

Assessment of Educational Program Evaluation in Senior Secondary Schools in Rivers State Based on Wheeler's Cyclic Model

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Abstract:

This study investigated the assessment of educational program evaluation in senior secondary schools in Rivers State based on Wheeler Cyclic Model. Correlational research design was employed for the study. Three research questions and three null hypotheses guided the study. The population of the study consists of 2,850 teachers from both public and private senior secondary schools in the study area. The simple random sampling technique was used to draw 200 teachers as the sample size of the study of the study. Data was collected using self-designed questionnaire titled: Wheeler's Cyclic Model and Program Evaluation Scale (WCMPEs) and validated by experts in measurement and evaluation. The corrections and contributions made by experts were built into the final drafting of the instruments. 0.86 was obtained as a measure of internal consistency using Cronbach Alpha statistical formula. Data obtained were analysed using Pearson Product Moment Coefficient to answer the research questions and tested the null hypotheses at 5% probability level. The results showed that (i) teachers' relate moderately to effective program evaluation assessment, (ii) teachers' integrating Wheeler's cyclic model significantly relate moderately to practicing program evaluation

in senior secondary schools, (iii) teachers' facing the challenges in applying Wheeler's cyclic model in programme evaluation in schools. Recommendations were made for further improvement.

Keywords: Assessment, Wheeler's Cyclic Model, Curriculum Development and Program Evaluation.

Introduction

Assessment has been seen in the field of education as important component of the teaching and learning process. In the light of the foregoing, assessment means a process of collecting information (data) to specify and verify problems as well as decisions about the students in the school settings. In the same vein, Asuru and Afemikhe maintained that assessment constitutes the central focus in the educational industry and include the totality of the processes of collating information for decision-making about the learners, teachers, instructional process, curricula, schools, educational policies and the society at large [1], [2].

Furthermore, Asuk defined assessment as the gathering of relevant information to help students, individuals or groups to make valid decision and reliable decisions. In the same spirit, the author maintained that assessment is a critical component of the educational process that helps to improve students' academic performance vis-à-vis the quality of education. Assessment is a mechanism whereby the students' cognitive, affective and psychomotor domains are ascertained during a given period of schooling. To this end, assessment is characterised as comprehensive, cumulative, systematic and guidance-oriented [3], [4].

Again, curriculum planning and program evaluation are integral components of educational improvement and accountability. Over the decades, several models of curriculum development have emerged to guide educators and policymakers in structuring learning experiences that are relevant, coherent, and effective. Among these, the Wheeler Cyclic Model occupies a significant place as it emphasizes the continuous and dynamic nature of curriculum design. While linear approaches view curriculum development as a unidirectional process, Wheeler's model represents curriculum as a cyclical process (9) in which the four curricular elements (i.e. objective, content selection and organization, learning experiences and evaluation) are interconnected, and where feedback from evaluation is constantly informing the entire process and reshaping all components of the curriculum. This angle is even more pertinent to modern education where flexibility, adaptability and learner-awareness is the norm [5], [6].

Wheeler's Cyclic Model is basically Model of Curriculum and program evaluation. It was developed by Wheeler and it apply in educational settings, schools etc. Unlike Tyler's linear model, Wheeler's Cyclic Model is cyclical, meaning the stages are interconnected and allow for continuous feedback and improvement [7].

1. The process begins by defining the educational aims (broad purposes) and goals of specific objectives.

- a. In Schools, this means clarifying what the programme intends to achieve (eg. improved literacy, skills or example performance).

2. Selection of learning Experiences.

- a. Appropriate learning experiences are chosen to help achieve the state objectives.
 - b. For school evaluation, this includes deciding the content, teaching strategies and student activities that aligns with the program's purpose.
3. Selection of Content
- a. The curriculum content is organized logically and sequentially to achieve the objectives.
 - b. Evaluation assess whether the school program include relevant up-to-date and comprehensive content suitable for learning needs and abilities.
4. Organization and integration of learning experiences
- a. Structure the experiences logically e.g. simple to complex, unknown to abstract.
5. Evaluation
- a. Continuous evaluation to check whether the objectives are being achieved (through tests, observation and feedback.
 - b. Results feed back into refining objectives, contents and methods
6. Evaluation in school program
- a. When school introduces a new program, Wheeler's model helps evaluators to: (1) define clear objectives, (2) align content and activities with objectives, (3) continuously assessing effectiveness and (4) use of feedback to make some improvements [8].

Program evaluation is known to be an important component of evaluation, but many schools struggle to implement systematic and comprehensive evaluation approaches. Most are focused only on the small-scale testing and summative assessment devices that reveal almost nothing about program processes, learner experiences, and longer-term impacts. However, this limited perspective is a liability because it potentially ignores the wider aspects of education critical thinking, creativity, inclusiveness, and socio-emotional skills. In this sense, the uniting of curriculum models (for example, Wheeler's Cyclic Model) with robust program evaluation frameworks provides a more integrated route forward for school improvement. This form is to guarantee that the assessment is not a reaction to get it but rather, a feedback system compartmentalized in the process of curriculum development/specifications, leading to responsive learning environments catering to the needs of students and society [9]. Thus, exploring Wheeler's Cyclic Model with the approaches for program evaluation in schools, we can gain insights of how cyclical processes of curriculum-composition and sustained systems for assessment can work together to achieve enduring quality and accountability in education.

