The Role of Quality Practices in Enhancing Training Quality at the Technical College in Makkah

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Abstract:

This study aims to explore the role of quality practices in enhancing training effectiveness in technical colleges, with a particular focus on the Technical College in Makkah. Employing a descriptive-analytical approach, the study utilized a structured questionnaire distributed to a sample of 73 trainers. The research examined six key dimensions of quality practices: leadership and management, trainer performance, trainee services, curriculum alignment with labor market needs, training environment, and the impact of training on employment opportunities. The findings revealed a high level of quality practice implementation, particularly in strategic planning, trainer competence, and the availability of a suitable training environment. However, the results also indicated the existence of gaps between training outcomes and labor market demands. Based on these findings, the study proposes practical recommendations to improve training quality and enhance graduates' readiness for employment. This research contributes to advancing technical education and aligns with the objectives of Saudi Vision 2030 in workforce development and quality assurance.

Keywords: Quality Practices, Technical Training, Total Quality Management, Training Effectiveness.

Introduction

In the era of rapid technological transformation, technical and vocational education and training (TVET) plays a pivotal role in preparing graduates with the competencies required by evolving labor markets. However, in Saudi Arabia, empirical research reveals persistent mismatches between the skill sets provided by TVET programs and employer expectations, particularly in areas such as professional knowledge, soft skills, and practical readiness, which compromises graduates'

employability (Algassem & Hassan, 2024; UNESCO-UNEVOC report, 2023). Therefore, investigating the role of structured quality practices in bridging this gap is essential.

In response, Saudi Vision 2030 positions technical and vocational training as a national priority, aiming to enhance workforce readiness, close skills gaps, and strengthen the contribution of technical colleges to sustainable development (TVTC Strategic Vision, 2023). Achieving these goals requires the implementation of rigorous quality assurance mechanisms that align institutional practices with labor market dynamics. Recent studies have shown that the adoption of Total Quality Management (TQM) frameworks in education particularly when applied across dimensions such as leadership, continuous improvement, and data-driven decision-making—can significantly enhance training effectiveness and institutional performance (Aichouni et al., 2023; Al-Shafei et al., 2015).

Against this backdrop, the present study investigates the role of quality practices in enhancing training effectiveness at the Technical College in Makkah. It focuses on five key dimensions: management and leadership, trainer competence, trainee services, curriculum alignment, and the training environment. Grounded in the principles of TQM, the study aims to assess the extent to which these practices contribute to achieving training quality and labor market alignment within the context of national reforms.

Research Problem

Despite national efforts to improve technical and vocational education in Saudi Arabia, several challenges persist that hinder the delivery of high-quality training. These include the absence of unified quality standards, inconsistencies in quality assurance implementation across institutions, and weak alignment between training programs and the actual needs of the

labor market (Algassem & Hassan, 2024; UNESCO-UNEVOC, 2023).

At the Technical College in Makkah, such issues may affect the effectiveness of training programs and the employability of graduates. These gaps raise concerns about the adequacy of existing quality practices in achieving training objectives and responding to the demands of Saudi Vision 2030, which emphasizes workforce preparedness and institutional excellence.

Accordingly, this study seeks to address the following central research question:

"To what extent do quality practices at the Technical College in Makkah contribute to improving training quality and aligning with labor market needs?"

Research Objectives

This study aims to investigate and evaluate the implementation of quality practices at the Technical College in Makkah and assess their impact on the overall quality of training provided to students. In line with the goals of national vocational training and the aspirations of Saudi Vision 2030, the study seeks to achieve the following specific objectives:

1. To identify the standards and criteria currently used to evaluate training quality at the Technical College in Makkah and examine their compatibility with national technical and vocational training frameworks.

2. To investigate the methods and techniques employed in training delivery and assessment and evaluate their effectiveness in achieving excellence in technical training.

3. To assess the alignment of training programs with labor market requirements and identify any potential gaps that may hinder graduates' employment prospects.

4. To recommend applicable strategies and practices for improving the quality of training based on the study's findings and evidence collected from the field.

By achieving these objectives, the study aims to contribute meaningfully to the enhancement of training quality at the institutional level and support broader national efforts in workforce development and educational reform.

