THE RELATIONSHIP BETWEEN CURRICULUM DESIGN AND STRUCTURE AND EDUCATIONAL QUALITY ASSESSMENT: A CASE STUDY OF SECONDARY SCHOOLS IN NEIQIU COUNTY, XINGTAI CITY, HEBEI PROVINCE, CHINA

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ABSTRACT
This quantitative study examined the levels of curriculum design and structure, educational quality assessment, and the relationship between these variables in secondary schools in Neiqiu County, Xingtai City, Hebei Province, China. The sample consisted of 134 teachers and administrators selected through stratified random sampling based on Taro Yamane's formula. Data were collected using a validated and reliable questionnaire developed from established theories of curriculum design and educational quality assessment. Descriptive statistics were used to analyze respondents' characteristics and perception levels, while Pearson's correlation coefficient was applied to test the hypothesis. The results showed that curriculum design and structure had a statistically significant but low positive relationship with educational quality assessment. Among all dimensions, sociocultural approaches to curriculum design demonstrated the strongest relationship, indicating the importance of connecting curriculum with learners' contexts and community environments. Other components, including curriculum design principles, the role of administrators, and theoretical definitions of curriculum design, also showed low correlations, suggesting that curriculum alone cannot determine educational quality without effective teaching, supportive leadership, and conducive learning conditions.
Keywords: Curriculum Design and Structure, Educational Quality Assessment, Secondary Schools

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INTRODUCTION

The advancement of educational reform in the People's Republic of China, under the national goal of achieving educational modernization by 2035, has placed significant emphasis on curriculum redesign, teacher preparedness, and transforming learning cultures to align with the competencies required in the twenty-first century. Central to these reforms is the development of competence-based learning, which aims to reduce reliance on rote memorization and examination-driven instruction while promoting creativity, problem-solving, and innovation (Zhu, 2019; Wang, 2019). However, a substantial body of research indicates that teachers continue to face constraints arising from high-stakes examination systems such as the Gaokao, which profoundly shape instructional practices and pose obstacles to innovative learning approaches (Cheng & Hamid, 2025). Government efforts to expand school-based curriculum development have been introduced to allow schools to adapt national standards to local contexts while maintaining national goals (Li & Aziz, 2024), yet the success of this model depends heavily on teachers' professional readiness, confidence, and ability to design and integrate new curricular approaches effectively.

Parallel to curriculum reform, the Education Informatization 2.0 initiative has accelerated China's transition toward digital education, promoting the use of online platforms, digital resources, and artificial intelligence in classrooms. This shift has heightened expectations regarding teachers' capabilities to incorporate technology meaningfully into instructional design (Ma, 2025). Nevertheless, policy evidence shows that disparities in professional development and inconsistent teacher training continue to limit the potential of this digital transition, particularly in provincial and rural areas (Zhi et al., 2024). These challenges highlight that enhancing curriculum quality and assessment practices cannot rely solely on national policy frameworks; instead, they require consideration of teacher readiness, institutional support, and systemic conditions at the school level, all of which directly influence classroom implementation.

Multiple studies further affirm that many teachers perceive themselves as constrained by examination-oriented cultures, which inhibit full adoption of competency-based and technology-enhanced learning (Deng et al., 2024). Although school-based curriculum development provides opportunities for teachers to tailor content to student needs, its effectiveness largely depends on teachers' capability to integrate competency skills with assessment systems that remain tied to examination expectations (Li & Aziz, 2024; Xu & Wong, 2011). Moreover, the expansion of digital technologies under Education Informatization 2.0 has transformed learning structures, assessment processes, and teacher roles—changes that require sustained support through training, collaborative lesson design, and systemic supervision to ensure durable transformation (Wang, 2019).

At the school level, curriculum reform and technological integration present both opportunities and challenges, particularly for provincial schools such as Neiqiu Middle School, which serves as a model for implementing China's modern education policies. The adoption of competence-based frameworks, digital learning, and quality management necessitates robust infrastructural support, digital resources, and—most importantly—a teaching workforce equipped with the knowledge, awareness, and skills to support system-wide transition. The relationship between curriculum design and the quality of educational assessment thus becomes crucial in understanding the extent to which national policies can be translated into practical implementation within provincial school contexts that face resource limitations and academic pressures.

