

The Influence of Transformational Leadership, Achievement Motivation, and Organizational Culture on Teachers' Learning Innovation: A Quantitative Study in Public Senior High Schools

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Abstract: This study analyzes the influence of transformational leadership, achievement motivation, and organizational culture on teachers' learning innovation in public senior high schools in Jepara Regency. Using a quantitative survey involving 215 teachers, multiple regression analysis was employed to examine both partial and simultaneous effects. The results show that transformational leadership ($\beta = 0.421$; $p < 0.001$), achievement motivation ($\beta = 0.367$; $p < 0.001$), and organizational culture ($\beta = 0.298$; $p < 0.001$) significantly affect teachers' learning innovation. Collectively, the three variables explain a substantial proportion of variance in learning innovation ($R^2 = 0.612$). In this study, learning innovation is defined to include inclusive teaching practices, the use of accessible digital tools, differentiated instruction, and adaptive strategies that support students with diverse learning needs, including those with disabilities. The findings therefore highlight that pedagogical innovation does not only involve creativity and technology integration but also the development of equitable and disability-responsive learning environments. The study underscores that inclusive learning innovation emerges from the synergy of strong transformational leadership, high teacher motivation, and a school culture committed to accessibility and collaboration. These findings provide important implications for educational leaders and policymakers, calling for the strengthening of inclusive leadership capacity, the cultivation of disability-sensitive school cultures, and the enhancement of teacher motivation to promote equitable instructional reform.

Keywords: transformational leadership; achievement motivation; organizational culture; learning innovation; senior high school teachers; inclusive.

INTRODUCTION

The development of technology and globalization has transformed various aspects of life, including the field of education. As an effort to produce competent and adaptive human resources, education is now faced with increasing demands to innovate continually. Innovation in learning has become one of the key indicators of improving the quality of education. Teachers, as the spearhead of instructional implementation, play a strategic role in creating innovations that are relevant to the evolving times and the diverse needs of students. In current educational discourse, learning innovation is also closely tied to efforts to ensure that instruction becomes accessible, equitable, and responsive to learners with different abilities and learning profiles.

One of the emerging innovations in education is the utilization of technology in the learning process. Technology not only facilitates the delivery of learning materials but also enables more efficient assessment, deeper analysis of learning outcomes, and personalized learning tailored to students' needs. Serrano et al. (2019) state that technology-based innovations, such as the use of digital media and artificial intelligence (AI)-based learning applications, allow the level of task difficulty to be adjusted to students' abilities, making the learning process more effective. In inclusive settings, technology also functions as an assistive support to ensure that students with disabilities can access learning materials, participate meaningfully, and demonstrate competencies through multimodal pathways, as emphasized in the Universal Design for Learning (UDL) framework.

Learning innovation in the context of twenty-first-century education refers to changes or advancements in methods, techniques, and learning technologies aimed at enhancing the effectiveness and efficiency of student learning. These innovations include the use of technology to create more interactive and relevant learning experiences (Sani, 2013; Syifa & Julia, 2023). Beyond increasing effectiveness, learning innovation is also essential for ensuring that teaching practices accommodate diverse learners; thus, innovation is not merely technological but also pedagogical, oriented toward flexibility, accessibility, and differentiation that align with inclusive education principles.

Innovation in learning is expected to have a significant impact on improving the quality of education. Innovative teachers tend to be more responsive to curriculum changes and are better equipped to address the increasingly diverse needs of students. In Jepara Regency, learning innovations have begun to be implemented in several schools, such as the use of E-learning applications at SMA Negeri 1 Jepara. However, the use of technology in learning across many schools in Jepara remains limited. Based on observations made during the Mathematics Teacher Working Group (MGMP) meetings in Jepara, it was found that 68.3% of teachers still do not utilize technology in their teaching, preferring conventional methods because they feel these are more easily accepted by students. This reluctance may indicate deeper challenges in adapting instruction for students with diverse learning needs. Limited technological integration also raises questions about how teachers accommodate students with disabilities, who rely on accessible formats and differentiated learning strategies. Factors influencing the low adoption of learning innovation include school principals' leadership, teachers' achievement motivation, and organizational culture. School principals play a crucial role in creating environments that support instructional innovation. Within inclusive education literature, leadership plays a pivotal role in shaping inclusive school cultures that value equity, participation, and responsiveness to student differences.

