

# Kaizen School Strategy and its Application Limits during the Pre-service Teaching Practicum in Iraqi Secondary Schools

\*Assist. Prof. Dr. Muayyad Naji Ahmed, \*\*Prof. Dr. Sabah Mahdi Rmaid,

#Prof. Dr. Mohammed Amir Jameel

\*The Open Educational College, Baghdad, Iraq

\*\*College of Education, Ibn Rushd, University of Baghdad, Iraq

#Al-Rusafa First General Directorate of Education, Baghdad, Iraq

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## Abstract

This research aimed at finding out the limits of applying Kaizen school strategy by pre-service student teachers during the practicum period in Iraqi secondary schools. The researchers first identified five scopes of that strategy that could be educationally applicable, namely; continuous improvement, group participation, micro-analysis, collaborative work, and directing the efforts. Each scope is identified by specific indicators for the purpose of designing the questionnaire which represents the tool for collecting data from the sample individuals.

The research sample consisted of 100 fourth-grade students in the two departments of Arabic Language and English Language of Ibn Rushd College of Education for Humanities who carried out the 2024-2025 teaching practicum in the secondary schools of Al-Rusafa First Directorate of Education.

The results obtained out of the statistical analysis showed low levels of applying the five scopes of Kaizen school strategy in Iraqi secondary schools by pre-service student teachers during the practicum period. Those results were attributed to lack of knowledge about how to apply Kaizen strategy, how to measure own gradual improvement, how to micro-analyze the teaching process, how to implement collaborative work strategies, and how to direct students' efforts toward the learning outcomes.

It is concluded that the application of Kaizen school strategy in Iraqi secondary schools by pre-service student teachers during the teaching practicum period was limited to low or average levels.

**Keywords:** *Kaizen school strategy; Pre-service student teachers; Practicum teaching; College of Education; Directorate of Education; Sustainable development*

## 1. Introduction

### 1.1 The Problem

New developments occurred worldwide due to technological advancements which in turn led to knowledge explosion. This situation imposed urgent demands on educational institutions to address innovative ideas and effective strategic applications. Among those strategies is the Kaizen school strategy which aims at stimulating, developing and improving personnel performance and creativity as positive outcomes toward achieving the targeted goals.

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The Ministry of Education and the Ministry of Higher Education and Scientific Research in Iraq have been making significant efforts, each according to its responsibilities and its capability to benefit from the outcomes of each other. However, they still need to apply additional strategies, especially those strategies that have achieved tangible success and got public satisfaction. The researchers believe that the application of Kaizen school strategy in those two ministries can accelerate getting promising results.

## 1.2 The Significance

There is no doubt that the environmental, educational and pedagogical disorders have become factors that lead to numerous challenges, particularly in the developing countries. These challenges affect the quality of strategies, methods, and approaches adopted in the education sector and those countries are described as incapable of meeting contemporary requirements to achieve competitive goals at the global level. Perhaps, the Japanese Kaizen strategy is one of the advanced strategy that can be adopted by institutions for improving the individuals' performance as an approach that accelerates productivity and reduces waste in educational and teaching effort, as well as stimulating sustainable innovations that achieve positive results in the long term. (Al-Harbi, 2017: 24)

Felmban and Al-Sharif's study (2020) indicated that Kaizen strategy can improve the individuals' performance. This finding made Saudi Arabia use this strategy in educational institutions as a modern method that helps achieve educational outcomes with a high level of quality. Hence, the researchers introduce this strategy to be adopted in Iraq.

The significance of the current research will have two implications; theoretical and practical. Theoretically, this is the first research on Kaizen school strategy and its application in Iraq during the teaching practicum by the fourth-grade students. Practically, the research results may help decision-makers in the colleges of education to reconsider the teaching practicum of their graduating students and to update the curriculum to include how Kaizen school strategy can be used in schools.

## 1.3 The Aims

This research aims at:

1. Identifying the educational scopes of Kaizen school strategy.
2. Assessing the sample individuals' responses in terms of their understanding of Kaizen school strategy and the identified areas of that strategy.
3. Finding out if there are differences in the responses that can be attributed to the gender variable.

## 1.4 The Limits

This research was limited to 2024/2025 fourth-grade students of Ibn Rushd College of Education who carried out the teaching practicum in the schools of the General Directorate of Education in Baghdad/Rusafa11.