Literature Review

The curriculum is an enduring object of study in education research, and when theorists and scholars theorize elements of educational curriculum, they often develop competing frameworks that inform our understanding of how to design, implement, and evaluate learning experiences. The Objective Model of Tyler and the same kind of early models were based on preset goals and a direct path from objectives to outcomes. Although highly influential, this approach was often derided for being inflexible and poorly

attuned to the changing educational environment. Some theorists responded by offering models that are less linear and more cyclical, such as Wheeler's Cyclic Model, which has a more interdependent structure between steps in development and a cyclical flow between them [10].

Wheeler's Cyclic Model

Wheeler's Cyclic Model builds on Tyler's work but rejects its linearity. Instead, Wheeler proposed that curriculum development involves five interconnected stages: aims and objectives, selection of learning experiences, selection of content, organization and integration, and evaluation. Crucially, evaluation feeds back into each of the other stages, creating a dynamic and cyclical process. This model aligns with modern educational perspectives that view learning as evolving and context-dependent rather than static. Scholars such as Ornstein and Hunkins noted that Wheeler's model remains relevant in highlighting the adaptability required in curriculum planning. Although widely respected, Wheeler's model has been critiqued for being somewhat abstract, as it does not specify practical steps for curriculum implementation. Critics argue that without clear operational guidelines, the model risks being interpreted differently across contexts [11]. Nonetheless, its major strength lies in its recognition of evaluation as an integral, ongoing process rather than an endpoint. This shows how aligned the model can be with modern education systems that are hip deep in accountability and evidence-based practices to prove the veracity of the change effort.

Educational program evaluation is the systematic, including the structure of investigation and data collection, analysis of data, etc. to judge the usefulness, relevance, efficiency. Tyler was one of the earliest to 'objectify' evaluation within curriculum models by tying it to outcomes. Over the years, a variety of approaches have developed, such as Scriven's Goal-Free Evaluation (where the evaluator focuses on real results, rather than previously defined goals) and Stufflebeam's Context, Input, Process, Product (CIPP) Model (which focuses on context, input, process, and product). These frameworks show that evaluation can function for both accountability and improvement [12].

The CIPP model by Stufflebeam being one of the most powerful in school evaluation. It offers a systematic method to assess educational programs by evaluating context (needs assessment), input (resources and strategies), process (implementation), and product (results). Zhang argues that CIPP model has been successfully implemented in the educational context because it provides a comprehensive focus on the outcome and the process of the outcome as well as the indicators/includes the measurement of the product. This makes it particularly compatible with Wheeler's Cyclic Model, where evaluation continuously informs curriculum development [13].

Scriven's Goal-Free Evaluation was designed to minimize bias by avoiding over-reliance on stated objectives and instead focusing on the actual effects of programs. This contrasts with Tyler's objective-oriented approach, which evaluates programs strictly in terms of whether they achieve their stated goals. Though this objective-oriented model creates certainty and accountability, it's been criticized as overly narrow. In contrast, goal-free evaluation enables evaluators to identify both positive and negative unintended outcomes [14]. Both are still applicable in schools based on the goal of evaluation.

Wheeler's Cyclic Model lends itself naturally to program evaluation since evaluation is the feedback loop that keeps the cycle going. Through evaluative processes, both designing and enacting strengths and weaknesses in curriculum design or enactment are identified and inform refinements of, at least, objectives, content, and learning experiences. Academics like Print assert that feedback loops of this nature are critical to ensure that curricula remain timely, contextualized, and responsive to learner needs. Wheeler ultimate model then reinforces a notion that program evaluation is not extra, but is included in a give up heart to sound curriculum practice [15].

Challenges in Program Evaluation in Schools

Despite the availability of robust models, schools face challenges in implementing effective program evaluation. These include overreliance on standardized testing, inadequate evaluator training, resource constraints, and limited stakeholder involvement. As Darling-Hammond point out, accountability-driven assessments often prioritize test scores over holistic measures of learning such as critical thinking, creativity, and social development. This generates a disconnection between the wider objectives of education, and the criteria by which it is assessed [16].

There is growing recognition in the literature that program evaluation should be inclusive and participatory in nature, early in the process whereby it is formative. As 21st-century competences became more prominent, digital literacy, collaboration and socio-emotional skills are increasingly included in evaluation frameworks [17]. In addition, worldwide emphasis on inclusive education demand evaluation that takes into consideration diversity of learners, especially in respect of disability, and/or other marginalization groups. According to Wheeler, curriculum should not focus on only one cycle of time, but instead be viewed as a recurring process, one that reacts based on how successful it is in addressing a need or challenge through an evaluative cycle.

Key to Wheeler's Cyclic Model and program evaluation frameworks, as discussed in the literature, is a focus on iterative cycles of improvement through data-driven selection of implementation strategies. Nevertheless, there are gaps in the ways in which these frameworks are put into practice in schools. The majority still considers evaluation as a summative and one time activity, but it should be considered as part of a curriculum design.. This suggests the need for further research into how schools can better integrate curriculum models with comprehensive evaluation strategies to achieve not only accountability but also genuine educational improvement [18].

