsibly.

Table: Types of Accountability

Type	Focus	Mechanisms
Professional accountability	Internal to educators	Professional standards, peer review, codes of ethics
Performance accountability	Student outcomes	Standardised testing, graduation rates, value-added measures
Market accountability	School choice	School report cards, parent choice policies
Political accountability	Governance structures	School boards, legislative oversight, public reporting

Regulatory accountability	Compliance with rules	Accreditation, government inspections, legal requirements
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SQAAF: A Framework for School Quality

The School Quality Assessment and Assurance Framework (SQAAF) "frames quality as a progression through three aspirational levels" (PARAKH NCERT, 2025, p. 3):

1. **Abhilasha (Aspiring):** "Launch self-assessment and gap analysis"
2. **Pragati (Progressing):** "Deploy action plans, monitor early successes, refine strategies"
3. **Jagriti (Exemplary):** "Embed best practices, mentor peers, and catalyze broader change"

"Quality isn't just compliance—it's culture in action. SQAAF empowers schools to spotlight strengths, uncover gaps, and co-create solutions with their communities" (PARAKH NCERT, 2025, p. 4).

4.3.5 Building a Culture of Continuous Quality Improvement

Effective curriculum quality assurance requires more than policies and procedures; it requires a **culture of quality** embedded throughout the organisation. Key elements include:

- **Shared vision and commitment:** All stakeholders understand and support quality goals.
- **Data-informed decision-making:** Decisions are based on evidence rather than intuition or tradition.
- **Collaborative inquiry:** Teams work together to examine problems and develop solutions.
- **Professional learning:** Ongoing development builds capacity for quality improvement.
- **Transparent communication:** Quality information is shared openly with all stakeholders.
- **Recognition and celebration:** Successes are acknowledged and built upon.

4.4 Evidence-Based Decision Making and Data Use in Curriculum Reform

4.4.1 Defining Evidence-Based Decision Making

Evidence-based decision making (EBDM) in curriculum involves using the best available research evidence, combined with professional expertise and stakeholder values, to guide curriculum decisions. "Making decisions based on data or evidence entails benefits such as transparency, less subjectivity and greater understanding and acceptance of decisions by everyone" (Cabrera & Guàrdia, 2025, p. 1).



Figure 4.5: The Three Pillars of Informed Decision-Making

This diagram highlights the three pillars of informed decision-making:

- **Research Evidence** → Draws from studies and meta-analyses to ground decisions in proven findings.
- **Professional Expertise** → Reflects teachers' experience and judgment in applying evidence to real classrooms.
- **Stakeholder Values** → Incorporates priorities and perspectives from parents and learners.
- **Local Data** → Uses contextual information such as test scores and attendance to adapt decisions locally.

Together, these sources form a **balanced foundation for curriculum design**, ensuring that decisions are neither trend-driven nor purely intuitive but rooted in credible, contextual evidence.

4.4.2 Types of Evidence for Curriculum Decisions

Evidence Type	Description	Examples
Research evidence	Findings from rigorous studies	Randomised controlled trials, quasi-experimental studies, meta-analyses
Local data	Information from the specific context	Student assessment data, attendance records, survey results
Professional expertise	Knowledge and experience of practitioners	Teacher observations, curriculum specialist recommendations
Stakeholder values	Priorities and preferences of affected parties	Parent feedback, student voice, community input
Implementation data	Information about how the curriculum is being enacted	Classroom observations, fidelity measures, teacher logs

4.4.3 Data Systems for Curriculum Improvement

Robust data systems are essential for evidence-based curriculum decision-making. The **District Health Information Software 2 (DHIS2)**, originally developed for health data, has been "adapted for use in the education sector. This adaptation is helping to fill critical gaps in school-level monitoring, resource allocation and cross-sector collaboration, by enabling real-time tracking of pupil enrolment, teacher shortages, and school-based health interventions" (Global Partnership for Education, 2025, p. 3).

Key Features of Effective Education Data Systems

- **Timeliness:** Data are available when decisions are being made.
- **Accuracy:** Data are reliable and valid.
- **Granularity:** Data are available at appropriate levels of detail (student, classroom, school, district).

- **Accessibility:** Data are presented in user-friendly formats.
- **Actionability:** Data point to specific improvement actions.
- **Integration:** Data from multiple sources can be combined.

4.4.4 Building Capacity for Evidence Use

Effective evidence-based decision making requires capacity building at all levels of the education system. "The new DMS SCALE research aims to equip actors within the decentralized system and school principals ... with the skills to use data for rapid, context-appropriate decision-making" (UNICEF, 2024, p. 1). "These findings included the importance of strengthening local education authorities' capacities to take evidence-based decisions" (UNICEF, 2024, p. 1).