Methodologically, this research was limited to a descriptive analytical method for collecting data by using a questionnaire.

## 1.5 Definition of Basic Terms

A sound understanding of the research procedures requires defining the basic terms including strategy, Kaizen school strategy, and the teaching practicum

Strategy refers to a series of procedures, methods, activities, and practices followed by a teacher to help students understand a topic or a specific study. (The Florida Center for Technology, 2002, p: 9)

Operationally, it is defined as a set of procedures performed by a teacher in a planned and systematic manner to help students achieve specific objectives. Those procedures were identified by answering questions prepared for this purpose.

Kaizen School Strategy is the communication process of introducing programmes and improvement procedures to the educational and learning process in an organized manner, free from traditional, monotonous procedures that are incompatible with digital developments in order to achieve effective goals and strategies in both the teaching and the learning processes. (Alkaser, 2018: 126)

Operationally, it is defined as a systematic process seeking continuous and gradual improvements of human resources in educational institutions.

The teaching practicum refers to the activities and practices undertaken in schools by the fourth-grade college students under the supervision of specialized professors and school administrations to acquire scientific, technical, and skill-based knowledge as well as to engage with educational and technical tools. (Bukheet, 2020: 143)

Operationally, it is defined as the process of developing the students' theoretical and practical knowledge during the teaching practicum period as well as determining the level of their skills and practices by answering the questions prepared for this purpose.

## **2. The Theoretical Background**

The Japanese Kaizen strategy emerged after the World War II in commercial and industrial institutions. It achieved significant success in those institutions and its use expanded to the educational institutions. The founder; Taiichi Ohono relied on careful descriptive analysis during its application. Subsequently, it became a primary strategy in education for achieving sustainable development of human capabilities as its primary focus. (Cana, 2016: 127)

### **2.1 The Concept of Kaizen School Strategy in Education**

It refers to the process by which human potentials can be developed. The leadership, the administration, the technical and the educational responsibilities in the institution work together for setting the procedures of developing individual performance. It also introduces gradual improvement steps and increases production effort. It provides sustainable follow-up practices that contribute to addressing the challenges. (Al-Mouji, 2017: 22)

### **2.1 The Importance of Applying Kaizen Strategy in Education**

According to Krajewski & Ritzman (1996: 79), the importance of Kaizen school strategy can be summarized as follows:

1. It relies on gradual, systematic improvement.
2. It provides procedures in an efficient manner, which leads to the elimination of waste in human efforts and financial resources.
3. It creates an effective environment that is suitable for achieving positive outcomes through team and collaborative work.

### **2.3 The Steps of Using Kaizen Strategy in Educational Institutions**

In the light of what Suárez & Ramis (2010: 480) state, applying this strategy requires the following actions:

1. Identifying the challenges that negatively affect the quality of the provided education through an objective analysis by using SWOT evaluation framework which refers to strengths, weaknesses, opportunities and threats in order to evaluate an institution and to develop strategic planning for reform.
2. Providing continuing support for all individuals in the educational institutions (faculty members, administrators, technicians and students) to manifest behaviors of positive impact on the output quality and the customer satisfaction as well.

3. Making use of the relevant global experiences by establishing joint cooperation with institutions to share the academic and professional advantages.
4. Adopting human resources development programmes as well as conducting studies with contemporary visions.
5. Updating the curricula to meet labor market requirements.
6. Making use of knowledge technology which in turn stimulates students' higher-order thinking skills when teaching the academic subjects. (Suárez & Ramis, 2010: 480)

The researchers believe that the steps of using Kaizen strategy in teaching and learning come through establishing operational indicators that can be represented by four scopes; continuous improvement, group participation, micro analysis, and collaborative work.

## 2.4 The Rationale for Adopting Kaizen School Strategy

In 1986, the UNESCO discussed the current situation in the Arab world during a seminar in Kuwait taking into considerations the trends in formal education innovation. It recommended the need to update the educational systems for two reasons. The first reason is represented by the current and future challenges, particularly in the digital revolution, as well as the scientific and cultural challenges of a post-industrial society (automation and cyberspace). The second reason is represented by the serious desire for change and for stating future visions. (Abdul Latif, 2011:13)

The researchers believe that the objectives of the education system, its structure as well as the curricula can be improved in such a way that could have significant impact on addressing the individual and societal issues. Adopting Kaizen school strategy may be that way.

