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How Teaching Behavior Mediates the Impact of Curriculum Change on Teaching Effectiveness

Nelly Budiyarti
S1 Accounting, Pamulang University, Indonesia
nellybudiyarti@gmail.com

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ABSTRACT

Abstract: *Curriculum changes are necessary to align with current technological advancements, ensuring that the quality of graduates meets the demands of the workforce. These changes must be accompanied by improvements in teachers' instructional behavior, enabling them to implement the curriculum effectively, creatively, and innovatively in the classroom. This study aims to empirically analyze and demonstrate the impact of curriculum changes on learning effectiveness, with teachers' instructional behavior serving as a mediating variable. The study involved a sample of 150 respondents—comprising both teachers and students—selected using convenience sampling. Data analysis was conducted using path analysis to examine the direct effects of the independent and mediating variables on the dependent variable, as well as the indirect effect of the independent variable on the dependent variable through the mediating variable. The results indicate that curriculum change has a direct effect on teaching effectiveness, with a path coefficient of 0.286 and a t-value of 3.584 which is greater than 1.96; teaching behavior has a direct effect on teaching effectiveness, with a path coefficient of 0.503 and a t-value of 6.309 greater than 1.96; curriculum change has a direct effect on teaching behavior, with a path coefficient of 0.905 and a t-value of 25.919 greater than 1.96; and curriculum change influences teaching effectiveness through teachers' teaching behavior, with a path coefficient of 0.455 and a z-value of 9.84 greater than 1.96. This study is expected to contribute to enhancing learning effectiveness by fostering improvements in both curriculum design and teachers' instructional practices.*

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A. INTRODUCTION

Classroom learning activities present unique challenges for teachers in their role as learning administrators (Lahiya et al., 2025), which places teachers in a position where they must deal with a heterogeneous group of students—varying in terms of level of understanding, behavior, motivation, interests, and so forth (Hecht et al., 2023). The greater the level of diversity among students, the more teachers are required to innovate in classroom management to ensure effective classroom learning (Qorib, 2024). Classroom instruction is considered effective based on direct observation specifically, changes in students' learning behavior, as well as increased motivation and interest in learning (Azizah et al., 2025). Therefore, learning effectiveness is one of the indicators contributing to student learning outcomes (Plooy et al., 2024).

Learning effectiveness is a key concern for teachers, serving as a basis for reflection and evaluation regarding how well instruction is proceeding and identifying the factors that need improvement to optimize learning effectiveness in the classroom (Munaf & Kalam, 2021). In this regard, two-way communication between the teacher and the students is necessary to examine areas that need improvement or enhancement (Priadi, 2020). And, of course, to support the process, teachers need to instill a mindset of not being too easily satisfied with evaluation results particularly when students offer opinions that appear subjective and are voiced solely to please the teacher

(Fitriyah & Jannah, 2021). Therefore, there is a need for the principal to act as a supervisor, responsible for directly overseeing and evaluating teaching and learning activities in the classroom (Amelia et al., 2022).

Learning effectiveness is a measure of the success of the classroom teaching and learning process, gauged by the ease with which students understand the material facilitated by the use of appropriate and varied teaching methods and media (Abdulrahaman, Faruk, & Oloyede, 2020). The effectiveness of learning can also be assessed by the increased enthusiasm for learning and student engagement in the classroom (Hendrickson, 2019). An increase in students' enthusiasm for learning can be interpreted as a highly positive change, signifying that they are beginning to enjoy the lessons taught by the teacher (Frommelt, Schiefeie, & Lazarides, 2020). However, effective learning is not easily achieved without proper planning that incorporates an assessment of students' understanding of the material, thereby enabling teachers to innovate and select enjoyable teaching methods (Vaughn & Boardman, 2024). Learning effectiveness is not merely a matter of the elements that must be fulfilled by teachers and students; it also depends on the system that governs and plays a crucial role in influencing the effectiveness of classroom learning (Rodriguez & Kyriakides, 2022).

Slavin outlines the indicators for measuring learning effectiveness as follows: quality of instruction, meaning instruction must be informative and engaging; appropriateness of the learning level, meaning the material aligns with students' ability levels; incentives, meaning the motivation provided to encourage students to learn; and time, meaning the allocation of sufficient and efficient time for students to master the material (Rahayu et al., 2021). All these indicators serve as key factors in determining whether the learning process has been effective, based on an evaluation focused on the students as the intended recipients of the instruction (Alguacil et al., 2024). The assessment must be objective; the results of the evaluation can serve as a basis for considering measures to improve and enhance the effectiveness of classroom instruction (Mohan, 2023).