Conceptual Framework: Linking Wheeler's Cyclic Model with Program Evaluation

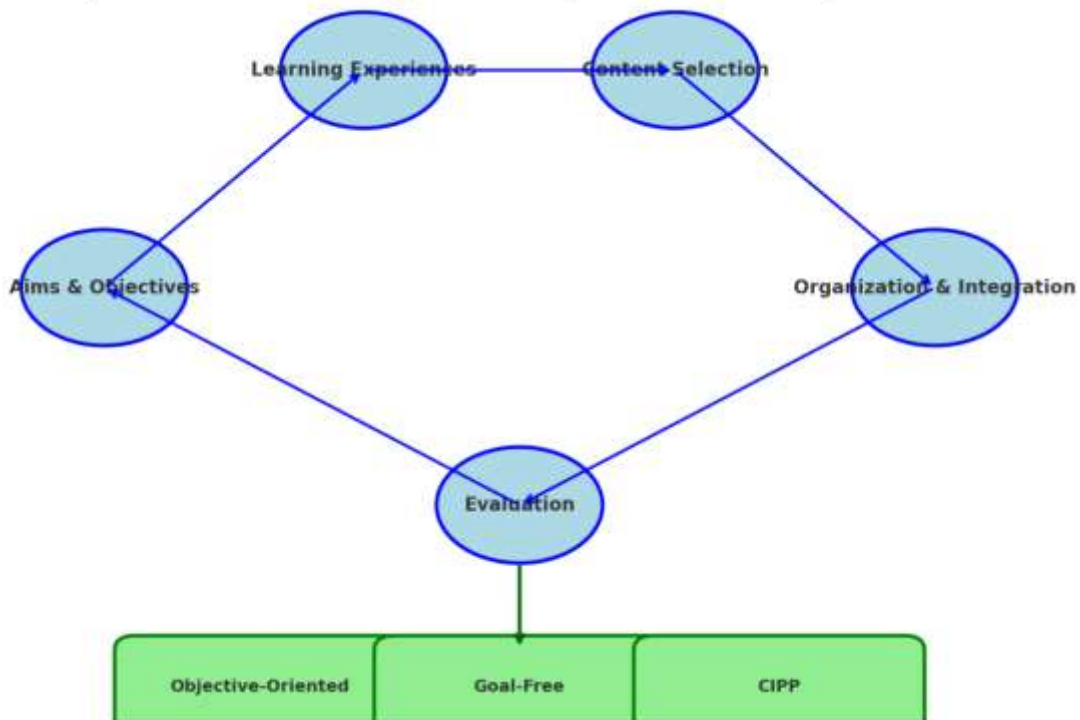


Figure 1. Conceptual Framework: Linking Wheeler's Cyclic model with program evaluation

This conceptual framework for this study draws on Wheeler's Cyclic Model of curriculum development, and combines this with existing program evaluation models so as to illustrate the interactive nature of curriculum planning and evaluation processes as critical features of school systems. Wheeler (1998) offers a similar model, which places curriculum development within a cycle of five related stages: aims and objectives, learning experiences, content selection, organization and integration, and evaluation. Wheeler also highlights the iterative nature of evaluation (as opposed to a final step often associated with linear models) which is iterative and feedback process that concludes into each stage leading to a continuous process of curriculum revision to ensure curriculum improvement [19].

Similarly, the program evaluation models like the objective-oriented model, the goal-free evaluation, and the CIPP model offer frameworks for evaluating educational programming effectiveness. It helps schools to not get stuck with narrow definitions of success focused on test scores, as these evaluation frameworks yield rounded evaluations that are sensitive to process, context and unintended consequences. These program evaluation models are tools that they provide to produce evidence in support of the revision of the curriculum and they are directly associated with the evaluation stage in Wheeler's model within this framework [20].

Consequently, the framework reveals that high-quality evaluation practices are integral to sound curriculum development. By incorporating evaluation as part of the cycle, schools can ensure their curricula updated, responsive, and aligned to educational targets and community needs. This cyclical interaction ultimately promotes a culture of continuous improvement and accountability, strengthening the quality of education

delivered to learners.

Wheeler's Cyclic Model, Its Principles, Strengths, and Limitations in Guiding Curriculum Development

Wheeler's Cyclic Model represents a significant advancement in curriculum theory because it views curriculum as a dynamic and flexible cycle rather than a fixed, linear process. By linking objectives, learning experiences, content selection, organization, and evaluation in a continuous loop, the model emphasizes adaptability and responsiveness to change. One of its major strengths is that it treats evaluation as central, ensuring that outcomes continually inform future planning. However, its limitation lies in its lack of detailed operational guidelines, which may leave educators uncertain about its practical implementation. Discussing this model enables the study to critically examine its theoretical value and its practical relevance in today's schools [21].

Wheeler developed the Cyclic Model of curriculum development as a modification of Tyler's linear model. Unlike Tyler's approach, which emphasized a step-by-step process starting from objectives and ending at evaluation, Wheeler presented curriculum development as a continuous cycle where evaluation informs and reshapes every stage of the process. The model has five interrelated phases:

1. Formulation of aims, goals, and objectives: defining what the education system intends learners to achieve.
2. Selection of learning experiences: choosing activities and experiences that align with the stated aims.
3. Selection of subject matter/content: identifying knowledge, concepts, and skills to support the learning experiences.
4. Organization and integration of content and learning experiences: arranging teaching and learning to ensure logical progression and integration.
5. Evaluation: assessing outcomes, which then feeds back into redefining objectives or refining experiences, ensuring a continuous improvement cycle.