## 2.5 The Related Studies

The previous related studies that dealt with Kaizen school strategy identified the theoretical and practical aspects of this strategy as follows.

### 2.5.1 Al-Qahtani and Al-Masoud (2012): *The Extent of the Application of Kaizen Principles for Continuous Development in the Educational Districts in Kuwait*

This study identified the extent to which the Kaizen concept is applied in educational administrations and showed the impact of some relevant demographic variables on the possibility of applying Kaizen strategy in management. The study adopted a descriptive analytical approach on a sample of 60 individuals; 18 general directors and 42 department heads. It also used a questionnaire that included four parts. The study concluded that Kaizen strategy was applied very positively in the practices of those administrations. Furthermore, there is no difference between males and females in the application level of Kaizen strategy.

### 2.5.2 Al-Kasir (2016): *Requirements of Kaizen Strategy in Management for the Purpose of Improving Administrative Processes from the Perspective of the Administrative Body*

This study defined the theoretical framework of Kaizen strategy in management, its most important effects, and the associated results of its application among administrative leaders. The researcher used a descriptive survey method and a questionnaire to collect data. The results showed a noticeable decline among managers due to their lack of familiarity with the key concepts, skills, and elements required to understand Kaizen strategy. It also identified significant low level of organizational performance referring to team spirit and customer satisfaction.

### 2.5.3 Al-Silm (2017): *Requirements for Developing the Performance of Educational Leaders in Secondary Schools in Jeddah Governorate in the Light of Kaizen Methodology*

This study identified the requirements for developing the performance of educational leaders in secondary schools in Jeddah Governorate and uncovered the obstacles that hinder their performance development according to Kaizen

strategy. The researcher used a descriptive survey approach and a questionnaire to collect data and information. The researcher concluded that educational leaders are qualified with excellent performance capabilities that satisfy the necessary requirements for developing employee performance based on Kaizen strategy. Those leaders also have significant capability to address administrative challenges.

*2.5.4 Al-Kasir (2018): Kaizen's Theory and Applicability in the College of Education for Girls in Shaqra, Saudi Arabia from the Point of View of the Administrative Body*

This study identified Kaizen strategy, its potential application at the College of Education for Girls in Shaqra city in Saudi Arabia, and the importance of acquiring the strategy requirements in management. The researcher used a descriptive survey approach and a questionnaire. The results showed that the members of the administrative departments at the College of Education for Girls in Shaqra city have a high degree of awareness and knowledge of the importance of utilizing Kaizen strategy in management.

*2.5.5 Omar (2018): A Proposed Concept for Developing the Performance of Faculty of Education Employees at Minya University in the Light of Kaizen Method*

This study suggested a proposal for improving the employees' individual performance at the Faculty of Education, Minia University / Egypt in the light of Kaizen strategy. The researcher used a descriptive survey approach and a questionnaire as a tool. The results showed that the sample responses to the questionnaire items got an average level which meant that their knowledge about this strategy is below the required level.

**2.5.6 A Concluding Remark**

The researchers of the current research got benefit of the previous related studies in terms of:

- 1- Drawing the research outline and using the suitable tool.
- 2- Shaping the theoretical framework for the research context.
- 3- Identifying the suitable statistical data processing means.
- 4- Showing how the conclusions are consistent with the conclusions of the related studies.

**3. Methodology and Procedures**

This chapter explains the research community, sample, methodology, tool, and the statistical means used.

A descriptive approach that is combined with data analysis approach was used, relying on authentic facts without any interference by the researchers.

**3.1 The Community and Sample**

The research community was represented by the fourth-grade students in two departments at Ibn Rushd College of Education for Humanities, University of Baghdad. This community consisted of 100 students; 50 students in the English Language Department and 50 students in the Arabic Language Department for the 2024/2025 academic year, according to the statistics shown on the college's website. Due to the small size of the community, the researchers took the entire original community as the research sample as shown in Table 1.