One of the factors influencing the effectiveness of classroom learning is curriculum change (Gouedard et al., 2020). Curriculum change is a crucial factor that largely determines whether instruction can be effectively implemented in the classroom, given that the essence of a curriculum encompasses regulations, subject-specific content mechanisms, planning and implementation processes, objectives, and the evaluation process itself (Ashbee, 2021). The challenge posed by curriculum changes is that teachers must be able to adapt by modifying their teaching methods to align with the changes in the curriculum's content and objectives (Buabeng & Darko, 2025). By definition, curriculum change is a difference or improvement in one or more curriculum components, such as objectives, content, methods, or evaluation between one period and another, which is done deliberately to adapt to the demands of the times and the needs of society (Becher & Maclure, 2024).

Indonesia has undergone ten (10) curriculum changes, ranging from the 1947 curriculum to the Merdeka Curriculum currently in effect. (Adi et al., 2025). Curriculum changes are a root cause of the difficulty in achieving fundamental educational progress, as these changes often occur abruptly and without thorough evaluation (Becher & Maclure, 2024). This has caused confusion among teachers and students regarding implementation mechanisms, a lack of ready infrastructure, and administrative burdens that consume time allocated for classroom instruction (Gulcin, 2021). This is evidenced by the results of the PISA (Programme for International Student Assessment) survey, which indicate that the reading, mathematics, and science proficiency of Indonesian students remains below the international average, placing Indonesia in the lower half of participating countries (Nugrahanto & Zuchdi, 2019). The indicators for measuring curriculum changes are graduate quality, the quality of instruction, resource management, public participation, and school accountability (Mulyasa, 2019).

Another factor influencing learning effectiveness is the teacher's teaching behavior. Teaching behavior encompasses a series of teaching-learning interactions that go beyond merely delivering

material; it is also designed to prevent student boredom, thereby maintaining their enthusiasm and active participation (Usman, 2008). A teacher's character determines whether instruction proceeds effectively. This character also shapes the teacher's conduct during instruction, supported by competence, creativity, innovation, and the ability to gauge student responsiveness to the learning process (Fisher & Frey, 2021). A teacher's instructional behavior serves as a benchmark for gauging the probability of a lesson's effectiveness. Teachers often encounter challenging classroom situations, such as students playing or making noise in class. In response to this, teachers must be able to manage their emotions so that they remain enthusiastic about teaching (Lane et al., 2026). This is because the learning process can be likened to a ship at sea; a ship sails in the right direction depending on its captain, and in the context of classroom learning, that captain is the teacher. The teacher is the key figure who must act decisively to maintain control of the classroom, ensuring an environment conducive to effective learning (Burden, 2020).

Teacher instructional behavior is a factor that can bridge and reinforce the impact of curriculum changes on classroom learning effectiveness; specifically, when the curriculum changes, teachers adapt by modifying lesson plans and classroom teaching methods to align with the objectives of the new curriculum (Ozudogru & Sakallioglu, 2025). Curriculum changes can encourage teachers to be more creative and innovative by utilizing information-based technology (Alamri et al., 2020). Based on that theory, changes in the curriculum are directly and linearly linked to changes in teachers' instructional behavior, thereby implicitly enhancing the effectiveness of classroom learning (Lopez et al., 2026). Indicators for measuring teacher teaching behavior include preparing lesson plans, conducting classroom learning activities, communicating and interacting with students, assessing learning outcomes, using learning media and resources, and managing the classroom (Supardi, 2017).

Most previous research has focused solely on the direct impact of curriculum changes on teacher performance (Listianto et al., 2023) or student learning outcomes (Febriani, Azizah, & Setiawati, 2022), without examining how these changes affect the teaching behaviors of educators who must adapt to sudden curricular shifts. Therefore, this study centers on teachers' teaching behaviors to investigate and analyze the mechanisms through which curriculum changes occur and their subsequent impact on instructional effectiveness.

Based on the background outlined above, the author investigates how teachers' teaching behavior links curriculum changes to learning effectiveness. The study aims to empirically demonstrate the direct effects of curriculum changes and teaching behavior on learning effectiveness, as well as the effect of curriculum changes on learning effectiveness mediated by teachers' teaching behavior.

B. RESEACRH METHODS

This study employs a quantitative approach using a causal survey method. The research sample consists of junior high school teachers and students, with a total of 150 students and 150 teachers. Convenience sampling was used as the sampling technique, as it allowed the researcher easy, direct access to the respondents. The research utilizes primary data; therefore, data collection was conducted using questionnaires. The data analysis technique employed is path analysis, an analytical tool used to examine the presence or absence of direct effects of an exogenous variable on an endogenous variable, as well as indirect effects of the exogenous variable on the endogenous variable via a mediating variable (Woolredge, 2021). In this study, the exogenous variable is curriculum change, the endogenous variable is instructional effectiveness, and the mediating variable is teacher teaching behavior.

