KeAi
CHINESE ROOTS
GLOBAL IMPACT

International Journal of Innovation Studies

# THE IMPACT OF ARTIFICIAL INTELLIGENCE ON ADMINISTRATIVE CREATIVITY AND CRISIS RESOLUTION AMONG SECONDARY SCHOOL PRINCIPALS FROM THE TEACHERS' POINT OF VIEW

**Dr. Ihab Massarwa** [1]
Teacher Education, ISRAEL
Ihab10.1975@gmail.com

**Dr.Nassar Tarabiy** [2]
nassart1@gmail.com
Teacher Education, ISRAEL

**Yassin Marwan** [3]
Marwany1963@gmail.com
Teacher Education, ISRAEL **2025**

## Abstract

The study sought to find how, as seen by instructors, artificial intelligence (AI) affects administrative innovation and crisis resolution in secondary schools. While also noting the possibilities and difficulties connected with AI adoption, the study aimed to grasp the part of artificial intelligence in improving decision-making, problem-solving, and efficiency in school administration. Emphasizing teachers' points of view, the study offers insightful analysis of the pragmatic consequences of artificial intelligence inclusion into educational leadership. The research took place in green line area secondary schools. Teachers from several secondary schools made up the sample, therefore reflecting a wide spectrum of teaching experience, degrees of artificial intelligence knowledge, and engagement in AI-based professional development (PD) initiatives. This variety made it possible to fully grasp how many elements affect teachers' impressions of artificial intelligence's involvement in administrative creativity and crisis management. Data collecting was done using a mixed-methods approach combining semi-structured interviews with questionnaires. Teachers' opinions on artificial intelligence's influence on administrative creativity and crisis resolution were quantitatively assessed on the Likert-scale survey. The interviews offered qualitative analysis of particular experiences, difficulties, and possibilities connected to artificial intelligence application in educational management.

The main conclusions of the research showed that teachers typically saw artificial intelligence as helping to improve administrative creativity and crisis resolution. Strong agreement among respondents was shown by statements including "AI enhances principals' administrative creativity" (M = 4.38) and "AI improves crisis resolution strategies" (M = 4.29). With Cronbach's Alpha values over 0.79 and Composite Reliability (CR) values above 0.80 across all areas, the survey instrument shown great dependability and consistency, therefore validating the robustness of the data. The study did, however, also find difficulties with AI application, especially in relation to crisis resolution (M = 3.92). Teachers underlined as major challenges to efficient AI deployment technological constraints, lack of training, and opposition to change. The results also revealed that professors with more than ten years of

experience and those highly versed with artificial intelligence had the most favorable opinions of its importance. Regular involvement in AI-based PD initiatives also greatly improved educators' opinions on AI acceptance. Fascinatingly, the analysis of variance (ANOVA) showed no appreciable interaction between years of experience, artificial intelligence familiarity, and PD participation, implying that each factor separately affected teachers' impressions. These results led to certain recommendations being suggested. With an emphasis on administrative innovation and crisis resolution, first AI training programs should be improved to give school principals and teachers thorough and ongoing learning chances. Second, especially for underfunded schools, access to artificial intelligence tools and training courses has to be enhanced. Third, hands-on seminars, peer learning chances, and continuous support help to solve implementation issues including technology constraints and opposition to change. Fourth, ethical artificial intelligence techniques should be taught to teachers so that they could inspire faith in AI-driven solutions. Lastly, especially in various educational environments, more study should be carried out to investigate the long-term effects of artificial intelligence on administrative efficiency and crisis resolution.

**Keywords:** Artificial Intelligence, Administrative Creativity, Crisis Resolution, Secondary School

## Introduction

Artificial intelligence (AI) integration into educational administration has fundamentally changed school leadership and management in recent years. Artificial intelligence-powered solutions give school principals predictive analytics that improve administrative operations and problem-solving processes, data-driven decision-making tools, and automation capabilities (Aoun, 2017). AI is being used by educational institutions all around to increase operational efficiency, enable communication, and best allocate resources (Zawacki-Richter et al., 2019). Within the framework of secondary education, school principals deal with increasingly difficult problems calling for creative answers. They have to properly handle difficult administrative chores, handle crises, and create a creative and flexible learning environment. Applications of artificial intelligence in educational leadership offer chances to improve crisis management techniques and boost innovation in school administration.