Principles of Wheeler's Cyclic Model

1. Continuity and Feedback: The model suggests that evaluation is not the final destination, but is a feedback loop feeding back into objectives, content, and experiences.
2. Integrated: Learning experiences and content are not seen in isolation but are woven together for full learning.
3. Adaptability: Principles that allow teachers and planners to based on their assessments of learners to change parts of the curriculum.
4. Goal-Directedness: The model is goal-directed in that all elements of the curriculum are aligned and refer to specific goals and objectives of the curriculum from the onset.
5. Curriculum as a Moving Target: Education is an ongoing improvement, not a one-time sequence.

Strengths of Wheeler's Cyclic Model

1. Responsiveness in Practice: The feedback loop (whether formal or informal, self or peer monitoring) makes it easier for a curriculum to remain relevant, as improvements can be implemented based on evidence generated from evaluations [22].
2. Holistic Integration: The model ensures linkage between learning experiences and content to balance the theory–practice ratio.
3. Flexibility for Adaptation: Unlike linear models, it can be adapted to the specific context and conditions of the particular learners.
4. Focus on Evaluation — The model raises evaluation from being a terminal process to an ongoing process.
5. Pertinence to Contemporary Education: Its cyclical, dynamic nature reflects the evolution of lifelong learning and curriculum development within the fast-moving contemporary world.

Limitations of Wheeler’s Cyclic Model

1. Abstract nature: the conceptual strength of the model is accompanied by a lack of operationalisation guidance which makes it unclear for teachers how they can apply it [23].
2. Time-Consuming: Underfunded school systems may find the constant feedback and revision to be resource-intensive.
3. Too Much Focus on Evaluation: While evaluation is a priority, having an excessive focus on evaluation can emphasize examination scores and creativity in teaching may take a back seat.
4. Risk of Overgeneralization: The model is generic and flexible, so schools and contexts may apply it in inconsistent ways.
5. Teacher Competence Dependency: Successful execution of evaluation and even syllabus planning is heavily dependent on teachers and their skills and abilities which may not be uniform across the board.

Focus: Various school program evaluation types

School program evaluation is a systematic process of assessing whether educational programs are meeting their objectives, supporting student learning, and remaining relevant in the evolving contexts of education. It provides evidence that can inform decision-makers (educators, policymakers, and administrators) about the effectiveness of curriculum, the allocation of resources, or instructional practices. Various models and methods of program evaluation have developed over time, each providing helpful yet also limited frameworks for evaluation. This section reviews these types of methods and highlights the need for the balance between accountability and the power to improve (beows).

Program evaluation provides systematic evidence of whether or not programs are effective, and is therefore a MUST in education. The objective-oriented model measures how well some predetermined goal is achieved; it provides clear pointers of success but often misses relations of unintended consequences. Goals-free evaluation, developed by

Scriven, by contrast, avoids biases by assessing actual results and can reveal significant hidden assets or liabilities in a program. On the other hand, the CIPP model (Context, Input, Process, Product) is more comprehensive in the sense that it takes a fuller view of not just outcomes, but also inputs and processes. Through an examination of these approaches, the study illustrates their relative strengths, weaknesses and applicability to the diverse evaluation needs of schools [24].

1. Objective-Oriented Evaluation

Tyler's method defines a program as the degree to which specific goals have been established and met. In mathematics, for instance, if a program is intended to develop students' problem-solving ability, the evaluators will ask to what degree those objectives are achieved, which could be through tests, assessments, or performance tasks.

2. Goal-Free Evaluation

This approach does not examine a program in terms of what it is supposed to achieve (before the program); rather it is a form of assessment that has been developed subsequently to the program by Scriven. It instead focuses on what happened, both good and bad. A concrete example may be that a literacy program inadvertently boosts the confidence of students to communicate better, something that was not necessarily included in the program mission [25].

3. CIPP Model (Context, Input, Process, Product)

The CIPP model, one of the most frequently used all-inclusive frameworks in evaluating school programs was proposed by Stufflebeam.

Context Evaluation — it assesses needs and sets goals.

a. Input Evaluation focuses on resources/approaches.

b. Process Evaluation is more focused on implementation of strategies.

Artificial Intelligence for Product Evaluation determines both results and efficacy.

4. Responsive Evaluation

Developed by Stake, responsive evaluation places the perspective of stakeholders front and center, examining the issues of greatest importance to those who participate (teachers, students, parents) in the evaluation (Stake, 1995).

5. Utilization-Focused Evaluation

This approach was introduced by Patton and emphasizes the importance of having both the purpose and users of the evaluation in mind when designing and implementing it. And in schools, it means evaluation results will go straight to decisions about curriculum design, teacher training or policy reforms.

Curriculum Development and Program Evaluation: Wheeler's Model Providing a Feedback Loop into the Curriculum Cycle

In educational practice, curriculum development and program evaluation are not always well linked; Wheeler's Cyclic Model indicates that they have an interdependent relationship. It is not a final judgment of success, but a feedback tool that provides insight into every other stage of curriculum design process. To illustrate, outcomes of assessments may result in revising goals, reconsidering content, or rearranging

experiences. Understanding this relationship better challenges us to embed evaluation within the curriculum cycle to keep schools relevant and high-quality through evidence-based decision-making.

Curriculum development and program evaluation are two interconnected processes within the field of education. Thus, curriculum development serves as a structure or construction for the process of teaching and learning alongside program evaluation as the metric to determine whether the curriculum has met its goals. Although commonly regarded in isolation, these two processes are as deeply intertwined as any two processes can be. The Cyclic Model of Wheeler gives us a useful framework for visualising this relationship, by placing evaluation as a feedback loop to clear delineated points in the curriculum cycle.