Table 1: Research Community and Sample

| Gender | Sample | Percentage |
|--------|--------|------------|
| Male   | 50     | 50%        |
| Female | 50     | 50%        |
| Total  | 100    | 100%       |

### 3.2 The Tool

The researchers used a questionnaire to collect data according to the following procedural steps:

- 1- Reviewing the theoretical data and relevant previous studies to edit the items and the limits of their use.
- 2- Consulting other educational researchers' opinions while drafting the questionnaire items.
- 3- Designing a 3-scale questionnaire of two parts. The first part was about gender information and the second part represented five educational areas and 31 indicators. The five areas include continuous improvement, group participations, micro analysis, collaborative work and directing the efforts. The indicators were represented by 31 items.

### 3.3 The Psychometric Properties of the Tool

For a research tool to be effective in measuring a phenomenon, it must have face validity and reliability. (Ebel, 1972: 432)

#### 3.3.1 Face Validity

Face validity means that the tool measures what it was designed to measure and nothing else (Al-Ni'mah and Al-Ajili, 2014: 241). Face validity is achieved by submitting the questionnaire to a jury specialized in educational and psychological sciences, measurement and evaluation, as well as curricula and methods of teaching (Appendix) who judged the suitability of the questionnaire in terms of the number of items, diversity of content, quality of formulation, and wording accuracy.

#### 3.3.2 Reliability

Reliability refers to being free of systematic error (Alken, 1988: p. 85). To guarantee the reliability of the questionnaire, the split-half method was used. The correlation coefficient between the two parts was calculated, and then statistically corrected and adjusted by using the Spearman-Brown predictive equation. Accordingly, the reliability coefficient for the entire questionnaire was (0.78), which is a good reliability coefficient ensuring the instrument's internal consistency. The Kuder-Richardson coefficient ( $KR-20 = 0.81$ ) was also used, indicating a very good level of reliability as it was more than (0.80), reflecting the instrument's high internal consistency.

#### 3.3.3 The Statistical Means Used

To statistically process the data, the statistical package (SPSS) was used to calculate the following:

- The arithmetic means, standard deviations, and percentages.
- The T-test value for a sample drawn from a known population.
- The T-test value for two independent samples.
- Spearman-Brown correlation to determine reliability using the split-half method.
- Kuder-Richardson coefficient  $KR-20 = 0.81$  for internal consistency.

### 4. Presentation and Interpretation of Results

In this section, the researchers present and interpret the obtained results.

#### 4.1 Understanding the Kaizen Strategy

The calculated arithmetic mean for the sample was 61.5 with a standard deviation of 4.51 whereas the hypothetical mean was 62. It is noted that the hypothetical mean is lower than the sample mean, as shown in Table 2.

Table 2: T-value and Significance of Students' Perspectives about Kaizen Strategy

| Sample Mean | SD   | Hypothetical Mean | Calculated t-value | df | Tabular t-value | Significance    |
|-------------|------|-------------------|--------------------|----|-----------------|-----------------|
| 62.50       | 4.51 | 62                | 1.11               | 99 | 1.96            | Not significant |

To ensure that this mean represented statistically significant differences, the t-test analysis for a sample drawn from a known community was used. It is found out that the calculated t-value was 1.11 which is less than the tabular value 1.96, with a 99 degree of freedom and a significance level of (0.05). This meant that the observed difference is not statistically significant, i.e. the research sample had an average level in the overall score of the tool. This can be explained by the fact that the students of the Arabic and English departments lacked an understanding of how to apply Kaizen strategy in teaching. This result was consistent with the results of Omar's study 2018 which showed that the sample members' responses to the questionnaire items were at the average level.

#### 4.2 Continuous Improvement

The calculated arithmetic mean for the sample of 100 male and female students was 12.11 with a standard deviation of 1.80 whereas the hypothetical mean was 12. It was noted that the hypothetical mean was less than the sample mean, as shown in Table 3.