The way an institution's culture, instructional quality, and crisis response policies are shaped depends mostly on the secondary school principals. Artificial intelligence methods used in administrative procedures let for more effective scheduling, student performance analysis, and teacher assistance systems (Luckin et al., 2016). Moreover, artificial intelligence helps data-informed decision-making, so lightening regular administrative chores and freeing principals to concentrate on strategic planning and leadership (Selwyn, 2019). Although artificial intelligence has shown promise in the field of education, especially in Green Line schools, its influence on administrative innovation and crisis management is yet unknown. Since they personally see how these technologies affect school management and decision-making procedures, teachers' point of view is very important in assessing the success of AI-driven leadership.

The Green Line area offers special sociopolitical and financial issues that affect school management. Leaders in education in this area can face problems involving political unrest, financial restrictions, and student welfare issues. Stable learning environments depend on efficient crisis management and creative management techniques. By means of predictive models for crisis management, administrative work simplification, and real-time emergency response capability, artificial intelligence presents possible answers (Popenici & Kerr, 2017).

Still, empirical research on the degree to which artificial intelligence improves administrative creativity and crisis resolution among secondary school principals is much awaited. This paper attempts to investigate teachers' opinions on the function of artificial intelligence in educational leadership inside this intricate setting.

**Research Problem**

Though artificial intelligence is increasingly being employed in the classroom, little study has looked at how it affects administrative creativity and crisis resolution in secondary schools—especially in the Green Line region. School principals have to be constantly innovators to meet new difficulties, but it's unknown how much artificial intelligence either helps or stifles management's creative ability. Furthermore, crisis management is a vital component of school leadership; although artificial intelligence provides analytical and predictive capabilities, its impact from the standpoint of teachers is yet little known. Examining how artificial intelligence affects school principals' capacity to handle crises and apply innovative administrative solutions—as seen by Green Line area teachers—helps this paper close this knowledge gap.

**Aim of the Research**

The primary aim of this research is to investigate the impact of AI on administrative creativity and crisis resolution among secondary school principals from the teachers' perspective within the Green Line area. Specifically, the study seeks to explore how AI influences decision-making, problem-solving, and innovation in school management and how it contributes to or challenges crisis resolution processes.

**Significance of the Study**

This study holds theoretical and practical significance. Theoretically, it contributes to the body of knowledge on AI in educational leadership, particularly in the context of administrative creativity and crisis management. By examining teachers' perspectives, the study provides insights into how AI tools influence school administration, potentially informing future research on AI-driven leadership models.

Practically, the findings of this research can benefit policymakers, school administrators, and educators by highlighting the advantages and challenges of AI in school leadership. Educational policymakers can use the study's results to design AI-based training programs for school leaders, ensuring that AI applications align with the needs of secondary schools in the Green Line area. Additionally, the study offers valuable insights for school principals on how to effectively integrate AI to enhance administrative creativity and crisis resolution, ultimately improving school management and student outcomes.

**Research Questions**

1. How do teachers perceive the impact of AI on administrative creativity among secondary school principals in the Green Line area?
2. What are the teachers' views on the role of AI in enhancing or hindering crisis resolution by school principals?
3. How do AI-driven administrative strategies affect decision-making and problem-solving in secondary schools?

4. What challenges do secondary school principals face in implementing AI for administrative creativity and crisis management?
5. How can AI be effectively utilized to support school leadership and crisis response in secondary education within the Green Line area?

## Study Limitations

This study is subject to several limitations. First, it focuses exclusively on secondary school principals within the Green Line area, which may limit the generalizability of the findings to other educational settings. Second, the study relies on teachers' perceptions, which, while valuable, may not fully capture the administrative experiences of school principals themselves. Third, the research is constrained by the availability of AI tools and their level of implementation in the schools studied. Finally, external factors such as political, economic, and cultural influences may impact AI adoption and its effectiveness, which are beyond the control of this research.

## Operational Definitions of Terms

- **Artificial Intelligence (AI):** AI refers to the use of machine learning algorithms, data analytics, and automated decision-making tools to enhance administrative and instructional processes in education (Luckin et al., 2016).
- **Administrative Creativity:** The ability of school principals to generate innovative solutions and strategies to improve school management, curriculum planning, and stakeholder engagement (Selwyn, 2019).
- **Crisis Resolution:** The strategies and actions taken by school leaders to manage and mitigate crises affecting schools, including emergency responses, conflict resolution, and risk management (Popenici & Kerr, 2017).
- **Green Line Area:** A geographically and politically significant region where this study is conducted, characterized by unique socio-political challenges impacting school administration.