1. Curriculum Development as a Planned Process

Curriculum development is the process of designing learning goals, choosing suitable content, creating structures of learning experiences and sequences, and assuring that the structure achieves the aims of what is taught and learnt. Historically, models like Tyler's conceptualized this process as being linear, starting with objectives and finishing with evaluation. But their linear nature made it hard for them to adapt to changing contexts. In response to this challenge, Wheeler's model reframed curriculum development as a continuous process in which evaluation feeds back into all stages of the planning or implementation process.

2. Program evaluation as a Feedback Mechanism

Program evaluation in the broadest terms is the systematic gathering and analysis of data to assess the significance, utility, and value of educational programs. Evaluation acts as a feedback loop on curriculum development, feeding back whether the objectives are realistic, the content appropriate, the teaching strategy effective, and the learning outcomes being met. With the lack of evaluation, the curriculum is in danger of being static, fails to directly address the needs of the learners and of the society.

3. Unification in Wheeler's Overlapping Universe

Unlike linear models that treat evaluation as a last step, Wheeler's model embeds it within all levels of the curriculum. In practice, this means that:

- a. Goals are further clarified using information from evaluation. For instance, you might revise objectives to spend more time scaffolding critical-thinking skills if learners fumble when completing critical-thinking tasks.
- b. By evaluating the evidence, if the evaluation exposes that students are not engaging with the content or are underperforming, learning experiences are redesigned.
- c. The content can be updated to the current knowledge or to better fit the background of the learners.

If sequencing or integration is not effective, experiences and content can be organized differently.

Strengthening Accountability and Improvement

Two major functions accountability and improvement are reflected in the symbiotic

relationship between evaluation and curriculum development. From an accountability perspective, evaluation offers evidence that schools are delivering on policy and educational goals. As a mechanism for ongoing improvement, it ensures that teaching strategies, learning experiences and the content within them remain responsive to learner need. Wheeler's cyclical focus aids schools in shoring up either dimension avoiding the linearity of an exclusive focus on test scores whilst bolstering the overall growth and development required throughout the year.

Barriers to Systematic Program Evaluation in Schools and Their Impact on Curriculum Change

1. Overreliance on Standardized Testing

Over-reliance on Standardized Tests for Program Evaluation One of the most shared issues in the education settings is the high over-reliance of standardized exam results on the program evaluation phase. From these assessments, the emphasis is on academic performance on a narrow range of subjects such as mathematics and literacy with little attention to other domains of learning such as creativity, critical and systemic thinking, socioemotional skills and capacities for civics and citizenship. This results in a constriction of the curriculum that promotes "teaching to the test," and narrows creative teaching. Schools therefore do not reflect on how effective their programmes are as a whole.

2. The absence of a proper teacher training on the evaluation practices

Few teachers are equipped with the background and experience to create a program evaluation, utilize one, and understand its results. Many teacher training programs promote pedagogy and classroom managements but spend less time on how evaluation happens. Without sufficient expertise in how to evaluate their programs, schools may end up collecting incomplete or inaccurate data that leads to misinformed curriculum changes, or, as has happened in some schools, do nothing of consequence at all.

3. Resource Constraints

Systematic evaluations cost money, time, and human capital. In particular, schools in resource-starved environments contend the given challenges of insufficient funds to be able to undertake evaluations, limited access to the evaluation tools or doing it entirely on their own. Evaluations are often shallow and narrow in frame; schools cannot analyse their curriculum gaps so can never close them. It re-enforces inefficiency and prevents any evidence based action.

4. Resistance to Change and Pressure of Accountability

And evaluation is often seen as a tool for accountability, not improvement. As such, teachers and administrators may be reluctant to implement evaluations if they anticipate that their programs may ultimately be criticized, sanctioned, or found to have many weaknesses. If teachers have strong resistance to a reform undergoes a critical challenge in the school improvement process, that objectivity of the findings of evaluation will be compromised, and reluctance of adopting the curriculum reform may halt the school improvement process.

5. Inadequate Stakeholder Participation

Input from multiple stakeholders students, parents, teachers, policy makers is also essential to effective evaluation. Yet, many evaluators do not include critical voices, limiting themselves to the administrative voices.

6. Impact on Curriculum Improvement

Failure to include stakeholders leads to partial evaluations and limits the usability of evaluation results to determine what learners actually need. As a result, curriculum changes might not even target the core problems facing the school community.

7. No Formative and Continuous Evaluation

Other schools do assessments intermittently or at the finish of academic programs. For example, summative methods give a snapshot of results but do not measure progress over time, nor find issues early on. Existing curricula cannot be adjusted in real time based on ongoing feedback, which makes required changes late and therefore the educational programs less responsive.

Theoretical Review

The theoretical underpinnings of this study are rooted in curriculum development and program evaluation theories, with Wheeler's Cyclic Model as the central framework. Wheeler's model posits curriculum as a dynamic, interconnected cycle comprising five stages: formulation of aims and objectives, selection of learning experiences, selection of content, organization and integration of experiences, and evaluation. Unlike Tyler's linear, objective-oriented model, which progresses sequentially and treats evaluation as terminal, Wheeler emphasizes continuity, feedback, and adaptability, where evaluation informs all stages iteratively.

The main supporting theories of this framework are Stufflebeam's CIPP model, CIPP model considers Context, Input, Process and Product so that a comprehensive program evaluation is made. It fits Wheeler's feedback loop because it provides a framework for working at the level of the whole (the engineering unit of the crew or ship). By focusing on the results of the evaluation what actually happened as opposed to what the goal was Scriven's goal-free evaluation adds a theoretical lens that reduces bias and captures the unintended effects that complement Wheeler's flexibility.