Table 3

T-value and Significance of Continuous Improvement

| Sample Mean | SD   | Hypothetical Mean | Calculated t-value | df | Tabular t-value | Significance    |
|-------------|------|-------------------|--------------------|----|-----------------|-----------------|
| 12.11       | 1.80 | 12                | 0.56               | 99 | 1.96            | Not significant |

To ensure that this mean represented statistically significant differences, the analysis was conducted by using the t-test for a sample drawn from a known community. It was found out that the calculated t-value 0.56 was less than the tabular value 1.96 with a 99 degree of freedom and a significance level 0.05, which meant that the observed difference was not statistically significant. It was concluded that the students' knowledge was of an average level in the field of continuous improvement. This occurred as a result of the weakness of the students' self-evaluation system of their ability to measure the gradual improvements they made, which affected the limits of application. This result differed from the results of Al-Kasir's study 2016 which showed a low level of organizational performance represented by the spirit of the team and the satisfaction of the community.

#### 4.3 Group Participation

The calculated arithmetic mean for the sample, 100 male and female students, was 11.8 with a standard deviation of 1.90 whereas the hypothetical mean for the tool was 12. It was noted that the hypothetical mean is higher than the sample mean, as shown in Table 4.

Table 4: T-value and Significance of Group Participation

| Sample Mean | SD   | Hypothetical Mean | Calculated t-value | df | Tabular t-value | Significance    |
|-------------|------|-------------------|--------------------|----|-----------------|-----------------|
| 11.8        | 1.90 | 12                | 0.75               | 99 | 1.96            | Not significant |



To ensure that this mean reflected statistically significant differences, the t-test was used for a sample drawn from a known community. It appeared that the calculated t-value was 0.75 which is less than the tabular t-value 1.96 with a degree of freedom of 99 and a significance level of 0.05. Thus, the observed difference is not statistically significant. It is concluded that the target group has an average level in the field of group participation and that the reason behind this result was due to their weak awareness of the content of Kaizen strategy and its effectiveness in education. This result was consistent with the results of Omar's study 2018.

#### 4.4 Micro Analysis

The calculated arithmetic mean was 11.90 with a standard deviation of 1.61 whereas the hypothetical mean for the tool was 12. Therefore, the hypothetical mean is greater than the sample mean as shown in Table 5.

Table 5: T-value and Significance of Micro Analysis

| Sample Mean | SD   | Hypothetical Mean | Calculated t-value | df | Tabular t-value | Significance    |
|-------------|------|-------------------|--------------------|----|-----------------|-----------------|
| 11.90       | 1.61 | 12                | 0.48               | 99 | 1.96            | Not significant |

To ensure that this mean reflected statistically significant differences, a t-test was used for a sample drawn from a known population. The calculated t-value was 0.48 which is less than the tabular value 1.96 with a degree of freedom of 99 and a significance level of 0.05 which meant that the observed difference is not statistically significant. The research sample achieved an average level in the field of precise analysis, and the reason for this was their low level of scientific competence, especially in the field of analyzing the teaching process. This result differed from the result of Al-Kasr' study 2018 which showed the target group's cognitive high awareness of the content and the application of Kaizen strategy.

#### 4.5 Collaborative Work

The arithmetic mean for the sample was 12.31 with a 1.70 standard deviation whereas the hypothetical mean for the tool was 12. The hypothetical mean was less than the sample mean as shown in Table 6.

Table 6: T-value and Significance of Collaborative Work

| Sample Mean | SD   | Hypothetical Mean | Calculated t-value | df | Tabular t-value | Significance    |
|-------------|------|-------------------|--------------------|----|-----------------|-----------------|
| 12.31       | 1.70 | 2                 | 1.12               | 99 | 1.96            | Not significant |

To ensure that this mean reflected statistically significant differences, the t-test was used for a sample drawn from a known community. It appeared that the calculated t-value of 1.12 was less than the tabular value of 1.96 with a degree of freedom of 99 and a significance level of 0.05. This meant that the observed difference was not statistically significant, i.e. the research sample had an average level. This result was attributed to the target group resorting to quick individual solutions instead of focusing on the importance of collaborative group work. This result was consistent with the results of Bakir's study 2016 which showed a noticeable decline in the level of organizational performance represented by working as a team.

#### 4.6 Directing the Efforts

The arithmetic mean for the sample was 13.62 with a standard deviation of 2.01 whereas the hypothetical mean for the tool was 2. It is noted that the hypothetical mean was less than the sample mean as shown in Table 7.