## Research Methodology

This study employs a mixed-methods approach, combining qualitative and quantitative data collection methods. The quantitative aspect involves a survey distributed to teachers in secondary schools within the Green Line area to assess their perceptions of AI's impact on administrative creativity and crisis resolution. The qualitative aspect includes semi-structured interviews with selected teachers to gain deeper insights into their experiences and perspectives. Data will be analyzed using statistical methods for quantitative data and thematic analysis for qualitative responses.

- **Study Variables**
  - **Independent Variable:** Implementation of Artificial Intelligence in school administration.
  - **Dependent Variables:**
    - Administrative creativity of secondary school principals.
    - Crisis resolution effectiveness of secondary school principals.

## Literature Review

Among several industries, including education, artificial intelligence (AI) has become a transforming agent. Particularly among administrators of secondary schools, its ability to improve administrative inventiveness and crisis resolution in educational institutions is progressively underlined. From the standpoint of educators, who are major players in the learning process, this paper investigates how artificial intelligence affects these two important domains. Including artificial intelligence into school administration seems to help to simplify processes, encourage creative problem-solving, and enhance crisis decision-making capacity. Still under investigation, though, is the degree to which artificial intelligence might improve administrative creativity and crisis resolution—especially in relation to secondary education. Examining teachers' opinions on artificial intelligence's influence on administrative capabilities of school principals helps this study to close this gap.

The literature on artificial intelligence in education emphasises how technology might transform crisis management and administrative procedures. Luckin et al. (2016) claim that artificial intelligence (AI) can free up time for school administrators to concentrate on strategic and creative problem-solving by automating ordinary administrative chores. This is consistent with the results of Holmes et al. (2019), who contend that predictive analytics and data-driven insights made possible by AI-driven technologies might improve decision-making. AI has demonstrated in the context of crisis resolution to increase response speeds and accuracy. Chen et al. (2020), for example, showed how artificial intelligence systems could examine vast databases to spot possible problems before they became more severe, therefore allowing preventative actions.

Another area where artificial intelligence shows potential is administrative creativity—that is, the capacity to provide fresh and workable answers to administrative problems. Research by Zawacki-Richter et al. (2019) indicates that by providing alternate viewpoints and answers that might not be immediately clear to human managers, artificial intelligence might help creative problem-solving. Still, effective integration of artificial intelligence into school management calls for a sophisticated knowledge of its limits and ethical issues. Selwyn (2019) emphasizes the need of a balanced approach since the over-reliance on artificial intelligence can cause a dehumanization of the educational process.

## Empirical Study

This paper uses a mixed-methods approach to examine, from the teachers' point of view, how artificial intelligence influences administrative creativity and crisis resolution among secondary school principals. Data were gathered via semi-structured interviews with instructors from many secondary schools in the green line area as well as surveys. The poll asked questions meant to gauge how well instructors see artificial intelligence improving administrative creativity and crisis management. The interviews provide more thorough understanding of certain cases where school principals used artificial intelligence tools to handle emergencies and administrative tasks.

Initial results show that teachers usually view artificial intelligence as a useful tool for improving administrative creativity. Many respondents pointed out that technologies for artificial intelligence-driven analytics and automation have let principals create creative answers to challenging issues and make more wise decisions. Regarding crisis management, educators said that artificial intelligence technologies have sped up and accuracy of responses

to crises including security concerns and natural disasters. Some worries were expressed, nevertheless, about the possibility of artificial intelligence erasing human judgement and the need of keeping a human-centric strategy of crisis management.

**Table 1: Distribution of Study Sample Members (N = 795)**

| Variable | Category | Frequency (N) | Percentage (%) |
|---|---|---|---|
| Gender | Male | 380 | 47.8% |
| | Female | 415 | 52.2% |
| Experience | 1–5 years | 200 | 25.2% |
| | 6–10 years | 220 | 27.7% |
| | 11–15 years | 190 | 23.9% |
| | More than 15 years | 185 | 23.2% |
| Educational Level | Bachelor's Degree | 450 | 56.6% |
| | Master's Degree | 270 | 34.0% |
| | Doctorate | 75 | 9.4% |
| Subject | Languages | 200 | 25.2% |
| | STEM (Science, Math, etc.) | 240 | 30.2% |
| | Social Studies | 180 | 22.6% |
| | Other | 175 | 22.0% |
| Familiarity with AI | Low | 310 | 39.0% |
| | Moderate | 330 | 41.5% |
| | High | 155 | 19.5% |
| Participation in AI-Based PD | Yes | 290 | 36.5% |
| | No | 505 | 63.5% |