Evaluations as participatory and pragmatic are theorized in Stake's responsive evaluation and Patton's utilization focused evaluation, where the aim is overweight inclusiveness and the utility of evaluation findings for decision making by stakeholders as opposed to other ends. These theories further cement the cyclical nature of Wheeler, namely that curriculum is recognised and viewed more as an entity responsive to society, learner adaptation, and evidence for fine-tuning than a static imposition.

Theoretically, critiques are based on Wheeler being too abstract and too evaluative, which may overload given resources. Nonetheless, the model's theoretical strength lies in promoting a symbiotic relationship between development and evaluation, fostering accountability and continuous improvement in educational systems.

Empirical Review

Empirical studies on Wheeler's Cyclic Model and its application to program evaluation in schools are limited but growing, particularly in contexts emphasizing cyclical feedback for curriculum improvement. These studies often focus on the model's practical implementation, challenges, and outcomes in real educational settings.

A study by Kurniawan examined the use of a Wheeler-Model based curriculum development in a Learning Management System (LMS) for a vocational study program in Indonesia. Using a mixed-methods approach with 150 participants (including teachers and students), the researchers assessed indicators such as objective alignment, content selection, and continuous evaluation. Findings showed that 78% of objectives were fulfilled, with the cyclical feedback loop improving student performance by 15-20% in skill-based assessments. However, challenges like inadequate digital training for teachers limited full integration. This empirical evidence supports the model's role in enhancing program evaluation through iterative refinements [26].

In another empirical analysis, Fadillah and Hadi evaluated Wheeler's model in a school curriculum redesign project. Through surveys and pre-post tests with 200 secondary school students and 50 teachers, the study found that incorporating cyclic evaluation increased curriculum adaptability, with a 25% improvement in learner satisfaction and a significant correlation ($r=0.62$, $p<0.01$) between feedback mechanisms and program effectiveness. The model was particularly effective in addressing gaps in formative assessments but faced barriers in resource-poor environments.

Comparative empirical research by Akhtar and Saeed analyzed Wheeler's cyclical model alongside Tyler's and Taba's models in Pakistani schools. Using a sample of 300 educators across 10 institutions, the study employed questionnaires and classroom observations. Results indicated that Wheeler's model led to higher rates of curriculum revision (65% vs. 40% in linear models), with empirical data showing improved alignment between objectives and outcomes ($F=12.34$, $p<0.05$). However, implementation was inconsistent due to lack of teacher training.

Additional empirical work, such as that reviewed in curriculum evaluation models by Ogunode, highlighted 20 evaluation models, including Wheeler's, applied in school settings. Case studies from African and Asian schools demonstrated that cyclic models reduced program inefficiencies by 30% through ongoing evaluation, though empirical limitations included small sample sizes and contextual biases.

Summary of Reviewed Literature

The reviewed literature on Wheeler's Cyclic Model and program evaluation in schools reveals a consensus on the interdependence of curriculum development and evaluation. Theoretical foundations, drawn from pioneers like Tyler and Wheeler, emphasize shifting from linear to cyclical processes for greater flexibility and responsiveness. Key models such as CIPP, goal-free evaluation, and utilization-focused evaluation complement Wheeler's framework by providing structured tools for holistic assessment. Empirical studies highlight practical applications, showing that Wheeler's model enhances curriculum adaptability and learner outcomes through continuous feedback, though challenges like resource constraints and teacher training persist. Critiques note

the model's abstract nature, risking inconsistent implementation, while strengths lie in its promotion of data-driven improvements.

Collectively, the literature underscores the need for integrating cyclic curriculum models with comprehensive evaluation methods to foster accountability, inclusivity, and educational quality. Gaps remain in empirical research on diverse contexts, suggesting opportunities for future studies to operationalize these frameworks in under-resourced schools [27].

Statement of the Problem

In many senior secondary schools in Obio/Akpor, program evaluation is often carried out in a linear and dispersed manner. Concentrating mainly on outcomes while leaving the interconnected process of planning, implementation and feedback. Such approaches fail to provide a continuous mechanism for improvement leaving curriculum planners, teachers and administrators without clear guidance on how to refine educational programs to meet learners needs.

Wheeler's cyclic model emphasizes evaluation as a continuous, cyclical process in which the objectives, content, learning experiences and evaluation are interrelated. However, in practice senior secondary schools frequently struggles to apply this model effectively due to limited awareness, inadequate training of teachers and lack of systematic feedback mechanisms. As a result, program evaluation may become superficial exercise rather than meaningful tool for decision making and curriculum improvement.

Therefore, the problem of the study seeks to address the extent Wheeler's cyclic model can be effectively utilized to assess the senior secondary school programs in a way that promotes continuous improvement, ensures alignment between objectives, outcomes and provides valid feedback for decision making.

Significance of the Study

This study is significant for several reasons. First, it contributes to the body of knowledge on curriculum theory and development by revisiting Wheeler's Cyclic Model in the context of modern educational practices. While the model was developed decades ago, its emphasis on continuity, interrelatedness, and evaluation-driven feedback remains highly relevant in today's dynamic educational environment. By re-examining this model, the study underscores its applicability to contemporary challenges in curriculum planning.