Theoretical Significance:

This study contributes to the growing body of literature on the role of quality assurance practices in technical and vocational education. By examining the implementation of specific quality standards such as strategic planning, trainer development, and curriculum relevance the study provides a framework for understanding how Total Quality Management (TQM) principles are applied within the context of a Saudi technical college. The findings offer empirical insights that can inform future academic studies on training quality, institutional performance, and education reform in similar educational settings.

Practical Significance:

On the practical level, this study addresses real-world challenges faced by the Technical College in Makkah and similar institutions. Its results help identify strengths and weaknesses in existing training practices and provide actionable recommendations for improvement. The study supports the development of evidence-based strategies that can enhance training effectiveness, improve graduate employability, and better align institutional outcomes with the needs of the labor market. In doing so, the research directly contributes to the goals of Saudi Arabia's Vision 2030 by promoting high-quality, labor-responsive technical education that supports national economic development.

Limits of the Study

Topical Limits: This study focuses on exploring the role of quality practices in enhancing training quality through six specific dimensions: management and leadership, trainer performance, trainee services, curriculum alignment with labor market needs, training environment, and employment outcomes.

Spatial Limits: The scope of the study was limited to the Technical College in Makkah.

Temporal Limits: The data was collected during the academic year 2024.

Human Limits: The sample consisted of 73 trainers employed at the Technical College in Makkah.

Theoretical Framework of the Study

This study is grounded in the quality control methodology adopted by the General Organization for Technical and Vocational Training (TVTC), which serves as the national reference framework for evaluating and managing training quality in technical colleges and industrial institutes across Saudi Arabia. The framework consists of a set of interrelated concepts, criteria, and indicators that guide the planning, implementation, and evaluation of training programs.

Key Concepts and Terminology

• Quality: Refers to the extent to which a product or service conforms to established criteria and specifications. In the context of technical education, quality indicates the ability of training programs to meet predefined learning objectives and satisfy the expectations of stakeholders primarily trainees, trainers, and employers.

• Standard: A standard defines the ideal or expected level of performance. It provides a structured basis for managing organizational practices with the aim of achieving continuous improvement and institutional effectiveness. These standards serve as benchmarks against which various aspects of the

training process such as curriculum, instruction, and outcomes are evaluated.

• Element**:** An element is a sub-component of a standard. Each element represents a specific area of practice that contributes to achieving the overall quality standard and includes several indicators.

• Indicator**:** An indicator is a measurable (quantitative or qualitative) expression of performance. Indicators are used to monitor changes and determine the extent to which desired outcomes are achieved. For indicators to be meaningful, they must be direct, objective, practical, and regularly updated.

Domains of Quality Standards

According to the TVTC framework, training quality is assessed across five key domains:

1. Management and Leadership: This domain addresses the presence of a clear strategic vision and mission within the training institution and evaluates how well these guide planning, performance management, and continuous improvement. It also considers organizational structure, decision-making processes, internal communication, human resource development, and community engagement. Effective leadership is essential for cultivating a quality culture and ensuring that performance is regularly reviewed and enhanced.

2. Trainers: This standard focuses on the competencies, performance, and professional development of trainers. It includes the evaluation of instructional strategies, lesson design and delivery, trainer accountability, and their role in improving trainee outcomes. Trainer motivation, commitment, and ongoing capacity-building are integral to maintaining quality in training delivery.

3. Trainees: This domain assesses how trainees are supported and evaluated throughout the training process. It includes

mechanisms for orientation, academic and behavioral monitoring, continuous feedback, and extra-curricular support. The standard also measures the effectiveness of assessment tools and how results are analyzed and used to enhance learning outcomes and address trainee needs.

4. Curricula: This domain evaluates the relevance and suitability of the training curricula in meeting labor market needs. It emphasizes the importance of aligning learning outcomes and skill development with industry requirements and ensuring that curriculum content is regularly reviewed and updated to remain responsive to market dynamics.

5. Training Environment: These standard measures the adequacy and readiness of the physical and technological infrastructure supporting the training process. It includes the availability and maintenance of workshops, laboratories, tools, and safety systems. A conducive training environment is essential to delivering high-quality, practice-oriented learning experiences that mirror real-world work settings.