C. RESULT AND DISCUSSION

1. Curriculum Changes Affect the Effectiveness of Learning

Table 1. Path of Coefficients Curriculum Changes and Teaching Behavior on Learning Effectiveness

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	41.262	6.551		6.299	.000
	Curriculum Changes	.354	.099	.286	3.584	.000
	Teaching Behavior	.420	.067	.503	6.309	.000

a. Dependent Variable: Learning Effectiveness

Referring to the table above, the path coefficient for the effect of curriculum change on learning effectiveness is 0.286; with a calculated t-value of 3,584 exceeding the critical t-value of 1.65, and a sig value of 0.000 which is greater than 0.05, the path coefficient is significant. This indicates that curriculum change has a direct impact on learning effectiveness. Curriculum change contributes directly to an increase in learning effectiveness of 0.082, or 8.2%.

The very low path coefficient value indicating the relationship between curriculum changes and instructional effectiveness suggests that a change in curriculum doesn't automatically guarantee effective instruction; rather, success depends on factors such as teacher readiness and the supporting system in which teachers operate (Sahayu et al., 2026). The system in question is the school itself. It is described as such because the school plays a role in addressing all the professional needs of teachers—ranging from the provision of facilities to the expansion of their understanding of new curriculum mechanisms through training (Campbell, 2020). Field observations indicate that a significant number of schools, teachers, and even students are unprepared to adapt to the new curriculum; the situation appears particularly lamentable given that teachers and students had only just adapted to and gained a solid understanding of the mechanisms of the previous curriculum.

Curriculum reform in Indonesia is considered crucial given the rapid advancement of information-based technology; consequently, the government deems it necessary to introduce differentiation in education through curriculum development, ensuring that the quality of graduates keeps pace with technological progress (Purwanto et al., 2023). However, the curriculum development was not preceded by an objective evaluation of the previous curriculum; consequently, the changes were deemed hasty and lacked planning that assessed the probability of successful implementation (Laila et al., 2025). Indonesia's educational ranking still lags behind that of Malaysia and Singapore. Unfortunately, the country's education system remains rigid regarding policy; while the curriculum is considered good, its content is viewed as overly burdensome and fundamentally misaligned with students' actual needs and capabilities (Iswadi et al., 2025).

Based on the explanation above, while a curriculum change can indeed directly impact learning effectiveness, a strong driving factor is required to amplify that impact. Specifically, the government needs to prepare experts for curriculum implementation in schools, experts who are not merely theoretically knowledgeable but also skilled in practical application (Gouedard et al., 2020). Furthermore, a survey regarding the readiness of schools and teachers is necessary before the curriculum is officially adopted, rather than simply rushing to implement it based on vested interests (Suryanto, 2017). Fundamentally, curriculum change represents a form of educational innovation. A curriculum is considered high-quality when its components—content, teaching methods, and learning media—are grounded in competencies and projects, making them readily adaptable; however, the content must also be easily translated by teachers into lesson plans, as the effectiveness of instruction ultimately depends on the quality of lesson planning (Gonta & Tripon, 2020).

In previous research, no one has discussed the impact of curriculum changes on learning effectiveness, However, previous research indicates that the transition to the *Kurikulum Merdeka*

(Independent Curriculum) has increased the administrative burden on teachers, which in turn affects the effectiveness of classroom instruction, due to wasted time, heightened stress, reduced collaboration, stifled innovation, and additional costs (Rosyada et al., 2024). and other research indicates that the curriculum change has contributed positively to improving the quality of learning at the school, with a significant rise in student achievement and the strengthening of character values within the learning process (Azmi, 2024). The results of this study bridge the two aforementioned studies.

2. Teacher Teaching Behavior Influences Learning Effectiveness

Table 1 shows that the path coefficient for the effect of teacher teaching behavior on learning effectiveness is 0.503, with a calculated t-value of 6,309 > the critical t-value of 1.65, and a sig value of 0.000 which is greater than 0.05, indicating that the path coefficient is significant. This means that teacher teaching behavior has a direct effect on learning effectiveness. Teacher teaching behavior directly contributes 0.253 or 25.3% to the enhancement of learning effectiveness.