Thus, examining the relationship between curriculum design and structure and the assessment of educational quality in secondary schools in Hebei Province is vital for explaining the broader trajectory of educational reform during China's transition toward digital and competency-based learning. This study seeks to investigate the levels of curriculum design and structure alongside

educational quality assessment, and to analyze the relationship between these variables in the context of secondary schools in Neiqiu County, Xingtai City. The findings aim to illuminate the systemic factors influencing the success of educational reform at the operational level, with two primary objectives: 1) to examine the levels of curriculum design and structure and educational quality assessment, and 2) to analyze the relationship between curriculum design and structure and educational quality assessment in the target schools selected for this research.

LITERATURE REVIEWS

Curriculum Design and Structure

Curriculum design serves as a foundational pillar of instructional systems, as it establishes the framework that shapes learning objectives, content organization, and the structuring of learning experiences—all of which directly influence the quality of educational processes within schools (Connelly, 1972). Connelly conceptualized curriculum design as a systematic process that organizes knowledge and constructs coherent learning experiences to ensure that learners develop according to educational objectives. Core principles of curriculum design—such as continuity, sequence, and integration—are essential in developing a balanced and effective curriculum capable of promoting meaningful learning outcomes (Connelly, 1972).

Sociocultural approaches to curriculum design emphasize the alignment of the curriculum with learners' needs and social contexts, enabling learning to be more meaningful and relevant to real-world situations (Xu & Wong, 2011). Meanwhile, the role of school administrators is viewed as central to successful curriculum reform. Administrators guide, monitor, and support teachers in implementing the curriculum, and their ability to manage resources and provide strategic leadership significantly influences the success of curricular initiatives (Li & Aziz, 2024). Consequently, curriculum design and structure constitute a systemic framework composed of design principles, sociocultural perspectives, and administrative mechanisms—each contributing to the overall quality and effectiveness of educational provision.

Educational Quality Assessment

Educational quality assessment functions as a critical mechanism for enhancing the performance of learners, teachers, and schools by utilizing multiple indicators to evaluate the effectiveness of instructional processes (Deng & Zhengmei, 2020). Student achievement remains a key indicator, reflecting the extent to which curriculum objectives are met. Critical thinking skills serve as another essential measure of higher-order cognitive ability, a competency increasingly vital in the twenty-first century (Wang, 2019).

Teacher performance and engagement are equally important, as teachers enact the curriculum and guide students' learning directly (Deng et al., 2024). Contemporary assessments also incorporate the use of technology integration and interactive learning environments, which broaden instructional possibilities and strengthen teaching quality (Ma, 2025).

At the institutional level, indicators such as school rankings, enrollment trends, and graduation rates represent the public profile and capacity of schools—metrics strongly influenced by the quality of the curriculum and instructional effectiveness (Cheng & Hamid, 2025). Thus, educational quality assessment is a holistic system reflecting student outcomes, teacher effectiveness, and school-level capacities.

Relationship between Curriculum Design and Structure and Educational Quality Assessment

The relationship between curriculum design and educational quality is supported by both theoretical and empirical evidence. Connelly (1972) proposed that systematically designed curricula can effectively enhance learning outcomes, and Deng and Zhengmei (2020) further argued that various dimensions of educational quality—including achievement, critical thinking skills, and teacher engagement—are fundamentally linked to the clarity and coherence of curriculum structure.

Numerous studies have found that well-designed curricula shape instructional direction, assessment methods, and classroom practices, thereby increasing the reliability and effectiveness of educational quality assessments (Zhu, 2019; Xu & Wong, 2011). Schools with clear and socially responsive curriculum structures tend to perform better in quality evaluations, particularly in areas involving technology integration and student achievement (Ma, 2025; Wang, 2019).

Given this theoretical and empirical foundation, the following hypothesis was formulated:

H1: There is a positive relationship between curriculum design and structure and educational quality assessment.

From the literature review, the conceptual framework can be drawn as shown in Figure 1.