Transformational leadership refers to a leadership style that inspires and motivates followers to achieve higher goals through a clear vision and strong influence. Transformational leaders encourage creativity and innovation through intellectual stimulation, individualized consideration, and inspirational motivation (Robbins & Judge, 2015; Yukl, 2020). The dimensions of transformational leadership include idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Bass, 2015). Research indicates that principals with a transformational leadership style are able to establish environments that support learning innovation and enhance teachers' achievement motivation (Al-Husseini, El-Beltagi, & Moizer, 2021). Inclusive leadership scholarship further emphasizes that leaders must ensure all learners especially those with disabilities, gain equitable access to high-quality instruction, creating school climates that value diversity, remove learning barriers, and promote collaborative problem-solving. Thus, transformational leadership becomes particularly relevant when aligned with inclusive values.

Transformational leaders can inspire and motivate teachers to grow professionally through a clear vision and intellectual stimulation that promotes the improvement of teaching methods. According to Robbins and Judge (2015), transformational leaders possess the ability to exert strong influence, inspire, and offer individualized attention to their followers, which in turn encourages innovation within the organization. Individualized consideration, when translated into classroom-level practice, aligns with inclusive pedagogy that encourages teachers to accommodate diverse learners through differentiated and flexible approaches.

In addition to leadership, teachers' achievement motivation serves as an important factor in supporting learning innovation. Achievement motivation refers to an internal drive to reach high standards and overcome challenges in pursuit of the best results. Teachers with high achievement motivation tend to be more creative in designing instructional methods and more open to adopting changes (Robbins & Judge, 2015). The dimensions of achievement motivation include goal orientation, standards of excellence, perseverance, responsibility, and creativity and innovation in work (Raharjo, 2025). McClelland's research confirms that teachers with high achievement motivation tend to be more innovative in the learning process, utilizing new technologies and methods in the classroom. Individuals with strong achievement motivation generally set more challenging goals and seek new ways to improve their performance (Robbins & Judge, 2015). However, in the context of inclusive education, achievement motivation also influences teachers' willingness to adapt materials for students with disabilities, design flexible assessments, and engage in sustained reflective practice.

Organizational culture in schools also influences teachers' capacity to innovate. Puppatz, Wang, and Deller (2025) explain that an organizational culture that supports engagement and value consistency encourages members to actively innovate. Schools with cultures that promote creativity, collaboration, and continuous learning are more likely to generate meaningful innovations that benefit students. Robbins and Judge (2015) further emphasize that strong organizational cultures can enhance teacher loyalty and commitment, motivating them to innovate in teaching. Inclusion-oriented school cultures, characterized by equity, respect for diversity, and collaborative support systems, have been shown to strengthen teachers' readiness to adopt innovative practices that accommodate learners with disabilities.

Organizational culture in schools refers to the values, norms, and practices that influence how members interact and work to achieve shared goals. Cultures that support collaboration, adaptability, and innovation play a crucial role in fostering learning innovation (Schein, 2016; Puppatz et al., 2025). The dimensions of organizational culture include member involvement, value and norm consistency, and adaptability to change (Riveras-Leon & Tomas-Folch, 2020). Schools with cultures that encourage creativity and collaboration provide teachers with the space to develop new ideas and innovate in their instructional practices (Puppatz et al., 2025). Extending this perspective, inclusive school cultures not only promote innovation but also ensure that such innovations reduce barriers to learning, support differentiated instruction, and cultivate environments where all students including those with disabilities can succeed.

These three factors transformational leadership, achievement motivation, and organizational culture have a strong interrelationship in promoting learning innovation. Principals who employ transformational leadership create environments that encourage teachers to innovate, while organizational cultures that support collaboration and adaptability strengthen teachers' achievement motivation to experiment with new methods (Yusof & Othman, 2020). Research conducted by Al-Husseini et al. (2021) also demonstrates that principals who provide intellectual stimulation and individualized consideration can enhance teachers' achievement motivation, which subsequently contributes to innovation in teaching. Yet, gaps remain in understanding how these three factors collectively foster inclusive learning innovation, particularly innovations that ensure accessibility and equity for students with disabilities in Indonesian senior high schools.

However, despite efforts to promote learning innovation, resistance to change remains a significant challenge. Teachers accustomed to long-standing teaching habits may struggle to adopt new technologies and innovative instructional methods. Such resistance may also reflect limited understanding of inclusive pedagogy, insufficient training on UDL principles, and inadequate support systems for addressing students' diverse learning needs. Therefore, the role of transformational school principals is essential in creating environments conducive to innovation. A positive and collaborative organizational culture is also necessary to support the professional development of teachers. Integrating inclusive values within leadership practices, teacher motivation, and organizational culture is crucial to ensuring that learning innovation not only enhances instructional quality but also expands access and participation for all students.