Literature Review

Total Quality Management (TQM) has become a key framework for enhancing organizational performance in both public and private sectors. In the context of education, numerous studies have examined how the application of TQM principles influences institutional effectiveness, curriculum development, staff performance, and student outcomes.

Aichouni et al. (2023) conducted an empirical investigation into the implementation of TQM practices within Saudi organizations and their effect on occupational safety and health (OSH) performance. Utilizing a descriptive analytical method with data collected from 99 respondents across various institutions, the study revealed a statistically significant positive relationship between the application of quality practices, particularly leadership commitment, continuous improvement, and customer

focus and enhancements in OSH outcomes. These findings support the broader argument that structured quality management can produce measurable improvements in institutional performance within the Saudi Arabian context

Alshuqairat et al. (2023) investigated the effect of Total Quality Management practices on the organizational reputation of public universities in Jordan, with a particular focus on the moderating influence of quality standards. Using a stratified sample of 390 academic staff from five universities, regression analysis revealed that high-quality standards significantly enhance the positive impact of TQM on institutional reputation. These findings support the notion that well-defined quality standards are crucial for the effectiveness of TQM initiatives within higher education contexts

Faridi, Al-Kahtani, & Malki (2016) conducted a pilot study at Salman bin Abdulaziz University in Al-Kharj to assess the implementation of Student Quality Circles (SQC) and their impact on undergraduate students' teamwork, leadership, and quality mindset. Utilizing a pre–post experimental approach, the study reported significant enhancements in collaborative behavior, student–faculty relationships, and campus engagement. These outcomes support the effectiveness of participatory quality tools in fostering empowerment, communication, and a quality-oriented culture within the educational environment.

Abukhader & Onbaşıoğlu (2021) investigated the impact of Total Quality Management (TQM) practices—including leadership, employee involvement, continuous improvement, and customer focus—on employee performance within public institutions. Using hierarchical regression analysis, the study also revealed that professional training significantly strengthened the relationship between TQM practices and employee performance. These results underscore the importance of embedding structured quality practices and staff development in organizational

strategies to enhance effectiveness, which directly informs the goals of the present study in technical training environments.

Raheem et al. (2020) applied a descriptive-analytical methodology in examining how Total Quality Management (TQM) principles are adopted within Sudanese public universities. Using a sample of 150 academic community members, they found that a lack of continuous performance evaluation, absence of strategic planning, and shortage of qualified faculty hinder institutional improvement. The study strongly recommends embedding a culture of continuous evaluation, establishing clear plans, and hiring qualified staff to enhance administrative and academic performance. These findings resonate with the present study's objectives to evaluate quality practices in education and their impact on institutional effectiveness.

Ibeaheem, Elawady & Ragmoun (2018) investigated the alignment between learning outcomes in Saudi higher education and the labor market's expectations, highlighting key gaps in practical training, English proficiency, and collaborative education. The study, which applied a descriptive-analytical methodology, emphasized the need for improved cooperative training programs and curriculum revisions to enhance graduate employability. These insights directly support the present study's objective to assess and enhance training quality in technical education by aligning it with labor market requirements.

Similarities, Differences, and Research Gap
Similarities

A review of both Arabic and international literature reveals a clear consensus that the application of Total Quality Management (TQM) principles significantly contributes to enhancing institutional performance within educational settings. Most studies emphasize the role of TQM in improving academic programs, increasing staff efficiency, and enriching the overall

learner experience. For instance, the studies by Abukhader & Onbaşıoğlu (2021) and Raheem et al. (2020) underscore the importance of institutional quality frameworks, leadership, and continuous professional development in elevating staff performance. Similarly, Aichouni et al. (2023) and Alshuqairat et al. (2023) identified leadership commitment and adherence to quality standards as key factors in the successful implementation of TQM in higher education. The study by Ibeaheem et al. (2018) highlighted the significance of aligning learning outcomes with labor market requirements as a primary indicator of program effectiveness. Additionally, Faridi et al. (2016) demonstrated the effectiveness of participatory quality tools such as Student Quality Circles in fostering collaboration and empowerment within the educational environment, which aligns with the current study's aim of establishing a more integrated and quality-driven training environment within technical colleges.