The low path coefficient value representing the relationship between teacher teaching behavior and learning effectiveness indicates that such behavior is perceived as insufficient to boost student enthusiasm in the classroom, which implicitly reduces the level of student engagement in the teaching and learning process. Effective learning is a two-way process; this means there must be active interaction between the teacher and the students—where the teacher asks questions and students answer, or students ask questions and the teacher answers (Priadi, 2020). One of the benchmarks for learning effectiveness is the teacher's teaching behavior in the classroom (Stevenson, Vanlone, & Barber, 2020). A teacher's instructional practice relies primarily on their competence in creating innovative lesson plans for each topic an innovative-based approach designed for easier acceptance by students, tailored to time allocations, the provision of learning media, and varied teaching methods suited to each level of material difficulty (Konig, Bremerich, Buchholtz, & Glutsch, 2020). In addition, teachers' teaching behavior is supported by their emotional intelligence. In learning activities where teachers are faced with heterogeneous student behavior, therefore, teachers must be able to command the classroom by firmly disciplining and motivating students during learning activities, while prioritizing gentleness and patience (Savina et al., 2025). Since teachers are essentially role models, in order to discipline students during the teaching and learning process, they must set an example by adhering to the very regulations they have established (Feliza, 2025).

Based on the preceding explanation, this aligns with Slavin's QAIT theory, which posits that learning effectiveness is determined by components of teacher behavior comprising the quality of instruction, appropriateness of the level of instruction, motivation, and time allocation (Baykara, 2026). The theory reinforces the idea that learning effectiveness involves the collaboration of three school components: the school as the provider of teaching facilities, the teacher as the educator, and the student as the learner (Schwede et al., 2025). These three elements must be bound by strict regulations governing discipline to ensure that the implementation of learning proceeds effectively (Johnson & Johnson, 2023).

In previous research, no one has discussed the impact of teaching behavior on learning effectiveness, However, previous research has examined the impact of classroom management on the effectiveness of instruction. Conceptually, classroom management serves as an indicator for measuring a teacher's instructional behavior (Konig et al., 2023), making it highly relevant to the present study. The findings from that research indicate that classroom management has an impact on and contributes to the effectiveness of instruction (Pohan, 2020).

3. Curriculum Changes Affect Teachers' Teaching Behavior

Table 2. Path of Coefficients Curriculum Changes on Teacher's Teaching Behavior

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	44.798	3.398		13.185	.000
	Curriculum Changes	.904	.035	.905	25.919	.000

a. Dependent Variable: Teaching Behavior

The table above shows that the path coefficient for the effect of curriculum change on teachers' teaching behavior is 0.905, with a calculated t-value of 25,919 exceeding the critical t-value of 1.65; this indicates that the path coefficient is significant, meaning curriculum change has a direct effect on teachers' teaching behavior. Curriculum change directly contributes to the improvement of teachers' teaching behavior by 0.819, or 81.9%.

The very high path coefficient value indicating the impact of curriculum changes on teachers' teaching behavior signifies that such changes present a challenge for teachers to demonstrate their ability to operate synergistically with the evolving education system in Indonesia (Puspitasari, 2025). Teachers respond to the challenges of curriculum change by improving competencies, specifically competence in mastering information based technology, given the complexity of the current curriculum, teachers must not only possess competence in their respective fields of expertise but also master technology to facilitate the preparation of lesson plans (Ong & Annamalai, 2024). All of this requires support from the school to provide avenues for competency development through teacher talent management (Deckker & Sumanasekara, 2025).

Teachers act as administrators of instruction and the curriculum; both roles require them to demonstrate skill, innovation, and creativity in curriculum development (Luo & Yan, 2024). Although curriculum changes may come as a shock to teachers, presenting lesson plans and materials in a more engaging way fosters students' confidence, assuring them that they are capable of growing and keeping pace with the changes (Mokhithi, 2025). Fundamentally, learning outcomes are not limited to measuring the extent of a student's grasp of the material; rather, a crucial aspect of education lies in the degree of change in the student's character, for the true essence of education is the humanization of the individual (Marsini, 2025).

Revisiting the rationale behind the curriculum change aims to enhance the quality of human resources in education, However, it must be emphasized that quality measurement must not be biased (Zahra, 2023). This means that the assessment of student learning outcomes under any prevailing curriculum must be conducted objectively by teachers and schools, rather than relying on subjective grading merely to boost the number of graduates (Bhardwaj, 2024). Ultimately, what needs to be emphasized in Indonesia's education system through curriculum reform is student assessment grounded in honesty; this ensures the system can genuinely evaluate the shortcomings of the current curriculum and determine the steps necessary to refine it (Irayanti, 2026).