- This table presents the distribution of the study sample across different variables. A total of 795 participants were included in the study, and the breakdown is as follows:
  - **Gender**: The sample is relatively balanced in terms of gender. There were 380 male participants (47.8%) and 415 female participants (52.2%). This indicates a slightly higher proportion of female participants.
  - **Experience**: The distribution of participants by years of experience shows a fairly even spread, with the largest group having between 6 to 10 years of experience (27.7%, 220 participants). The second-largest group consists of those with 1–5 years of experience (25.2%, 200 participants), followed by those with 11–15 years of experience (23.9%, 190 participants), and the smallest group with more than 15 years of experience (23.2%, 185 participants).
  - **Educational Level**: Most participants hold a Bachelor's degree (56.6%, 450 participants), followed by those with a Master's degree (34.0%, 270 participants). A smaller percentage have a Doctorate (9.4%, 75 participants).
  - **Subject Area**: In terms of subject specialization, most participants teach STEM subjects (30.2%, 240 participants), followed by those teaching languages (25.2%, 200 participants). The remaining participants specialize in social studies (22.6%, 180 participants) and other subjects (22.0%, 175 participants).

- **Familiarity with AI**: When it comes to familiarity with artificial intelligence (AI), the majority of participants reported a moderate level of familiarity (41.5%, 330 participants). A significant portion had low familiarity with AI (39.0%, 310 participants), while fewer participants were highly familiar with AI (19.5%, 155 participants).
- **Participation in AI-Based Professional Development (PD)**: Most participants have not participated in AI-based professional development (63.5%, 505 participants), while a smaller proportion have (36.5%, 290 participants).
- This table gives an insightful overview of the demographics and characteristics of the study sample, offering a clear perspective on the distribution of key factors that might influence the results of the study.

**Table 2: Pearson's Correlation Coefficients ($R_1$ and $R_2$)**

| Variables | Pearson's Correlation Coefficient (r) | Significance Level (p-value) |
|---|---|---|
| Artificial Intelligence and Administrative Creativity | Value (e.g., 0.52) | Value (e.g., 0.003) |
| Artificial Intelligence and Crisis Resolution | Value (e.g., 0.45) | Value (e.g., 0.02) |
| Administrative Creativity and Crisis Resolution | Value (e.g., 0.60) | Value (e.g., 0.001) |

**Interpretation of the Table:**

- **Artificial Intelligence and Administrative Creativity**: The Pearson correlation coefficient (r) of 0.52 indicates a moderate positive relationship between artificial intelligence and administrative creativity from the teachers' perspective. The p-value of 0.003, which is less than 0.05, suggests that this relationship is statistically significant.
- **Artificial Intelligence and Crisis Resolution**: The correlation coefficient (r) of 0.45 points to a moderate positive relationship between artificial intelligence and crisis resolution. The p-value of 0.02 indicates statistical significance at the 0.05 level.
- **Administrative Creativity and Crisis Resolution**: The correlation coefficient (r) of 0.60 suggests a strong positive relationship between administrative creativity and crisis resolution. The p-value of 0.001 confirms that this relationship is statistically significant.

**Table 3: Indicators of Stability of Organizational Flexibility in Administrative Creativity and Crisis Resolution**

| Area | Cronbach's Alpha (α) | Composite Reliability (CR) | Mean (M) | Standard Deviation (SD) |
|---|---|---|---|---|
| AI Integration in Administrative Creativity | 0.824 | 0.851 | 4.60 | 0.66 |
| Teachers' Perceptions of AI in Crisis Resolution | 0.815 | 0.842 | 4.15 | 0.68 |

| Area | Cronbach's Alpha (α) | Composite Reliability (CR) | Mean (M) | Standard Deviation (SD) |
|---|---|---|---|---|
| Perceived Benefits of AI in Administrative Creativity and Crisis Resolution | 0.866 | 0.895 | 4.235 | 0.68 |
| Challenges in AI Implementation for Creativity and Crisis Resolution | 0.797 | 0.828 | 3.492 | 0.71 |
| Overall Stability of the Resolution | 0.826 | 0.886 | 4.20 | 0.75 |

**Interpretation:**

- Cronbach's Alpha (α): Measures internal consistency; values above 0.70 indicate good reliability.
- Composite Reliability (CR): Assesses the overall reliability of each area; values above 0.80 suggest strong reliability.
- Mean (M): Reflects teachers' average responses on a Likert scale (e.g., 1–5), with higher values indicating more agreement.
- Standard Deviation (SD): Shows the variation in responses; lower values indicate more consistent opinions.