Differences

Despite this general agreement, differences emerge in the scope and context of the reviewed studies. While several focused on traditional higher education institutions, such as those explored by Alshuqairat et al. and Raheem et al., the present study distinguishes itself by focusing on the technical and vocational training environment, which has a more immediate connection to labor market dynamics. Furthermore, whereas some studies evaluated specific quality tools such as Student Quality Circles or indicators of institutional reputation, this study adopts a broader, strategic view of quality practices, encompassing management, training environments, staff competencies, and curriculum design. Additionally, while some research has emphasized the impact of TQM on academic or individual performance, the current study centers on improving

the quality of technical training and aligning it with employment and professional development requirements.

Research Gap

Although numerous studies have explored TQM in higher education, there remains a noticeable gap in applied research focused on technical colleges in the Kingdom of Saudi Arabia, particularly within the city of Makkah. The literature also lacks comprehensive investigations that explore the integrative relationship between quality practices and vocational training quality in local contexts targeting national workforce development and labor market needs. Therefore, the present study is essential in bridging this gap by analyzing the current state of quality practices at Makkah Technical College and offering evidence-based recommendations that contribute to improving training quality and achieving better alignment with the objectives of Saudi Vision 2030.
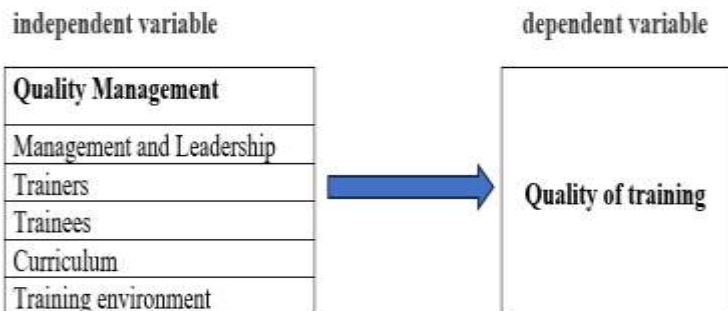
Study methodology:

The study relied on a descriptive and analytical approach appropriate to its objectives, aiming to explore the various dimensions of quality management and evaluate the quality of training at the Makkah College of Technology. Appropriate statistical methods were employed to analyze the collected data and examine the relationships between the study variables, ensuring the validity and reliability of the findings.

Study Population and Sample

The study population consists of all trainers working at the Technical College in Makkah. From this population, a convenient sample of 73 trainers was selected to participate in the study. This sample is deemed sufficient to represent the population and provide valid insights into statistical analysis.

Study Model:

independent variable   dependent variable

Quality Management
Management and Leadership
Trainers
Trainees
Curriculum
Training environment

→ | **Quality of training** |

The study model illustrates the relationship between the independent variable and the dependent variable in this study, which consists of two variables, the independent variable quality management, and the dependent variable training quality. Independent variable: Quality management is a set of practices that aim to improve the quality of training, represented by the following elements: management and leadership, trainers, trainees, curricula, training environment. The dependent variable: the quality of training, which indicates the extent to which the training can achieve its objectives, and includes elements: trainee satisfaction, employment rates.

Research Tools:

A questionnaire was used as a tool to collect the required and necessary data from the sample individuals. The questionnaire consisted of the following sections: Section One Personal data of the sample individuals, including their academic qualifications and experience in the field of training. Section Two this section included paragraphs related to each axis of the study, consisting of 32 statements that were answered using a five-point Likert scale according to the values (Strongly Agree (5), Agree (4), Neutral (3), Disagree (2), Strongly Disagree (1)).

Study Axes:

- Quality measurement axis for the management and leadership standard.

- Quality measurement axis for the performance of trainer's standard.
- Quality measurement axis for the level of achievement and services provided to trainees.
- Quality measurement axis for the alignment of training programs with the labor market.
- Quality measurement axis for providing a suitable training environment that keeps pace with labor market developments.
- The impact of training quality on employment opportunities.