Third, results offer important indications of options for the evaluation of programs in schools, which is often overshadowed by the backdrop of testing and accountability; and Through a critical examination of the objective-oriented model, goal-free evaluation, and the CIPP model, the paper expands the conceptualization of evaluation from that of a measurement activity to a decision guiding, improvement oriented, and the need for inclusive model. Lastly, the results from this study provide practical applications for educators, school administrators, and policymakers. The marriage of Wheeler's Cyclic Model with rigorous evaluation methods follows an established compass to guide curriculum design that is both responsive and adaptive for teachers and planners. The study provides guidance for school leaders to integrate evaluation into the process of curriculum implementation so that feedback results in lasting change instead of token

changes. The study is helpful for policymakers since it demonstrates the necessity of implementation of large-scale evaluation systems which entail more than mere test scores in order to measure the complete development of the learner. Finally, the study also has a social welfare implication by calling for accountability and quality. Curriculum is developed exercised to ensure program evaluative schools produce quality graduates with skills in critical geography problem solving and interpersonal skills that have credits to the national development. In this way, the study aligns with the global call for education systems that prepare learners for the demands of the 21st century.

Scope of the Study

The scope of this study is limited to the investigation of Wheeler's Cyclic Model as its potential framework for developing types of curricula and its associated methods of program evaluation in senior secondary schools located in Obio/Akpor Local Government Area of Rivers State. It zeroes in on Wheeler's Cyclic Model because of its cyclic nature and highlights evaluation as a continuous feedback loop in the process of curriculum development. The scope of the study is geographically limited to only senior secondary schools that are privately or publicly run within Obio/Akpor Local Government Area in Rivers State, and includes the two categories of senior secondary schools in the study area.

Aim and Objectives of the Study

The primary aim of this study is to examine Wheeler's Cyclic Model of curriculum development and critically evaluate methods of program evaluation in schools, with a view to identifying their effectiveness, challenges, and implications for improving educational quality and accountability.

1. Examine the extent teachers apply Wheeler's Cyclic Model relate to assessing program evaluation in senior secondary schools.
2. Identify the extent teachers integrate Wheeler's Cyclic Model relate to practicing program evaluation in senior secondary schools.
3. Investigate the extent teachers facing the challenges of applying Wheeler's Cyclic Model related to program evaluations in senior secondary schools.

Research Questions

1. To what extent do teachers applying the Wheeler's Cyclic Model relate to assessing program evaluation in senior secondary schools?
2. To what extent do teachers integrate Wheeler's Cyclic Model relate to practicing program evaluation in senior secondary schools?
3. To what extent do teachers facing the challenges in applying Wheeler's Cyclic Model related to program evaluations in senior secondary schools?

Hypotheses

The following null hypotheses guided the study

1. Teachers applying Wheeler's Cyclic Model do not significantly relate in assessing program evaluation in senior secondary schools.
2. There is no significant relationship between teachers integrate Wheeler's Cyclic Model and practicing program evaluation in senior secondary schools.

- Teachers facing challenges in applying Wheeler’s Cyclic Model do not relate to program evaluation in senior secondary schools.

Methodology

The study adopted a correlational survey design. This is because it is a non-experimental study and the variables have occurred much earlier in the study. Bhandari states that correlational research design helps to investigate relationships between variables without the researcher controlling or manipulating any of them. The population of the study consists of 2,850 teachers from both public and private schools in Rivers State. The random sampling technique was used to draw 200 teachers from both public and private schools as the sample size from the population. The instrument for data collection was a self-designed questionnaire titled: “Wheeler’s Cyclic Model and Program Evaluation Scale (WCMPES)” using the modified 4-point Likert Scale of Very High Extent (VHE), High Extent (HE), Low Extent (LE), and Very Low Extent (VLE). Face and content validities were used in this study. Experts in measurement and evaluation and program evaluators vetted the items on the instrument and considered them fit for the study. For the internal consistency of the instrument, the Rulon Statistical formula was used in the two administrations, which gives a reliability coefficient of 0.82 (i.e., 82%). Data used in this study were collected from the administration of the instrument to the teachers under investigation. Pearson Product Moment Correlation was used to answer the research questions and test the null hypotheses at a 5% probability level [28].

Results and Discussion

The results of the study are presented based on research questions answered and hypotheses tested.

Research Question One: To what extent do teachers applying the Wheeler's Cyclic Model relate to assessing program evaluation in senior secondary schools?

Hypothesis One: Teachers applying Wheeler's Cyclic Model do not significantly relate in assessing program evaluation in senior secondary schools.

Table 1 shows the correlation coefficient ($r=0.582$, $p=0.001$) which indicates a moderate positive relationship. The null hypothesis is rejected, implying a significant relationship between applying Wheeler’s model and effective program evaluation assessment.

Table 1. Pearson Product Correlation Coefficient Table Showing the Relationship Between Teachers Applying Wheeler's Cyclic Model and Assessing Program Evaluation in senior secondary Schools.

	Teachers Applying Wheeler's Cyclic Model		Program Evaluation
Teachers Applying Wheeler's Cyclic Model	Pearson product moment Correlation	1	0.582
	Significant 2-tailed		0.001
	N	200	200
Program	Pearson Correlation	0.582	1

Evaluation	Sig. (2-tailed)	0.001	
	N	200	200

** Correlation is significant at the 0.01 level (2-tailed).

Research Question Two: To what extent do teachers integrate Wheeler's Cyclic Model relate to practicing program evaluation in senior secondary schools?