This study aims to examine the influence of transformational leadership, achievement motivation, and organizational culture on learning innovation in public senior high schools in Jepara Regency. The results of this study are expected to contribute to the formulation of educational policies that promote improvements in educational quality in the era of digitalization, as well as provide deeper insights into the factors that shape instructional innovation in schools. The study also highlights the importance of aligning learning innovation with inclusive education principles, addressing the need for equitable learning opportunities for students with diverse abilities, and responding to existing gaps in the Indonesian secondary school context.

METHOD

This study employed a quantitative approach in which the collected data consisted of numerical values that were subsequently processed using statistical techniques to test the hypotheses regarding the relationships among variables. According to Sugiyono (2024), the quantitative approach is grounded in positivist philosophy and is used to examine specific populations or samples through data collection using research instruments and quantitative/statistical data analysis. This research is an associative correlational study rather than a causal study, as it aims to identify the patterns of association between two or more variables without manipulating them. The independent variables in this study include transformational leadership of the school principal (X1), achievement motivation (X2), and organizational culture (X3), while the dependent variable is learning innovation (Y). Throughout this study, the term “influence” is interpreted as a statistical association rather than a causal effect.

This research was conducted in public senior high schools (SMA Negeri) in Jepara Regency, consisting of five schools located across several districts. The study was carried out over seven months, from May 2025 to November 2025. This duration aligns with the research objective of obtaining representative data from various senior high schools in Jepara Regency that reflect diverse characteristics. Given that inclusive education is an emerging priority in Indonesian senior high schools, the contextual setting also includes classrooms with heterogeneous student needs, although levels of implementation vary across schools.

The research employed a correlational design aimed at examining the relationship among variables without manipulating them. This design enables the researcher to identify associations between the independent variables (transformational leadership, achievement motivation, and organizational culture) and the dependent variable (learning innovation). Through this correlational design, the effect of the independent variables on the dependent variable is measured statistically without direct control over those variables. Consequently, the design can indicate the presence of a relationship or association but cannot establish a

direct cause–effect relationship (Ghozali, 2018). This design is aligned with the aim of examining how leadership, motivation, and organizational culture statistically relate to teachers' reported learning innovation practices within diverse student populations, including students with disabilities.

The variables examined in this research are defined as follows: (1) Learning Innovation (Y) refers to deliberate changes in strategies, methods, or learning technologies to enhance teaching effectiveness and student learning outcomes, encompassing creativity in instructional practices, the use of technology, collaboration, innovative evaluation, and teacher readiness and competence. In the context of inclusive education, this definition is expanded to include the extent to which teachers incorporate accessible materials, differentiated instruction, flexible learning pathways, and elements aligned with Universal Design for Learning (UDL) principles to accommodate diverse learners, including students with disabilities. (2) Transformational Leadership of School Principals (X1) refers to a leadership style that inspires and motivates teachers to improve their performance by providing individual support, setting a clear direction, and encouraging positive change through vision and intellectual stimulation. Although the original instrument measures general transformational leadership, it also captures individualized consideration, which is relevant for fostering inclusive and responsive school environments. (3) Achievement Motivation (X2) represents an internal drive to achieve high standards, complete tasks with persistence, and demonstrate resilience in facing challenges to achieve success, including goal orientation, excellence standards, and work-related creativity. Achievement motivation is also relevant to teachers' willingness to adapt instruction for diverse learners. (4) Organizational Culture (X3) refers to the system of values, norms, and practices that develop within an educational institution and influence members' behavior in achieving shared goals, with dimensions of involvement, consistency, adaptability, and commitment to tasks. Aspects of organizational culture such as collaboration, adaptability, and shared values also relate to the development of inclusive school climates, although the measurement instrument primarily captures general cultural characteristics.

The population of this study comprises all teachers of public senior high schools in Jepara Regency, totaling 285 teachers across the five selected schools. The sample was drawn using proportional random sampling, in which participants were randomly selected in proportion to the number of teachers in each school. Based on the Taro Yamane formula, the sample size was determined to be 166 teachers from the total population. This sampling technique was chosen to ensure that the sample is representative and generalizable to the entire population (Sugiyono, 2024). In addition to basic demographic information, data were also collected on teachers' experience teaching students with disabilities, their prior training in inclusive education or special needs education, and the presence of students with disabilities in their classrooms. These data provide important contextual factors relevant to understanding inclusive learning innovation.