Statistical Analysis Plan

The data collected from the questionnaire were analyzed using the Statistical Package for the Social Sciences (SPSS). The following statistical techniques were applied:

1. Pearson's correlation coefficient was used to assess the internal consistency of the questionnaire items.
2. Cronbach's Alpha coefficient was calculated to evaluate the reliability and stability of the measurement instrument.
3. Frequencies and percentages were computed to describe the demographic characteristics of the study sample.
4. Means and standard deviations were calculated to answer the research questions and assess participants' responses to each axis of the study.
5. One-Way Analysis of Variance (ANOVA) was employed to examine statistically significant differences in responses across the questionnaire axes based on the participants' background characteristics (academic qualification, years of experience).
6. A significance level of ($\alpha = 0.05$) was adopted to determine statistical significance across all tests.

Additionally, the analysis utilized a five-point Likert scale to interpret participants' responses. Weighted mean scores were used to identify the overall trends in responses based on the following scale:

Table 4: Rating Scale According to the Likert Five-Point Scale

Response	Weighted average	General direction
Strongly disagree	From 1 to 1.80	Strongly disagree
Disagree	From 1.81 to 2.60	Disagree
neutral	From 2.61 to 3.40	medium
agree	From 3.41 to 4.20	agree
Strongly agree	From 4.21 to 5	Strongly agree

Instrument Reliability Analysis

To assess the reliability of the research instrument, Cronbach's Alpha coefficients were calculated for each axis of the questionnaire. As shown in Table 1, all values exceeded the acceptable threshold of 0.70, indicating strong internal consistency across the study dimensions.

Table (1): Cronbach's Alpha Coefficients for Instrument Reliability

Variables	Number of phrases	Alpha Cronbach Coefficient
Management & Leadership	6	0.89
Trainers	4	0.84
Trainees	5	0.84
curricula	4	0.86
Training Environment	5	0.86
employment opportunities	8	0.82
Total	**32**	**0.96**

Cronbach's Alpha coefficients ranged from 0.82 to 0.89 for individual axes, while the overall reliability coefficient for the full instrument (32 items) reached 0.96, reflecting a high level of reliability. This confirms that the measurement tool used in the study is both consistent and dependable for evaluating the dimensions of quality practices and training effectiveness at the Technical College in Makkah. These results support the

appropriateness of the questionnaire as a data collection tool, ensuring that the responses obtained are stable and replicable across similar samples.

Instrument Validity Analysis

To ensure the construct validity (internal consistency) of the study instrument, Pearson's correlation coefficients were calculated between the dimensions of the independent variable (Quality Management) and the dependent variable (Training Quality). The results are presented in Table 2.

Table (2): Pearson's Correlation Coefficients Between Study Variables

Independent variables	Dependent variable	Pearson's Correlation Coefficient
Management & Leadership		**0.712
Trainers	Quality of training	**0.627
Trainees		**0.691
curricula		**0.756
Training Environment		**0.730

All correlation coefficients were found to be positive and statistically significant at the 0.05 level, with values ranging from 0.627 to 0.756, indicating moderate to strong associations between each quality management dimension and training quality. These results confirm that the instrument items are aligned with the constructs they intend to measure, thereby supporting the validity of the questionnaire.

Demographic Characteristics Axis

Table (3): Distribution of the study sample by academic qualification and training experience

Academic Qualification	Frequencies	percentage	Experience in training	Frequencies	percentage
diploma	1	1.4%	1 - 5 Years	3	4.1%
Bachelor	29	39.7%	6 - 10 Years	13	17.8%

Master	38	52.1%	11 - 15 Years	17	23.3%
Doctor	5	6.8%	More than 15 years	40	54.8%
Total	**73**	**100%**	**Total**	**73**	**100%**

Table (3) presents the demographic distribution of the study sample, which consisted of 73 trainers at the Technical College in Makkah. In terms of academic qualifications, more than half of the participants (52.1%) held a master's degree, followed by 39.7% who held a bachelor's degree. Only 6.8% had a doctoral degree, while a very small proportion (1.4%) held a diploma. Regarding training experience, most participants (54.8%) had more than 15 years of experience in the training field. Meanwhile, 23.3% reported having 11 to 15 years of experience, 17.8% had between 6 to 10 years, and only 4.1% had between 1 to 5 years. This distribution reflects a sample with a high level of academic and professional experience, which supports the reliability and relevance of their responses to the questionnaire.