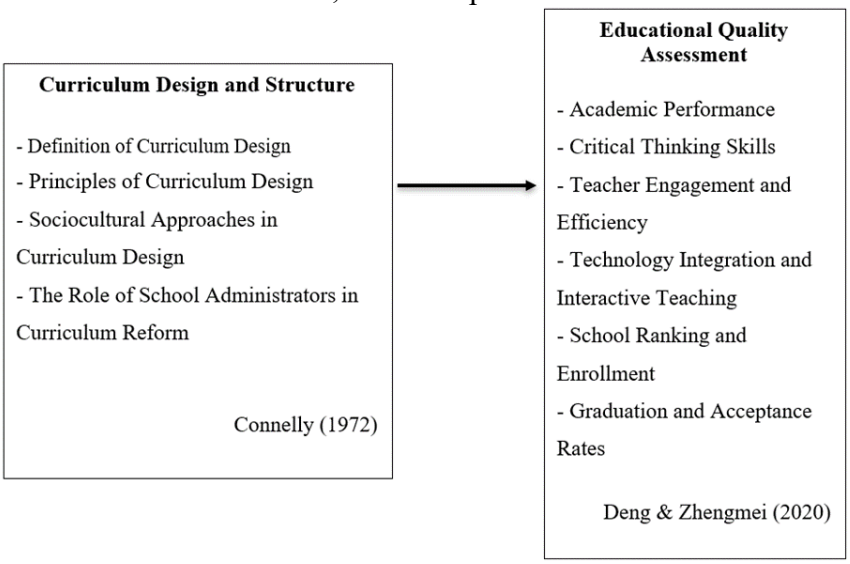

Figure 1 Conceptual Framework

RESEARCH METHODOLOGY

This study employed a quantitative research design to examine the levels of curriculum design and structure, as well as educational quality assessment, and to analyze the relationship between these two variables within secondary schools in Neiqiu County, Xingtai City, Hebei Province, People's Republic of China, an area undergoing national educational reform and standard enhancement. The research population comprised 180 teachers and 20 school administrators, totaling 200 individuals. Using Taro Yamane's formula (1973) at a 95 percent confidence level and a 5 percent margin of error, the required sample size was calculated to be 134 participants. A stratified random sampling technique was adopted based on two strata, teachers and administrators, to ensure proportional representation consistent with the actual population structure. Since the 20 administrators represented 20 percent of the total population, this proportion was applied to the sample size of 134, resulting in a proportional estimate of 13.4 administrators, which was rounded to 14. Accordingly, the final sample consisted of 120 teachers and 14 school administrators, totaling 134 respondents.

The research instrument was a questionnaire constructed based on theoretical and conceptual frameworks related to curriculum design and educational quality assessment. The instrument comprised three sections: respondents' demographic information, curriculum design and structure, and educational quality assessment. Sections two and three utilized a five-point Likert scale. The questionnaire underwent content validation through an Index of Item-Objective Congruence (IOC) review by experts, with all items exceeding 0.50. Reliability testing using Cronbach's Alpha yielded values greater than 0.70, indicating acceptable internal consistency for field administration. Data collection was conducted in coordination with the

schools, ensuring that questionnaires were completed by participants under appropriate conditions.

Data analysis employed descriptive statistics—including frequency, percentage, mean, and standard deviation—to summarize general information and respondents' perceptions. Hypothesis testing was performed using inferential statistics, specifically Pearson's correlation coefficient, to examine the relationship between curriculum design and structure and educational quality assessment. This analytical approach aligned with the study's hypothesis that the two variables are positively correlated.

RESEARCH RESULTS

Results of general data analysis of respondents

The majority of respondents were teachers, totaling 120 individuals (89.55%). Among them, 76 were male (56.72%) and 58 were female (43.28%). Most respondents were between 31 and 40 years of age (73 individuals, 54.48%) and had predominantly accumulated 1-5 years of work experience (54 individuals, 40.30%).

Level of Respondents' Opinions

Table 1 Shows the mean and standard deviation of curriculum design and structure

Curriculum Design and Structure	$\bar{X}$	SD	Level of opinion
Definition of Curriculum Design	3.96	.94	High
Principles of Curriculum Design	4.00	.93	High
Sociocultural Approaches in Curriculum Design	4.00	.91	High
The Role of School Administrators in Curriculum Reform	3.94	.98	High
Total	**3.98**	**.92**	**High**

From Table 1, it was found that the majority of respondents had an overall opinion on curriculum design and structure at a high level ($\bar{X}$ = 3.98, SD = .92). When considering each aspect, respondents had the highest opinion on Sociocultural Approaches in Curriculum Design ($\bar{X}$ = 4.00, SD = .91), followed by Principles of Curriculum Design ($\bar{X}$ = 4.00, SD = .93), and the lowest on The Role of School Administrators in Curriculum Reform ($\bar{X}$ = 3.94, SD = .98).