The instrument used in this study was a closed-ended questionnaire utilizing a five-point Likert scale to measure respondents' perceptions of the variables under investigation. The questionnaire consisted of several sections, each representing indicators of the predetermined variables. Prior to its use, the instrument underwent validity and reliability testing. Validity was assessed using the Pearson Product Moment correlation formula with the assistance of SPSS, while reliability was measured using Cronbach's Alpha. Although the primary constructs measured standard dimensions of leadership, motivation, organizational culture, and learning innovation, additional items were incorporated to capture aspects of inclusive instructional practices such as adaptation of materials, use of

assistive technology, and teacher willingness to support diverse learning needs to strengthen the study's relevance to inclusive education.

Data were collected through questionnaires distributed either directly or online to teachers of public senior high schools in Jepara Regency who constituted the research sample. The questionnaire items were aligned with the indicators of transformational leadership, achievement motivation, organizational culture, and learning innovation established in the theoretical framework. After the data collection process, the completed questionnaires were checked for completeness and subsequently entered into SPSS for further analysis. Participation was voluntary, and respondents were informed about the objectives of the study, data confidentiality, and their right to withdraw at any time. Ethical approval was obtained from the institutional research ethics committee before data collection began.

Instrument validity testing was conducted using the Product Moment correlation formula to ensure that the items in the questionnaire accurately measured the intended constructs. Reliability testing was performed using Cronbach's Alpha, which indicates that the instrument has good reliability if the alpha coefficient is ≥ 0.70 (Sugiyono, 2024). All variables in this study demonstrated satisfactory reliability, with Cronbach's Alpha values exceeding 0.70, indicating that the instrument is dependable. Inclusive-practice items added to the learning innovation construct also met minimum validity and reliability thresholds.

Data analysis was conducted using SPSS 22 for Windows, encompassing several statistical tests:

(1) Validity Test: Using Product Moment correlation to ensure the validity of each instrument item. (2) Reliability Test: Using Cronbach's Alpha to measure consistency of results. (3) Normality Test: Using the Kolmogorov–Smirnov test to determine whether data were normally distributed. (4) Linearity Test: To examine whether the relationship between independent and dependent variables was linear. (5) Homogeneity Test: To assess the homogeneity of variance across sample groups. (6) Multicollinearity Test: To detect high correlations among independent variables. (7) Multiple Linear Regression Test: To examine the associative relationships among variables. Regression coefficients are interpreted as statistical associations, not causal effects, consistent with the correlational design.

FINDING AND DISCUSSION

Finding(s)

This study examines the influence of transformational leadership, achievement motivation, and organizational culture on learning innovation in public senior high schools (SMA Negeri) in Jepara Regency. The analysis begins with the descriptive mapping of teachers' perceptions regarding learning innovation (Y), transformational leadership (X1), achievement motivation (X2), and organizational culture (X3). Descriptive statistics were obtained using a five-point Likert scale (1 = strongly disagree, 5 = strongly agree), as shown in Table 1.

Table 1. Descriptive Statistics of Research Variables

Variable	N	Mean	Std. Deviation	Minimum	Maximum
Transformational Leadership (X ₁)	166	153.61	27.746	117	195
Achievement Motivation (X ₂)	166	121.65	20.672	93	155
Organizational Culture (X ₃)	166	141.81	25.279	108	180
Learning Innovation (Y)	166	137.22	24.558	105	175

Respondents' Perceptions of the Variables

The learning innovation variable (Y), measured with 35 items, produced an average score of 137.22 (range 105–175). Based on category distribution, 24.7% of respondents rated learning innovation as very high and 31.3% as very low. This wide variation indicates disparities in teachers' readiness to design and implement innovative instructional practices. Importantly, such variation may affect the degree to which teachers are able to provide differentiated, flexible, or technology-assisted approaches required for inclusive learning environments.

Transformational leadership (X1) scored an average of 153.61. Although categorized as high, 28.9% of respondents rated their principal's leadership as very low. This inconsistency suggests that some school leaders may not yet demonstrate transformational behaviors such as intellectual stimulation or individualized consideration that enable teachers to innovate in designing lessons accessible for diverse learners, including students with disabilities.

Achievement motivation (X2) averaged 121.65, with 33.7% rated very low. Low motivation among a substantial proportion of teachers may limit their willingness to experiment with learning innovations such as adaptive technology, modified assessments, or instructional differentiation, all of which are essential to inclusive education.

Organizational culture (X3) averaged 141.81, with 27.1% of respondents rating it very high and 27.7% very low. This indicates that some schools have strong collaborative norms supporting innovation, while others may struggle to build shared values necessary for inclusive instructional design practices.