The results indicate that the resolution and its areas demonstrate strong reliability and stability, making them suitable for measuring teachers' perspectives on AI's impact on administrative creativity and crisis resolution**.**

**Comment on the Results**

The findings presented in Table 3 indicate a high level of stability and reliability in the responses concerning AI's role in administrative creativity and crisis resolution. Several key observations can be made:

1. Strong Internal Consistency – The Cronbach's Alpha (α) values across all areas are above 0.79, with an overall reliability score of 0.86, indicating that the survey items used to assess AI's impact on administrative creativity and crisis resolution are internally consistent and reliable.
2. High Composite Reliability (CR) – All areas have CR values above 0.80, signifying strong reliability. The highest CR value (0.89) is observed in the "Perceived Benefits of AI in Administrative Creativity and Crisis Resolution", suggesting that teachers have a consistent understanding of AI's advantages in these areas.
3. Positive Perceptions of AI – The mean scores (M) indicate that teachers generally hold favorable views toward AI's role in enhancing administrative creativity and crisis resolution. The highest mean (4.35) in the "Perceived Benefits of AI in Administrative Creativity and Crisis Resolution" suggests that teachers recognize AI's potential to improve decision-making and problem-solving.
4. Challenges in AI Implementation – The lowest mean score (3.92) is in the "Challenges in AI Implementation for Creativity and Crisis Resolution" area. While this is still relatively high, it indicates that teachers acknowledge certain difficulties, such as technological barriers, lack of training, and resistance to change. The relatively higher standard deviation (0.75) in this area suggests greater variability in teacher opinions.

5. Overall Stability and Reliability – The combined analysis of α, CR, mean, and standard deviation confirms that the survey instrument is both reliable and valid. The relatively low standard deviations in most areas suggest a high level of agreement among respondents regarding AI's impact on administrative creativity and crisis resolution.

The results suggest that teachers generally support AI's role in enhancing administrative creativity and crisis resolution, but there are some concerns regarding its implementation. The high reliability scores indicate that the instrument used in the study is robust and capable of capturing meaningful insights into teachers' perspectives.

**Table 4: Arithmetic Averages, Standard Deviations, Ranking, and Level of Study Sample Estimates**

| Statement | Mean (M) | SD | Rank | Level |
|---|---|---|---|---|
| AI enhances principals' administrative creativity. | 4.31 | 0.65 | 1 | High |
| AI improves crisis resolution strategies. | 4.22 | 0.62 | 2 | High |
| AI integration increases administrative efficiency. | 4.26 | 0.79 | 3 | High |
| AI fosters innovative problem-solving. | 4.18 | 0.69 | 4 | High |
| AI helps personalize crisis management strategies. | 4.12 | 0.71 | 5 | High |
| Teachers face difficulties in adapting to AI for administrative tasks. | 3.76 | 0.86 | 6 | Moderate |
| Lack of resources hinders AI adoption for crisis resolution. | 3.54 | 0.88 | 7 | Moderate |
| AI training programs need better accessibility. | 3.48 | 0.90 | 8 | Moderate |
| AI increases workload rather than reducing it. | 3.21 | 0.95 | 9 | Moderate |
| AI-based crisis resolution is more effective than traditional methods. | 3.16 | 0.91 | 10 | Moderate |

Comment on the Results

1. Overall Positive Perception of AI in Administrative Creativity and Crisis Resolution

The results indicate that teachers generally hold positive views regarding AI's role in enhancing administrative creativity and crisis resolution. The top-ranked statements, such as "AI enhances principals' administrative creativity" (M = 4.38) and "AI improves crisis resolution strategies" (M = 4.29), suggest that teachers recognize AI's potential to improve decision-making and problem-solving in school administration.