First Axis: Quality Measurement of the Management and Leadership Standard

Descriptive analysis was conducted by calculating the means and standard deviations of the respondents' answers to the statements under this axis. The results are presented in the following table:

Table 4: Descriptive statistics for the "Leadership and Management" axis

Question	Mean	Std. Deviation	level
The college has a strategic plan aimed at achieving clear objectives and has been developed in consultation with the relevant authorities.	3.92	0.95	agree
The strategic plan of the college is reviewed periodically	3.49	1.01	agree
The tasks of each employee in the college are clear and specific.	3.99	0.93	agree
Work in the college is carried out according to clear and documented procedures	3.81	1.03	agree
The financial resources of the college are managed according to clear procedures and criteria	3.23	0.94	medium
The existence of a mechanism to motivate trainers and trainees to creativity and excellence	4.10	1.25	agree
overall average	**3.73**	**0.83**	**agree**

Table (4) presents the descriptive analysis of the "Management and Leadership" axis by calculating the arithmetic means and standard deviations for each statement. The overall mean score was 3.73, with a standard deviation of 0.83, indicating a general agreement among the respondents regarding the quality of leadership and management practices at the college. The highest-rated statement was "The existence of a mechanism to motivate trainers and trainees to creativity and

excellence" with a mean of 4.10, reflecting a strong perception of motivational efforts. This was followed by "The tasks of each employee in the college are clear and specific" (mean = 3.99) and "The college has a strategic plan aimed at achieving clear objectives and has been developed in consultation with the relevant authorities" (mean = 3.92), both reflecting solid agreement on strategic planning and role clarity. Meanwhile, the statement "Work in the college is carried out according to clear and documented procedures" scored 3.81, and "The strategic plan of the college is reviewed periodically" scored 3.49, suggesting a moderate level of agreement regarding procedural clarity and plan evaluation. The lowest-rated statement was "The financial resources of the college are managed according to clear procedures and criteria," with a mean of 3.23, indicating a neutral to moderate agreement and pointing to an area that may require attention for quality enhancement. Overall, these findings suggest a favorable perception of leadership and management quality, albeit with some opportunities for improvement in specific dimensions.

Second Axis: Quality Measurement of the Trainers' Performance Standard.

Descriptive analysis was conducted by calculating the arithmetic means and standard deviations of the participants' responses to the items under the second axis. The results are presented in the following table:

Table(٥) Descriptive statistics for the " trainers " axis

Question	Mean	Std. Deviation	level
The college offers training programs for training and developing trainers	3.53	1.10	agree
Trainers have the skills and experience to deliver training effectively	4.11	0.80	agree
Trainers use training methods, and they mean that they motivate trainees when they provide training	3.81	0.96	agree
There is encouragement and support for trainers to develop professionally and improve their skills	3.59	1.14	agree
overall average	**3.76**	**0.83**	**agree**

Table (5) presents the descriptive statistics for the "Trainers" axis, based on the arithmetic means and standard deviations of respondents' answers. The overall mean score for this axis was 3.76, with a standard deviation of 0.83, indicating a general agreement among respondents regarding the quality of trainer performance at the college. The highest-rated item was "Trainers have the skills and experience to deliver training effectively" with a mean score of 4.11, reflecting strong confidence in the trainers' professional competence. This was followed by the statement "Trainers use training methods and means that motivate trainees when they provide training" (mean = 3.81), highlighting positive perceptions of the instructional strategies used.

In third place was "There is encouragement and support for trainers to develop professionally and improve their skills" with a mean of 3.59, suggesting moderate but favorable views

toward professional development opportunities. The lowest-rated item was "The college offers training programs for training and developing trainers" with a mean score of 3.53, which—although still indicating agreement—points to a potential area for enhancement in institutional support for ongoing trainer development. Overall, the responses reflect a positive assessment of trainer performance, particularly in terms of existing skills and engagement methods, while also signaling a need for more structured institutional efforts to sustain and develop these capabilities further.