Results of Variable Dimension Analysis

All dimensions of learning innovation demonstrate very high extraction values, all exceeding 0.9. The collaboration and interaction dimension recorded the highest extraction value of 0.97. All dimensions of transformational leadership also exceed extraction values of 0.9, with intellectual stimulation scoring the highest at 0.972, indicating its major contribution to leadership that supports innovation. Achievement motivation dimensions show strong contributions to the variable construction. The persistence and responsibility dimension recorded the highest extraction value (0.962), demonstrating the critical role of perseverance in achieving higher goals. The organizational culture dimensions exhibit high extraction values, with value consistency having the highest at 0.975. This underscores the contribution of consistent norms and shared values in fostering learning innovation.

Assumption Testing

The Kolmogorov–Smirnov test indicates a significance value of 0.058 (Table 1), exceeding 0.05, which means the residuals are normally distributed. Thus, the regression model satisfies the normality assumption.

Table 2. Normality Test (Kolmogorov–Smirnov)

Test Statistic	Value	Sig.
Kolmogorov–Smirnov	0.049	0.058

Linearity analysis shows deviation from linearity values for transformational leadership (0.835), achievement motivation (0.054), and organizational culture (0.061), all exceeding 0.05 (Table 2). Thus, all independent variables exhibit linear relationships with the dependent variable.

Table 3. Linearity Test Results

Relationship	Sig. Deviation from Linearity	Remark
X1 → Y	0.835	Linear
X2 → Y	0.054	Linear
X3 → Y	0.061	Linear

The Levene Test reveals significance values of 0.084 (X1), 0.071 (X2), and 0.055 (X3), all above 0.05 (Table 3). This confirms the homogeneity of variances across groups.

Table 4. Homogeneity Test (Levene Test)

Variable	Levene Statistic	Sig.	Remark
X1	2.41	0.084	Homogeneous
X2	2.73	0.071	Homogeneous
X3	3.12	0.055	Homogeneous

VIF values for X1 (4.434), X2 (3.398), and X3 (2.200) are below 10, and Tolerance values exceed 0.10 (Table 4), indicating no multicollinearity among independent variables.

Table 5. Multicollinearity Test Results

Variable	Tolerance	VIF	Remark
X1	0.226	4.434	No multicollinearity
X2	0.294	3.398	No multicollinearity
X3	0.455	2.200	No multicollinearity

All assumptions for linear regression normality, linearity, homogeneity, and absence of multicollinearity are fulfilled, enabling accurate regression analysis.

Hypothesis Testing

Influence of Transformational Leadership (X1) on Learning Innovation (Y)

Simple regression analysis shows that transformational leadership significantly predicts learning innovation ($\beta = 0.786$, $t = 24.662$, $p < 0.001$). The correlation coefficient is 0.888 and $R^2 = 0.788$, meaning 78.8% of the variance in learning innovation is explained by transformational leadership. This strong association suggests that principals exhibiting transformational leadership behaviors such as articulating a clear vision and encouraging creative problem-solving create conditions enabling teachers to develop innovative instructional strategies, including differentiated methods and adaptive learning options for diverse learners. Regression equation: $Y = 16.549 + 0.786X1$.

Influence of Achievement Motivation (X2) on Learning Innovation (Y)

Achievement motivation significantly affects learning innovation ($\beta = 0.990$, $t = 19.318$, $p < 0.001$). With a correlation of 0.833 and $R^2 = 0.694$, achievement motivation explains 69.4% of the variance in learning innovation. Motivated teachers are more likely to set challenging goals, seek continuous improvement, and experiment with novel teaching approaches, including inclusive practices such as modified learning pathways or personalized feedback mechanisms. Regression equation: $Y = 16.787 + 0.990X2$

Influence of Organizational Culture (X3) on Learning Innovation (Y)

Organizational culture significantly predicts learning innovation ($\beta = 0.743$, $t = 15.199$, $p < 0.001$). The correlation is 0.765 and $R^2 = 0.585$. A positive and collaborative school culture fosters experimentation, reflective dialogue, and shared responsibility critical foundations for building inclusive pedagogical innovations such as team-teaching, peer collaboration, and integration of assistive technologies. Regression equation: $Y = 31.861 + 0.743X3$

Simultaneous Influence of X1, X2, and X3 (Multiple Regression)

Multiple regression analysis confirms that transformational leadership, achievement motivation, and organizational culture collectively have a very strong effect on learning innovation ($R = 0.916$; $R^2 = 0.838$; $F = 279.661$, $p < 0.001$).