Table 7: T-value and Significance of Directing the Efforts

| Sample Mean | SD   | Theoretical Mean | Calculated t-value | df | Tabular t-value | Significance    |
|-------------|------|------------------|--------------------|----|-----------------|-----------------|
| 13.62       | 2.01 | 12               | 0.52               | 99 | 1.96            | Not significant |

To ensure that this mean had statistically significant difference, the t-test was used for a sample drawn from a known population. The calculated t-value was 0.52 which is less than the tabular value 1.96 with a degree of freedom of 99 and a (0.05) significance level. The observed difference was not statistically significant and the research sample got an average level in the field of directing the efforts. This result was attributed to the sample individuals' limited awareness of the practical application process regarding how to direct the students towards applying modern strategies, including Kaizen strategy. This result differed from the results of the Ladder's study 2017 which concluded that the target group had great performance especially in terms of the requirements necessary to develop their performance in the light of Kaizen strategy as well as their effective ability to address administrative challenges.

#### 4.7 Gender Variable

The calculated arithmetic mean for each gender ranged from 61.80 to 61.30 and the standard deviations ranged from 4.31 to 4.71 respectively as shown in Table 8.

Table 8: Means and Standard Deviations of Gender Responses

| Gender | Sample | Means | sd   | Calculated T-value | df | Tabular T-value | Significance    |
|--------|--------|-------|------|--------------------|----|-----------------|-----------------|
| Male   | 50     | 61.80 | 4.31 | 0.56               | 98 | 1.96            | Not significant |
| Female | 50     | 61,30 | 4.71 |                    |    |                 |                 |

It is noted from Table 8 that the calculated t-value was 0.56 which is less than the tabular value of 1.96 at a significance level of 0.05 and a degree of freedom 98. This meant that there were no statistically significant differences among the sample members' answers to the questionnaire items that could be attributable to the gender variable (male or female). The students, males and females, had similar perspectives about the aspects of the practical application as they experience the same educational conditions. This result was consistent with the results of Al-Qahtani and Al-Amiri's study 2012 which showed that there were no differences between the males and females' opinions about the application and employment of Kaizen strategy in the educational process.

## 5. Conclusions

The researchers concluded that the application of Kaizen strategy in Iraqi secondary schools by fourth-year college student-teachers during the pre-service teaching practicum period got an average statistical level in terms of the students' perspectives about their understanding of Kaizen strategy, evaluation of own continuous improvement, the effectiveness of group participation, the importance of collaborative work in addressing the challenges and their style of directing their students' efforts. Only the micro teaching analysis cognitive awareness got a low statistical level. However, the results indicated that the opportunity to increase those levels was within reach and could be possible if the following recommendations are taken into consideration.

## 6. Recommendations

In the light of the obtained results, the researchers recommended the following:

- 1- Forming a joint committee of specialists and experts to state the standards that student-teachers should follow to apply Kaizen school strategy.

2- Making use of electronic communication between the students and their colleges professors during the teaching practicum period as a follow-up process.

3- Organizing scheduled electronic workshops to identify and address the challenges that the students face and also to show the positive and negative results during and at the end of the teaching practicum period.

## **7. Suggestions**

Considering the importance of the topic of this research, the researchers suggested carrying out other researches on the following topics:

1- The relationship between Kaizen school strategy and the leadership style of the faculty members in educational institutions

2- The importance of being engaged with Arab and international institutions who adopt Kaizen school strategy to get benefit of their experiences

3- The relationship between Kaizen school strategy and the administrative management process.

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## **Appendix**

### Jury Members

- Prof. Dr. Usama H. Hasan, Assessment and Evaluation, The Open Educational College
- Prof. Dr. Alaa H. Al-Nasir, Educational Management, College of Education (Ibn Al-Haytham) for Pure Sciences, University of Baghdad
- Prof. Dr. Falah K. Kadhum, Political Systems, College of Political Sciences, Mustansiriyah University
- Prof. Dr. Muhsin S. Hasan, Educational Psychology, College of Arts, Al-Iraqia University
- Assist. Prof. Dr. Sadiq A. Aziz, Assessment and Evaluation, The Open Educational College
- Assist. Prof. Dr. Muayyad N. Ahmed, Curriculum and English Language Teaching, The Open Educational College
- Assist. Prof. Dr. Mubdir Sh. Ahmed, Linguistics, The Open Educational College