Axis Three: Quality Measurement of the Level of Achievement and Services Provided to the Trainee. Descriptive analysis was conducted by calculating the arithmetic means and standard deviations of the respondents' answers to the statements under this axis. The results are presented in the following table:

Table(٦) Descriptive statistics for the " trainee " axis

Question	Mean	Std. Deviation	Level
Clarity of admission and registration procedures	4.12	0.86	Agree
The evaluation is carried out according to a clear plan for all disciplines in the college	3.96	0.87	Agree
The results of the assessment are studied and analyzed to identify strengths and weaknesses	3.44	1.14	Agree
There are extracurricular activities and programs that enhance the training process	3.38	1.11	Medium
The college develops programs to treat struggling trainees	3.33	1.24	Medium
Overall average	**3.64**	**0.82**	**Agree**

Table (6) illustrates the descriptive analysis of the trainee-related axis. The overall mean score was 3.64 with a standard deviation of 0.82, indicating a general agreement among participants on the quality of achievement and services provided to trainees.

The statement "Clarity of admission and registration procedures" ranked first with a mean of 4.12, reflecting strong agreement. This was followed by "The evaluation is carried out according to a clear plan for all disciplines in the college" (mean = 3.96).

The third-ranked item was "The results of the assessment are studied and analyzed to identify strengths and weaknesses through them" with a mean of 3.44, also indicating agreement. However, lower agreement was observed in the statements "There are extracurricular activities and programs that enhance the training process" (mean = 3.38) and "The college develops programs to treat struggling trainees" (mean = 3.33), both of which fell within the medium agreement level. These results highlight areas of strength in clarity and planning, while suggesting opportunities for improvement in support and enrichment activities for trainees.

Axis Four: Quality Measurement Axis for the Alignment of Training Programs with the Labor Market.

The researcher conducted a descriptive analysis by calculating the arithmetic means and standard deviations of the respondents' answers to the statements of the fourth axis. The results are shown in Table (7):

Table7 Descriptive statistics for the " curricula " axis

Question	Mean	Std. Deviation	Level
Each program and course have specific measurable outcomes	3.86	0.97	Agree
The skills and competencies of each program correspond to the requirements of the labor market	3.66	1.04	Agree
Inventory and documentation of observations submitted by trainers, trainees, and recruiters in the development process	3.26	1.17	Medium
Training plans and courses are reviewed at most every three years, and the necessary updates are made	3.23	1.14	Medium
Overall average	**3.50**	**0.92**	**Agree**

Table (7) provides a descriptive analysis of the fourth axis concerning the alignment of training programs with labor market demands. The overall mean score was 3.50, with a standard deviation of 0.92, indicating a general agreement among the respondents on the importance and implementation of alignment practices. The highest-rated statement was "Each program and course have specific measurable outcomes" with a mean of 3.86, reflecting a clear focus on defining outcomes. The second highest was "The skills and competencies of each program correspond to the requirements of the labor market" with a mean of 3.66, suggesting a solid alignment between curriculum content and labor market needs. In contrast, moderate responses were observed in "Inventory and documentation of observations submitted by trainers, trainees, and recruiters in the development of training plans and courses" (mean = 3.26) and "Training plans and courses are reviewed at most every three years and the

necessary updates are made" (mean = 3.23), which indicates room for improvement in stakeholder feedback integration and periodic review processes. These results highlight a generally positive perception of alignment efforts, while also signaling the need to enhance feedback mechanisms and curriculum update cycles to better meet evolving labor market requirements.

Fifth Axis: Quality Measurement Axis for Providing an Appropriate Training Environment that Keeps Pace with Labor Market Developments.

The researcher conducted a descriptive analysis by calculating the arithmetic means and standard deviations of the responses of the sample members to the statements of the fifth axis. The results are presented in the following table.

Table 8 Descriptive statistics for the " Training Environment" axis

Question	Mean	Std. Deviation	Level
The presence of training equipment that meets the requirements of the programs provided	3.89	0.99	Agree
The equipment is updated to keep pace with the requirements of the labor market.	3.44	1.16	Agree
The existence of a periodic maintenance program to maintain the training environment	3.70	1.11	Agree
Occupational safety and health guidelines available	3.81	0.93	Agree
A plan is available to deal with illness, injuries, and emergencies	3.45	1.10	Agree
Overall Average	**3.65**	**0.85**	**Agree**

Table (8) presents the descriptive analysis based on the arithmetic means and standard deviations of the statements within the fifth axis. The overall mean was (3.65) with a standard deviation of (0.85), indicating a general agreement among participants regarding the adequacy of the training environment in meeting labor market demands.