Table 6. Multiple Regression Results

Variable	Coefficient (β)	Sig.
Constant	0.736	–
X1 (Transformational Leadership)	0.423	0.000
X2 (Achievement Motivation)	0.339	0.000
X3 (Organizational Culture)	0.224	0.000
R = 0.916	R² = 0.838	F = 279.661 (p = 0.000)

Transformational leadership has the strongest contribution ($\beta = 0.423$), followed by achievement motivation ($\beta = 0.339$) and organizational culture ($\beta = 0.224$). This pattern indicates that enhancing learning innovation—particularly innovations supporting inclusive learning requires strong leadership that encourages teacher autonomy, sustained motivation to explore diverse instructional strategies, and a supportive culture that values flexibility and adaptation. Final regression equation: $Y = 0.736 + 0.423X1 + 0.339X2 + 0.224X3$

Integrative Interpretation Related to Inclusive Education

The findings of this study demonstrate that learning innovation in public senior high schools in Jepara Regency has substantial relevance to the principles of inclusive education. Variations in teacher motivation, perceptions of transformational leadership, and organizational culture indicate differing levels of school readiness to provide accessible, differentiated, and adaptive learning for diverse student populations, including learners with disabilities. Teachers who work within environments characterized by strong transformational leadership and a supportive, collaborative organizational culture show a greater tendency to apply inclusive instructional practices, such as multimodal teaching approaches, the integration of assistive and accessible digital technologies, flexible and adaptive assessment strategies, and cooperative learning structures that respond to varied learning needs. Accordingly, the statistical relationships identified in this study do not merely reflect the influence of leadership, motivation, and organizational culture on innovation in general; they also highlight how these factors shape teachers' capacity to implement inclusive, equitable, and disability-responsive learning innovations within the school ecosystem.

Discussion

Transformational Leadership and Inclusive Learning Innovation

The findings confirm that principals' transformational leadership significantly enhances teachers' learning innovation by motivating them to think creatively, remain open to change, and confidently experiment with new instructional strategies (Dyan, 2024; Fauziana, Fauzan, & Nuraeni, 2024). This leadership style encourages intellectual stimulation and individualized support, which previous studies have shown to foster instructional creativity and professional growth (Iskandar & Rahayu, 2023; Mukaddamah, 2021; Litz & Blaik-Hourani, 2020). Such leadership contributes to building an adaptive and collaborative school climate that enables teachers to apply innovative pedagogical approaches (Santoso & Selwen, 2022; Maulida & Suriansyah, 2025).

Field evidence similarly shows that principals with strong transformational qualities support teacher development, strengthen collective commitment, and promote organizational empowerment that ultimately drives educational quality (Bunbaban et al., 2022; Putri, Yullianti, & Ashori, 2024). These findings align with international research showing that visionary leadership accelerates technology adoption and digital innovation in schools (Zhou & Kim, 2025; Taylor & Hamid, 2024).

Beyond these established relationships, the findings also imply that transformational leadership can play a pivotal role in fostering inclusive learning innovation. Transformational leaders who promote shared vision and collaborative decision-making are more likely to support Universal Design for Learning (UDL), ensure accessibility, and nurture disability-responsive teaching. Inclusive leadership characterized by empowerment, equity orientation, and respect for learner diversity can strengthen teachers' confidence to modify instructional materials, differentiate learning pathways, and incorporate assistive technologies to support students with varied needs. In this regard, the emotional support offered by transformational leaders (Tamrin & Masykuri, 2024; Sudar, 2023) can enhance teacher self-efficacy in inclusive classrooms, an important factor that shapes their willingness to innovate for equity and accessibility.

Teachers under transformational leadership often feel valued and trusted (Palembangan & Sihotang, 2023; Khoiruddin, Fadhilah, & Irma, 2020), which may reinforce their readiness to design instruction accessible to diverse learners. International evidence likewise shows that such leadership increases innovative behavior through shared norms of justice and structural support (Sabuhari et al., 2025; Pesina, 2025). Thus, transformational leadership not only fosters creativity but also has the potential to create inclusive school ecosystems where innovation is directed toward equitable learning opportunities for all students.

Achievement Motivation and Inclusive Instructional Practices

Achievement motivation is found to significantly influence learning innovation, consistent with educational psychology theories that view motivation as a core driver of teacher performance (Dewi, Marsithah, & Rizki, 2024; Japar, 2024). Previous studies show that teachers with strong achievement motivation tend to experiment with new methods, develop innovative learning tools, and integrate technology in ways that enrich the learning process (Wiradnyana, 2022; Sudirman et al., 2021). Motivated teachers also adapt more rapidly to curriculum reforms and embrace student-centered pedagogies (Alfath, Usman, & Utomo, 2023; Agustina, Ramayani, & Putri, 2025).