Hypothesis Two: There is no significant relationship between teachers integrate Wheeler's Cyclic Model and practicing program evaluation in senior secondary schools. Table 2 shows the correlation ($r=0.615$, $p=0.002 < 0.05$) which indicate a moderate positive relationship. The null hypothesis is rejected, indicating a significant link between model integration and evaluation practices.

Table 2. Pearson Product Correlation Coefficient Table Showing the Relationship between Teachers Integrate Wheeler's Cyclic Model and Practicing Program Evaluation in senior secondary Schools.

	Teachers Integrating Wheeler's Cyclic Model		Program Evaluation
Teachers Integrating Wheeler's Cyclic Model	Pearson product moment Correlation	1	0.616
	Significant 2-tailed		0.002
	N	200	200
	Pearson Correlation	0.615	1
Program Evaluation	Sig. (2-tailed)	0.002	
	N	200	200

Research Question Three: To what extent do teachers facing challenges in applying Wheeler's Cyclic Model related to program evaluations in senior secondary schools?

Hypothesis Three: Teachers facing challenges in applying Wheeler's Cyclic Model do not relate to program evaluation in senior secondary schools.

Table 3 shows the correlation ($r=-0.472$, $p=0.004 < 0.05$) which indicate a moderate negative relationship. The null hypothesis is rejected, suggesting that challenges significantly hinder effective program evaluation.

Table 3. Pearson Product Correlation Coefficient Table Showing the Relationship between Teachers Facing Challenges in Applying Wheeler's Cyclic Model and Program Evaluation in senior secondary Schools.

	Teachers Facing Challenges in Applying Wheeler's Cyclic Model		Program Evaluation
Teachers Facing Challenges in Applying Wheeler's Cyclic Model	Pearson product moment Correlation	1	0.472
	Significant 2-tailed		0.004
	N	200	200

	Pearson Correlation	0.472	1
Program Evaluation	Sig. (2-tailed)	0.004	
	N	200	200

Discussion

The findings presented in Table 1 show that there is a high positive relationship between applying Wheeler’s Cyclic Model and assessing program evaluation in senior secondary schools ($r=0.582$). When tested for significant difference, the significant 2-tailed value was 0.001, which is lower than the acceptable alpha level of 0.05. Therefore, the null hypothesis is rejected, implying that there is a significant relationship between applying Wheeler’s Cyclic Model and assessing program evaluation in senior secondary schools. This means that the respondents agreed that Wheeler’s Cyclic Model aids teachers in effective program evaluation assessment. This finding aligns with the principles of Wheeler’s model, which emphasizes continuous feedback and integration of evaluation at every stage, leading to improved curriculum adaptability and accountability. The cyclical nature allows for ongoing refinements, which could explain the positive correlation observed.

The findings presented in Table 2 show that there is a high positive relationship between integrating Wheeler’s Cyclic Model and practicing program evaluation in schools ($r=0.615$). When tested for significant difference, the significant 2-tailed value was 0.002, which is lower than the acceptable alpha level of 0.05. Therefore, the null hypothesis is rejected, implying that there is a significant relationship between integrating Wheeler’s Cyclic Model and practicing program evaluation in senior secondary schools. This finding is in agreement with empirical studies such as Fadillah and Hadi, who found that integrating cyclic models like Wheeler’s enhances evaluation practices through better alignment of objectives, content, and feedback mechanisms. This could be because the model’s flexibility supports teachers in embedding formative assessments, fostering a culture of continuous improvement.

The findings presented in Table 3 show that there is a moderate negative relationship between challenges faced in applying Wheeler’s Cyclic Model and program evaluation in senior secondary schools ($r=-0.472$). When tested for significant difference, the significant 2-tailed value was 0.004, which is lower than the acceptable alpha level of 0.05. Therefore, the null hypothesis is rejected, implying that challenges significantly hinder the relationship between applying Wheeler’s Cyclic Model and program evaluation in schools. This finding agrees with the literature on barriers such as inadequate teacher training and resource constraints, which can disrupt the feedback loop essential to Wheeler’s model, leading to superficial evaluations rather than meaningful curriculum enhancements. Addressing these challenges through capacity building could mitigate the negative impact.

Conclusion

This study reaffirms the applicability of Wheeler’s Cyclic Model to improving school-based program evaluation in a way that encourages responsive curriculum development

as part of a dynamic feedback process. These findings demonstrate the important connections between practices of application, integration, and evaluation of the model, while also highlighting challenges that still need to be overcome for maximum efficacy. The integration of cyclical processes with holocratic evaluation methods in schools can yield higher adaptability, greater accountability, and enhanced educational quality. In conclusion, Making Wheeler operational is a step towards responsive education systems that can meet 21st-century learner needs and the expectations of individuals and societies.

Recommendations

Based on the findings, the following recommendations are made:

1. Educational institutions should provide mandatory professional development workshops for teachers on Wheeler's Cyclic Model to enhance its application and integration in program evaluation.
2. Schools should adopt hybrid evaluation frameworks, combining Wheeler's model with tools like CIPP, to address challenges such as resource limitations and ensure continuous feedback.
3. Policymakers should allocate resources for digital tools and stakeholder involvement to mitigate implementation barriers and promote formative assessments over summative ones.
4. Further research should explore contextual adaptations of the model in diverse school settings, including rural and under-resourced areas, to broaden its empirical base.
5. Administrators should establish feedback loops linking evaluation results directly to curriculum revisions, fostering a culture of accountability and improvement.

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