In previous research, no one has discussed the impact of teaching behavior on learning effectiveness, however, previous research indicates that teachers adapt to curriculum changes; conceptually, this suggests that such changes compel teachers to adjust by modifying their teaching behaviors in the classroom (Pupista, 2025). Consequently, curriculum changes impact teaching behavior, a finding that remains relevant to the discussion in this study (Marlina, Qomarudin, & Hasan, 2024).

4. Curriculum Changes Affect Learning Effectiveness through Teachers' Teaching Behavior

Table 3. Direct, indirect, and total effects of curriculum change on teaching effectiveness, mediated by teaching behavior

Line of connection	Direct Effect	Indirect Effect	Total Effect	p-value	Confidence Interval
X → Y	0,286	-	0,286	3,584	1,96
M → Y	0,503	-	0,503	6,309	1,96
X → M	0,905	-	-	25,919	1,96
X→M→Y		0,455	-	9,84	1,96
Total Effect		0,455	0,788		

Based on the path coefficient of 0.905 for the relationship between curriculum change and teaching behavior, and the path coefficient of 0.503 for the relationship between teaching behavior and learning effectiveness, the calculated path coefficient for the effect of curriculum change on learning effectiveness mediated by teacher teaching behavior is 0.455. With a calculated z-value of 9.84 exceeding the critical z-value of 1.96, the path coefficient is statistically significant. Thus, curriculum change influences learning effectiveness through teacher teaching behavior. Curriculum change indirectly contributes to enhancing learning effectiveness via teaching behavior by a magnitude of 0.207, or 20.7%.

The magnitude of the path coefficient value mentioned above indicates that the contribution of teachers' teaching behavior in mediating the influence of curriculum changes on learning effectiveness is low. This implicitly indicates that teachers' instructional practices are suboptimal regarding the implementation of curriculum changes, specifically through the development of innovative, technology-enhanced curricula that would directly boost student enthusiasm for active participation in learning activities (Rotar, 2025).

Referring to the aforementioned explanation regarding curriculum development by teachers—which is deemed lacking in innovation—this aligns with a lack of teacher proficiency in information-based technologies; in reality, such technologies actually facilitate the creation of more effective and efficient lesson plans tailored to the allocated study time (Tammets & Ley, 2023). In response to this, the school principal needs to play a role in implementing talent-based management focused on teachers by providing training that stimulates creativity (Sadeghian & Jagharag, 2026). In reality, most schools certainly conduct periodic training to enhance teacher quality; however, such training is considered less effective when the delivery method is merely informative rather than practical approaches that would directly improve teachers' skills (Schaffner et al., 2026). Apart from that, schools are also considered to need to bring in relevant experts to deliver material that can increase teachers' insight so that they can grow and become more empowered (Bendtsen et al., 2022).

Teachers' teaching behavior is a bridge to measure how capable curriculum changes are in increasing the effectiveness of learning, so that in mediating the influence of curriculum changes on the effectiveness of learning (Aytac, 2026), therefore, to mediate the impact of curriculum changes on learning effectiveness, teachers must possess three elements of competence: social, emotional, and intellectual competence (Molina et al., 2024). These three competencies work in synergy to drive innovative curriculum development and effective instructional activities, underpinned by emotional and social intelligence. This enables teachers to visualize the intent and objectives of the prevailing curriculum (Chongcharoen et al., 2025).

D. CONCLUSIONS AND RECOMMENDATIONS

Based on the research findings outlined above, it can be concluded that curriculum change has a direct effect on teaching effectiveness, with a path coefficient of 0.286 and a t-value of 3.584 which is greater than 1.96; teaching behavior has a direct effect on teaching effectiveness, with a path coefficient of 0.503 and a t-value of 6.309 greater than 1.96; curriculum change has a direct effect on teaching behavior, with a path coefficient of 0.905 and a t-value of 25.919 greater than 1.96; and curriculum change influences teaching effectiveness through teachers' teaching behavior, with a path coefficient of 0.455 and a z-value of 9.84 greater than 1.96.

Based on the research conclusions above, a practical recommendation is to evaluate the implementation of the previous curriculum to identify its strengths and weaknesses, thereby enabling improvements for future curricula. The government, through educational authorities, should conduct direct outreach to schools to assess teachers' readiness to face the challenges of a new curriculum that is more complex than its predecessor. Teachers need to enhance their proficiency in information technology to create creative and innovative learning activities that stimulate student interest. Furthermore, teachers should be able to develop a curriculum that is simpler and easier for students to grasp by integrating all learning materials in a more cohesive manner. For future research, it is recommended to conduct a comparative study between schools in urban and rural areas, as well as to carry out direct classroom observations to measure teaching behaviors and learning effectiveness—moving beyond a reliance on perceptions alone—to ensure more objective research data.

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