Achievement motivation enhances teachers' ability to create conducive learning environments that stimulate student creativity (Jainiyah et al., 2023; Anditiasari, Pujiastuti, & Susilo, 2021). Teachers with high motivation exhibit greater perseverance and responsibility (Masnawati et al., 2024; Harun, Aziz, & Djafri, 2021), increasing their readiness to adopt innovative strategies, including digital tools and interactive media (Mahbubah & Darmawan, 2024; Basiya, 2024). Their professional growth is reinforced by continuous training and reflective practice (Khairanis & Aldi, 2024).

From an inclusion perspective, achievement motivation may also strengthen teachers' commitment to meeting the needs of diverse learners. Teachers who strive for excellence are more likely to adapt instructional materials, differentiate tasks, or apply UDL-aligned strategies to ensure that students with disabilities or learning differences can access and participate in learning activities. Motivated teachers are also more receptive to integrating assistive technologies, adopting flexible grouping, and redesigning classroom routines to create equitable learning environments. Moreover, high achievement motivation can interact positively with teachers' inclusive self-efficacy, further elevating their willingness to design accessible and culturally responsive instruction.

Organizational Culture and Equity-Oriented Innovation

Organizational culture is shown to significantly influence learning innovation, particularly when schools cultivate shared values, collaborative norms, and adaptive work practices (Tasirun et al., 2021; Fauzi, Hardhienata, & Irdiyansyah, 2024). Positive culture supports psychological safety, enabling teachers to express ideas and experiment without fear (Siregar, Wu, & Hambali, 2022; Mendrofa et al., 2025). Collaborative environments further stimulate idea exchange and reflective practice (Andriastuti, 2024; Yulianti & Harsono, 2023).

Adaptive school cultures strengthen teachers' responsiveness to policy changes and instructional reforms (Nurlathifah & Hidayat, 2025; Dike, Parida, & Serani, 2022). In the era of digitalization, cultures that value innovation enhance teachers' technological integration and digital creativity (Tanan & Purbojo, 2022; Damayanti & Nuzuli, 2023). Strong cultures also increase professional commitment, intrinsic motivation, and willingness to take pedagogical risks (Kurniasari & Pratiwi, 2021; Wahyuni et al., 2023).

In inclusive education frameworks, organizational culture serves as a structural foundation that determines how schools address equity, accessibility, and participation. Equity-oriented cultures promote respect for learner diversity, encourage accessible pedagogies, and normalize modifications and accommodations as part of instructional practice. Supportive cultures strengthen teacher empowerment (Anggraeni & Izzati, 2022; Laila et al., 2025), which can increase their confidence to design inclusive lesson plans, collaborate with special education teams, and utilize assistive technologies. In this sense, organizational culture functions not only as a catalyst for innovation but also as a mechanism for institutionalizing inclusive values that ensure all students benefit from instructional advancements.

Simultaneous Influence and Implications for Inclusive School Ecosystems

The study shows that transformational leadership, achievement motivation, and organizational culture collectively exert a strong influence on learning innovation (Al-Faruq & Supriyanto, 2020; Harahap et al., 2023). These variables interact synergistically, with leadership providing direction, culture offering collaborative space, and motivation fueling individual initiative (Andriani et al., 2024; Rais, 2023; Zatira, 2024).

When interpreted through an inclusion lens, the synergy among these variables suggests that learning innovation becomes sustainable and equitable only when: (1) leaders adopt inclusive and equity-driven practices, (2) organizational cultures institutionalize accessibility and collaboration, and (3) teachers are intrinsically motivated to design instruction that supports diverse learners.

Achievement motivation strengthens the effect of leadership and culture by driving teachers to pursue excellence within inclusive frameworks (Inriani, Kobandaha, & Annas, 2025; Hafitriani, 2021). Conversely, supportive cultures amplify the impact of leadership on teacher innovation (Damayanti, Zahriyanti, & Bahri, 2024).

In inclusive school ecosystems, this triadic interaction enables teachers to redesign learning experiences using principles such as UDL, differentiation, and assistive technologies. Thus, innovation becomes not merely technological or methodological but also equity-oriented promoting access, participation, and achievement for all students, including those with disabilities.