Table 2 Shows the mean and standard deviation of educational quality assessment

Educational Quality Assessment	$\bar{X}$	SD	Level of opinion
Academic Performance	3.89	1.00	High
Critical Thinking Skills	3.89	.95	High
Teacher Engagement and Efficiency	3.90	1.00	High
Technology Integration and Interactive Teaching	3.89	1.00	High
School Ranking and Enrollment	3.86	.98	High
Graduation and Acceptance Rates	3.86	.98	High
Total	**3.88**	**.96**	**High**

From Table 2 it was found that the majority of respondents had an overall opinion on educational quality assessment at a high level ($\bar{X}$ = 3.88, SD = .96). When considering each aspect, respondents had the highest opinion on Teacher Engagement and Efficiency ($\bar{X}$ = 3.90, SD = 1.00), followed by Critical Thinking Skills ($\bar{X}$ = 3.89, SD = .95), and the lowest on School Ranking and Enrollment and Graduation and Acceptance Rates ($\bar{X}$ = 3.86, SD = .98).

Relationship between Curriculum Design and Structure and Educational Quality Assessment

Table 3 Shows the results of the correlation analysis between each dimension of the independent variables and the dependent variable

	X1	X2	X3	X4	Y1	Y2	Y3	Y4	Y5	Y6
X1	-	.932**	.943**	.935**	.195*	.190*	.238**	.190*	.221**	.190*
X2		-	.930**	.939**	.224**	.217**	.251**	.210**	.242**	.218**
X3			-	.933**	.231**	.231**	.267**	.212**	.246**	.232**
X4				-	.208**	.195*	.228**	.204**	.226**	.199*
Y1					-	.935**	.939**	.927**	.937**	.934**
Y2						-	.943**	.931**	.932**	.947**
Y3							-	.938**	.951**	.940**
Y4								-	.938**	.935**
Y5									-	.939**
Y6										-

** Correlation is significant at the 0.01 level
* Correlation is significant at the 0.05 level

From Table 3, it was found that all variables related to curriculum design and structure (X1-X4) exhibited positive and statistically significant correlations with the sub-dimensions of educational quality assessment (Y1-Y6) at the 0.01-0.05 significance levels. When examining the pairwise relationships by independent variable, the overall curriculum design variable (X) demonstrated correlations with all dimensions of educational quality (Y1-Y6) ranging from approximately .190 to .267. These values fall within the range of low positive correlations, indicating weak but statistically significant relationships at the .05 and .01 levels, which support the proposed hypothesis H1.
However, the intercorrelations among the independent variables themselves, as well as among the dependent variables, were found to be extremely high, each exceeding .90. Furthermore, an additional test of the overall hypothesis for the dependent variables was conducted, and the results are presented in Table 3

Table 4 Shows the relationship between curriculum design and structure and educational quality assessment

Curriculum Design and Structure	**Educational Quality Assessment**		
	r	**Sig.**	**Level of correlations**
Definition of Curriculum Design	.209**	.008	Low positive relationship
Principles of Curriculum Design	.233**	.003	Low positive relationship
Sociocultural Approaches in Curriculum Design	.243**	.002	Low positive relationship
The Role of School Administrators in Curriculum Reform	.216**	.006	Low positive relationship

** Correlation is significant at the 0.01 level
* Correlation is significant at the 0.05 level

From Table 4, it was found that all components of curriculum design and structure demonstrated low-level positive correlations with educational quality assessment, with correlation coefficients (r) ranging from .209 to .243 and reaching statistical significance at the .01 level. Among these components, Sociocultural Approaches in Curriculum Design showed the strongest correlation, followed by Principles of Curriculum Design and The Role

of School Administrators in Curriculum Reform, while Definition of Curriculum Design exhibited the weakest correlation.