Strategies for Building Evidence-Use Capacity

Strategy	Description
Professional development	Training on data literacy, interpretation, and use
Data coaching	Dedicated personnel to support evidence use
Collaborative data teams	Teacher teams that analyse data together
User-friendly data visualisations	Dashboards, reports, and summaries that make data accessible
Embedded evidence labs	Dedicated teams within government to align priorities with data and evidence

4.4.5 Embedded Evidence Labs

Embedded Evidence Labs are "a dedicated team embedded within government that works to align sector priorities with data and evidence, supporting both decision-making and implementation" (Building Evidence in Education, 2025, p. 1). These Labs follow "a three-stage cycle to achieve impact on public policy" (Building Evidence in Education, 2025, p. 1):

1. **Policy Challenge Mapping:** "The Lab assists in identifying the main issues within its sector and translating them into learning and research questions"

2. **Data and Evidence Generation:** "The Lab launches learning and research strategies tailored to the nature of the questions, such as descriptive analysis, predictive analytics, impact evaluations, or Monitoring, Evaluation, and Learning (MEL) systems for effective implementation"
3. **Applying Data and Evidence to Policy:** "The Lab connects results with the right people at the right time and assists decision-makers in using evidence to improve policy"

4.4.6 Using Data for Curriculum Reform

Curriculum reform is a complex, long-term process that benefits significantly from evidence-based approaches. "Tracking indicators such as teacher gender balance or the representation of diverse voices in curriculum development ensures that systemic biases are addressed" (APHRC, 2025, p. 2).

Table: Steps in Evidence-Informed Curriculum Reform

Step	Activities
Needs assessment	Analyse student achievement data, stakeholder surveys, labour market information
Goal setting	Use research evidence to set ambitious but achievable targets
Strategy selection	Review research on effective curriculum interventions
Pilot testing	Implement and evaluate promising approaches on a small scale
Scaling	Use pilot data to refine strategies before wider implementation
Monitoring	Track implementation fidelity and early outcomes
Evaluation	Conduct rigorous evaluation of reform impact
Iteration	Use evaluation findings to refine and improve

4.4.7 Challenges in Evidence-Based Decision Making

Despite its benefits, evidence-based decision-making faces significant challenges:

Challenge	Explanation
Research-practice gap	Research findings are not always accessible or applicable to local contexts
Political pressures	Policy decisions are often driven by ideology, interest groups, or electoral cycles
Limited capacity	Educators and administrators may lack data literacy skills
Data quality issues	Existing data may be incomplete, inaccurate, or out of date
Time constraints	Decision-makers often face pressure to act quickly, without time for evidence gathering
Conflicting evidence	Research may produce contradictory findings

4.4.8 From Data to Action: The Evidence-Informed Curriculum Cycle

Effective curriculum improvement requires moving beyond data collection to data use. The evidence-informed curriculum cycle includes:

1. **Collect data** from multiple sources (assessments, observations, surveys, research)
2. **Analyse and interpret** data to identify patterns, gaps, and opportunities
3. **Share findings** with all stakeholders in accessible formats
4. **Collaboratively plan** improvement actions based on evidence
5. **Implement changes** with fidelity and documentation
6. **Monitor impact** through ongoing data collection
7. **Adjust and refine** based on new evidence
8. **Celebrate successes** and identify next challenges

4.5 Summary and Key Takeaways

4.5.1 Summary of Key Concepts

Concept	Definition
Formative evaluation	Evaluation conducted during curriculum development to guide improvement
Summative evaluation	Evaluation conducted after curriculum completion to judge overall worth
CIPP model	Stufflebeam's comprehensive framework: Context, Input, Process, Product
Context evaluation	Assessing needs, problems, assets, and opportunities
Input evaluation	Examining resources, strategies, and alternative approaches
Process evaluation	Monitoring implementation fidelity
Product evaluation	Measuring outcomes and impact
Indicators	Measurable variables providing evidence of curriculum quality
Continuous improvement	Ongoing, systematic process of enhancing curriculum quality
Quality assurance	Policies and practices ensuring curriculum meets standards
Accreditation	External review confirming adherence to quality standards
Accountability	Obligation to demonstrate achievement of expected outcomes
Evidence-based decision making	Using research, data, expertise, and values to guide decisions

4.5.2 Key Theoretical Contributions

- **Michael Scriven** distinguished formative and summative evaluation and developed goal-free evaluation.
- **Daniel Stufflebeam** developed the CIPP evaluation model, providing a comprehensive framework for programme evaluation.
- **Donald Kirkpatrick** developed the four-level model of training evaluation (Reaction, Learning, Behaviour, Results).

- **Robert Stake** developed the Responsive Evaluation model, emphasising stakeholder perspectives.

4.5.3 Discussion Questions

1. Compare and contrast formative and summative evaluation. Provide a concrete example of each from your own educational experience.
2. How would you apply the CIPP model to evaluate a curriculum programme in your own context? What data would you collect for each of the four dimensions?
3. Identify five indicators you would use to evaluate the quality of a secondary school mathematics curriculum. Justify your choices.
4. What is the relationship between continuous improvement, quality assurance, and accreditation? How do these concepts work together?
5. Describe a curriculum decision you have observed that was made without adequate evidence. What were the consequences? How could evidence have improved the decision?
6. What are the main barriers to evidence-based decision making in your educational context? How might these barriers be overcome?

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