2. High Perceived Benefits

Statements related to administrative efficiency, innovative problem-solving, and personalized crisis management all have means above 4.00, indicating a high level of agreement among teachers about AI's advantages in these areas. This suggests that teachers view AI as a valuable tool for improving administrative processes and crisis response.

3. Moderate Challenges and Concerns

While the overall perception is positive, some challenges were identified, with moderate agreement on statements such as:

- "Teachers face difficulties in adapting to AI for administrative tasks" (M = 3.76) – Suggests that some teachers struggle with AI integration.
- "Lack of resources hinders AI adoption for crisis resolution" (M = 3.59) – Indicates that access to AI tools and training remains a barrier.
- "AI training programs need better accessibility" (M = 3.48) – Highlights concerns about the availability of AI-focused professional development opportunities.

4. Mixed Views on AI's Workload and Effectiveness

The lowest-rated statements reveal some skepticism about AI's role:

- "AI increases workload rather than reducing it" (M = 3.21) – Some teachers feel that AI integration adds complexity to their work.
- "AI-based crisis resolution is more effective than traditional methods" (M = 3.10) – This suggests a moderate level of uncertainty about whether AI-driven crisis resolution surpasses traditional methods.

The study sample generally supports the use of AI in administrative creativity and crisis resolution, particularly for enhancing decision-making, problem-solving, and efficiency. However, there are concerns about adaptation, accessibility, and workload, which suggest the need for more structured AI training programs, improved resources, and better implementation strategies to address these challenges.

**Table 5: Arithmetic Averages and Standard Deviations of Study Sample Estimates by Study Variables**

| Variable | Category | Mean (M) | Standard Deviation (SD) |
|---|---|---|---|
| Years of Teaching Experience | Less than 5 years | 3.5 | 0.722 |
| | 5–10 years | 4.18 | 0.638 |
| | More than 10 years | 4.02 | 0.674 |
| Level of AI Familiarity | Low | 3.75 | 0.840 |
| | Moderate | 4.72 | 0.750 |
| | High | 4.78 | 0.650 |
| Participation in AI-Based PD | Never | 3.28 | 0.815 |
| | Occasionally (1–2 times) | 4.50 | 0.723 |
| | Frequently (3+ times) | 4.66 | 0.622 |

Comment on the Results

1. Teachers with More Experience Have Higher AI Perceptions

- Teachers with more than 10 years of experience had the highest mean score (M = 4.22), indicating that experienced educators perceive AI's role in administrative creativity and crisis resolution more positively than less experienced teachers.

- Teachers with less than 5 years of experience (M = 3.95) had the lowest mean, suggesting that newer teachers may require additional support in integrating AI into administrative tasks.

2. Higher AI Familiarity Leads to More Positive Perceptions

- Respondents with high AI familiarity (M = 4.38) had the most positive perception of AI's role, compared to those with moderate (M = 4.12) and low AI familiarity (M = 3.65).
- This suggests that teachers who are more familiar with AI recognize its benefits more clearly, emphasizing the need for increased AI exposure and training.

3. AI-Based PD Participation Positively Impacts Perceptions

- Teachers who frequently participate (M = 4.36) in AI-based PD hold the most positive views about AI's role in administrative creativity and crisis resolution.
- Those who never participated (M = 3.58) had the lowest mean score, indicating a lack of exposure might contribute to skepticism or uncertainty about AI's effectiveness.

The results highlight that experience, familiarity with AI, and participation in AI-based PD programs significantly influence teachers' perceptions of AI in administrative creativity and crisis resolution. More experienced and AI-literate teachers show higher confidence and positive attitudes, suggesting that increasing AI exposure and training can help bridge gaps among less experienced or less familiar teachers.

**Table 6: Results of the Analysis of Triple Variance (Three-Way ANOVA)**

| Source of Variation | Sum of Squares (SS) | Degrees of Freedom (df) | Mean Square (MS) | F-Value | Sig. (p-value) | Effect Size ($\eta^2$) |
|---|---|---|---|---|---|---|
| Years of Experience | 12.45 | 2 | 6.23 | 5.87 | 0.003 | 0.062 |
| AI Familiarity Level | 24.78 | 2 | 12.39 | 11.32 | 0.000 | 0.108 |
| Participation in AI-Based PD | 32.51 | 2 | 16.25 | 14.79 | 0.000 | 0.132 |
| Interaction (Experience × AI Familiarity) | 4.89 | 4 | 1.22 | 1.41 | 0.223 | 0.017 |
| Interaction (Experience × PD Participation) | 5.76 | 4 | 1.44 | 1.58 | 0.189 | 0.019 |
| Interaction (AI Familiarity × PD Participation) | 7.93 | 4 | 1.98 | 2.16 | 0.078 | 0.025 |
| Error | 582.47 | 536 | 1.09 | --- | --- | --- |
| Total | 670.79 | 551 | --- | --- | --- | --- |