DISCUSSION & CONCLUSION

The findings of this study provide valuable insights into the complex relationship between curriculum design and structure and educational quality assessment within secondary schools in Neiqiu County. Although the results reveal statistically significant positive correlations, the correlation coefficients remain low, indicating that curriculum design alone cannot sufficiently account for variations in educational quality. This suggests that educational outcomes in the local context are shaped by the interplay of multiple interdependent factors, including teacher instructional competence, administrative leadership, sociocultural pressures, school learning environments, and the availability of educational resources. In particular, structural challenges typical of examination-oriented systems, such as the "Gaokao-driven" culture, inconsistencies in curriculum implementation, and disparities in teacher readiness, may reduce the extent to which curriculum design translates directly into improvements in educational quality.

The strongest correlation was observed in the dimension of Sociocultural Approaches in Curriculum Design, reflecting the importance of contextualizing curricula within learners' lived experiences and community environments. This finding aligns with the perspectives of Bernard (2024) and Zhu et al. (2021), who emphasize that learning is deeply embedded in social and cultural contexts. Curricula that incorporate local values, community realities, and learners' sociocultural identities are more likely to foster engagement, promote shared meaning-making, and strengthen cognitive development. The consistency of these results reinforces the principle that sociocultural responsiveness is essential for enhancing educational quality, particularly in regions undergoing rapid social and educational transformation.

Similarly, the principles underpinning curriculum design displayed a low positive correlation with educational quality, a finding consistent with Angcuan and Lumyaen (2024). While curriculum principles provide a conceptual framework for instructional design, their practical impact depends on the effectiveness of implementation, the capacity of teachers to translate these principles into practice, and the extent of instructional collaboration within schools. Curriculum principles in isolation cannot produce significant educational gains unless supported by pedagogical infrastructures, professional development, and systems that ensure coherence between curriculum intentions and instructional practices.

The dimension related to the role of school administrators in curriculum reform also revealed a modest correlation. Although administrators are central to instructional leadership, they often face practical limitations, including administrative burden, insufficient curriculum-related training, and limited resources. Such constraints may hinder their ability to provide sustained support for curriculum innovation. In practice, the success of curriculum reform requires structured leadership mechanisms, professional capacity-building, and policy alignment. The findings of this study therefore highlight the need for strengthening administrators' roles through targeted training and systemic support.

The weakest correlation was found in the dimension addressing definitions of curriculum design. This result is consistent with the arguments of Munna and Kalam (2021) and Twining et al. (2021), who contend that theoretical definitions of curriculum do not automatically influence educational quality unless they are operationalized through effective teaching strategies, assessment practices, and classroom processes. When gaps exist between curricular intentions and classroom realities, the potential impact of curriculum design diminishes. Therefore, the ability of teachers to interpret and implement curriculum meaningfully is crucial for achieving intended educational outcomes.

A notable methodological observation pertains to the extremely high intercorrelations among the independent variables, as well as among the dependent variables, each exceeding .90. Such

values indicate substantial overlap among the subdimensions within the constructs, suggesting that respondents may perceive several dimensions as representing similar or closely related constructs. This raises questions regarding the discriminant validity of the measurement instrument and implies potential redundancy in how dimensions of curriculum design and educational quality are conceptualized. Importantly, these high intercorrelations help contextualize the main findings: although the components of curriculum design are internally cohesive, they collectively exhibit only a weak relationship with educational quality. This reinforces the conclusion that curriculum design, even when well-structured, is not the primary driver of educational quality in the studied context.

In conclusion, while curriculum design and structure play important roles in shaping educational outcomes, they do not function as the sole determinants of educational quality. Rather, educational quality emerges from the interaction of sociocultural, pedagogical, administrative, and institutional variables. The relatively stronger influence of sociocultural considerations underscores the need for curriculum development that prioritizes contextual relevance, community engagement, and cultural inclusivity. Enhancing educational quality thus requires comprehensive reform efforts that integrate curriculum development with teacher professional development, leadership strengthening, assessment innovation, and improved resource allocation.

Looking ahead, future research would benefit from methodological diversification through mixed-methods designs, qualitative inquiry, or case studies to explore contextual factors influencing the curriculum-quality relationship more deeply. Scholars should also examine potential mediating and moderating variables, such as instructional leadership, teaching quality, learner motivation, and school culture, to gain a more complete understanding of the systemic mechanisms through which curriculum design influences educational outcomes. Expanding future studies across different educational levels and geographical contexts would also provide comparative insights and support the development of flexible, context-responsive curriculum models.

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