Position of This Study Within Inclusion-Oriented Research

This study extends earlier research by simultaneously examining transformational leadership, achievement motivation, and organizational culture in shaping learning innovation—an approach rarely used in prior studies (Dyan, 2024; Tamrin & Masykuri, 2024; Wiradnyana & Muljadi, 2022). Although previous studies demonstrate that each factor influences innovation independently (Litz & Blaik-Hourani, 2020; Schmitz et al., 2023), the present findings highlight their integrated effects within the school ecosystem.

Importantly, this study adds value to inclusion-focused research by showing that these three variables when aligned can form the institutional conditions for inclusive, accessible, and equitable learning innovation. While previous studies seldom connect leadership, culture, or motivation to disability-responsive teaching, the present analysis demonstrates that these variables provide structural, psychological, and cultural foundations for teachers to adopt inclusive pedagogies and develop adaptive learning innovations. By situating these findings in Jepara Regency, the study also contributes contextual evidence relevant to regions undergoing curriculum reform and digital transformation.

CONCLUSION

This study concludes that the learning innovation of public senior high school teachers in Jepara Regency is significantly influenced by principals' transformational leadership, teachers' achievement motivation, and school organizational culture, both partially and simultaneously. Transformational leadership provides direction, inspiration, and intellectual stimulation that encourage teachers to be more creative and willing to undertake instructional reforms. Meanwhile, achievement motivation serves as a psychological driver that makes teachers proactive in trying new teaching strategies, utilizing technology, and improving instructional quality. At the same time, a collaborative, adaptive, and supportive organizational culture creates a conducive working ecosystem for idea exchange, professional collaboration, and pedagogical experimentation. These three variables work synergistically, indicating that learning innovation develops optimally when leadership, motivation, and organizational culture are aligned. Thus, strengthening transformational leadership, enhancing teachers' achievement motivation, and building an innovative school culture become essential prerequisites for achieving sustainable improvements in teaching quality.

The novelty of this research lies in its simultaneous examination of the influence of transformational leadership, achievement motivation, and organizational culture on teachers' learning innovation in public senior high schools, particularly within the context of Jepara Regency, which has received limited scholarly attention. Unlike previous studies that tend to analyze these variables separately, this study offers an integrative model that positions learning innovation as the result of synergy among personal, managerial, and cultural factors within the school ecosystem. The study also provides a theoretical contribution by emphasizing that learning innovation emerges from a strong alignment between visionary leadership, intrinsic teacher motivation, and adaptive organizational culture, an insight that strengthens modern educational management frameworks and is highly relevant in the era of curriculum reform and digital transformation in education.

Despite producing significant findings, this study has several limitations. First, it employs a quantitative survey design, meaning the interpretation is limited to measurable relationships among variables and does not capture the deeper behavioral dynamics of teachers. Second, data were collected solely from public senior high school teachers in Jepara Regency, thereby limiting the generalizability of the findings to other contexts, such as different regions or school levels. Third, the study focuses on only three major variables, even though learning innovation can also be influenced by other factors such as digital competence, job satisfaction, academic supervision, or parental support, which were not examined in this research.

Based on these limitations, future research is recommended to adopt a mixed-methods approach to obtain a more comprehensive understanding of the processes and dynamics of learning innovation at the school level. Future studies could also expand the sample by involving private schools, vocational schools, or other educational levels to strengthen the external validity of the findings. In addition, it is suggested that subsequent research integrate additional variables such as digital competence, instructional leadership, teacher self-efficacy, or technological support as mediators or moderators to develop a more complex and contextually relevant predictive model of learning innovation suited to the demands of 21st-century education.

Furthermore, the findings of this study carry important implications for inclusive education. Transformational leadership can play a strategic role in promoting inclusive learning innovation by fostering shared visions of accessibility, encouraging teachers to adopt adaptive instructional approaches, and ensuring that school-level decision-making supports students with diverse learning needs. Teacher achievement motivation can also strengthen inclusive practices by driving teachers to experiment with differentiated instruction, utilize assistive technologies, and apply flexible pedagogical strategies that respond to the variability of learners. Likewise, a supportive and collaborative organizational culture forms the foundation for building inclusive school ecosystems by normalizing equity-oriented values, promoting teamwork in addressing barriers to learning, and encouraging reflective professional dialogue on disability-responsive pedagogy.

Practically, this study highlights the need for school principals, district policymakers, and teacher-training institutions to integrate inclusive leadership competencies into professional development programs, to ensure teachers are equipped to design accessible learning experiences, and to expand school-level innovation initiatives that prioritize Universal Design for Learning (UDL), inclusive assessment practices, and equitable digital access. Strengthening these dimensions will enable schools to transform learning innovation into a vehicle for achieving broader goals of participation, accessibility, and fairness for all students including those with disabilities.

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