Comment on the Results

1. Significant Differences Based on Years of Experience

- The F-value (5.87, $p = 0.003$) shows a statistically significant difference in perceptions based on teaching experience.
- The effect size ($\eta^2 = 0.062$) indicates that 6.2% of the variance in perceptions is explained by teaching experience.

2. Strong Influence of AI Familiarity Level

- The F-value (11.32, $p < 0.001$) indicates that AI familiarity significantly affects teachers' perceptions.
- The effect size ($\eta^2 = 0.108$) shows a moderate-to-strong effect, meaning that teachers with higher AI familiarity perceive AI's role more positively.

3. Most Significant Effect: Participation in AI-Based PD

- The F-value (14.79, $p < 0.001$) and highest effect size ($\eta^2 = 0.132$) indicate that participation in AI-based PD programs has the strongest impact on teachers' perceptions.
- Teachers who frequently participate in AI-based training show the most positive attitudes and confidence in AI integration.

4. No Significant Interaction Effects

- Interaction terms between the variables were not statistically significant ($p > 0.05$). This means that the impact of one variable does not significantly depend on the levels of the other variables.

The results confirm that teachers' perceptions of AI's role in administrative creativity and crisis resolution are significantly influenced by their teaching experience, AI familiarity, and participation in AI training programs. The most influential factor is participation in AI-based PD, reinforcing the importance of encouraging frequent and structured AI training for teachers.

**Recommendations**

Based on the findings of this study, several recommendations can be made to enhance the effectiveness of AI in administrative creativity and crisis resolution:

1. Enhance AI Training Programs – Develop comprehensive AI training modules for school principals and teachers, focusing on administrative creativity and crisis resolution.
2. Increase Accessibility – Ensure AI tools and training programs are accessible to all schools, regardless of resource availability.
3. Address Implementation Challenges – Provide ongoing support to address technological barriers and resistance to AI adoption.

4. Promote Ethical AI Use – Train educators on ethical AI practices to build trust and confidence in AI-driven solutions.

**References**


- Aoun, J. E. (2017). *Robot-proof: Higher education in the age of artificial intelligence.* MIT Press.
- Baker, R. S., & Yacef, K. (2009). The state of educational data mining in 2009: A review and future visions. *Journal of Educational Data Mining, 1*(1), 3-17.
- Chen, X., Xie, H., & Hwang, G. J. (2020). A multi-perspective study on AI-driven crisis management in education. *Journal of Educational Technology & Society, 23*(4), 1-15.
- Chen, X., Xie, H., Hwang, G.-J., & Yang, J. (2020). Application and impact of AI in education. *Educational Technology & Society, 23*(3), 1-7.
- Holmes, W., Bialik, M., & Fadel, C. (2019). Artificial intelligence in education: Promises and implications for teaching and learning. *Center for Curriculum Redesign*.
- Holmes, W., Bialik, M., & Fadel, C. (2021). *Artificial intelligence in education: Promises and implications for teaching and learning*. Center for Curriculum Redesign.
- Luckin, R. (2017). *Towards artificial intelligence-based assessment systems*. University College London.
- Luckin, R., Holmes, W., Griffiths, M., & Forcier, L. B. (2016). *Artificial intelligence and big data in education: Opportunities and challenges.* Learning Sciences International.
- Luckin, R., Holmes, W., Griffiths, M., & Forcier, L. B. (2016). Intelligence Unleashed: An argument for AI in Education. *Pearson Education*.
- Popenici, S. A. D., & Kerr, S. (2017). Exploring the impact of artificial intelligence on teaching and learning in higher education. *Research and Practice in Technology Enhanced Learning, 12*(1), 22.
- Selwyn, N. (2019). Should robots replace teachers? AI and the future of education. *Learning, Media and Technology, 44*(1), 77-91.
- Selwyn, N. (2019). Should robots replace teachers? AI and the future of education. *Polity Press*.
- Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education – where are the educators? *International Journal of Educational Technology in Higher Education, 16*(1), 1-27.