The highest-rated item was "The presence of training equipment that meets the requirements of the programs provided" (mean = 3.89), followed by "Occupational safety and health guidelines available" (mean = 3.81). The statement "The existence of a periodic maintenance program to maintain the training environment" ranked third (mean = 3.70). The remaining items, "A plan is available to deal with illness, injuries, and emergencies" (mean = 3.45) and "The equipment is updated to keep pace with the requirements of the labor market" (mean = 3.44), also received agreement, though with slightly lower averages. These results suggest that while the training environment is generally seen as supportive and aligned with professional standards, there remains room for improvement in terms of modernization and emergency preparedness planning.

Sixth Axis: The Impact of Training Quality on Employment Opportunities

The researcher conducted a descriptive analysis by calculating the arithmetic means and standard deviations of the responses of the sample members to the statements of the sixth axis. The results are presented in the following table:

Table 9 Descriptive statistics for the " Training Quality " axis

Question	Mean	Std. Deviation	Level
The skills trained in the training programs match the skills required in the labor market	3.85	0.96	Agree
There is a gap between the skills trained in training programs and the skills required in technical fields	2.86	1.26	Medium
There is interaction between the college and the labor market to determine the skills required in the labor market	3.33	1.17	Medium
The trainee gets career opportunities in the field of specialization within six months of graduation	3.25	1.19	Medium
The college is ready for the changes of the labor market and new technologies in terms of skills development	2.74	1.21	Medium
The college provides career opportunities for graduates through career forums	3.58	1.04	Agree
There is job coordination to help the trainee get a job after graduation	3.66	1.07	Agree
The availability of large companies and factories has an impact on employment ratios	3.84	1.17	Agree
Overall Average	**3.38**	**0.76**	**Medium**

Table (9) presents the descriptive analysis of the sixth axis, "The Impact of Training Quality on Employment Opportunities." The overall mean for this axis was 3.38, with a standard deviation of 0.76, indicating a general trend toward a

medium level of agreement among the respondents. The highest-rated item was "The skills trained in the training programs match the skills required in the labor market" with a mean of 3.85, followed closely by "The availability of large companies and factories has an impact on employment ratios" (mean = 3.84), reflecting participants' acknowledgment of a strong link between training relevance and job market demands. Additionally, statements such as "There is job coordination to help the trainee get a job after graduation" and "The college provides career opportunities for graduates through career forums" received relatively high mean scores, suggesting positive perceptions of employment support efforts. On the other hand, some items, including "There is interaction between the college and the labor market to determine the skills required" and "The trainee gets career opportunities within six months of graduation," were rated at a medium level, highlighting moderate satisfaction with institutional alignment to labor demands. The lowest-rated items were "There is a gap between the skills trained in programs and those required in technical fields" and "The college is ready for labor market changes and emerging technologies," indicating areas that may require attention and improvement. Overall, the findings suggest that while training quality contributes positively to employment readiness, further strategic efforts are necessary to fully align programs with the evolving job market.

Differences in the Axes of the Study Tool According to the Primary Variables

Differences According to the Academic Qualification Variable:

To examine whether the participants' academic qualifications influenced their perceptions of the quality practices across the study axes, a one-way ANOVA test was conducted. The results are presented in Table (10).

Table (10): ANOVA Results for Differences by Academic Qualification

Variables	Sum of Squares	df	Mean Square	F	Sig.
Management & Leadership	11.785	3	3.928	7.096	0.000
	38.195	69	0.554		
Trainers	7.268	3	2.423	3.850	0.013
	43.412	69	0.629		
Trainees	5.467	3	1.822	2.851	0.044
	44.095	69	0.639		
Curricula	6.600	3	2.200	2.781	0.047
	54.586	69	0.791		
Training Environment	8.293	3	2.764	4.297	0.008
	44.386	69	0.643		
Employment Opportunities	6.801	3	2.267	4.393	0.007
	35.610	69	0.516		

Table (10) shows that there are statistically significant differences at a significant level of (0.05). The statistical significance values for all axes were less than the significance level (0.05), indicating that there is statistical evidence for significant differences according to the academic qualification variable between the opinions of the sample members towards the role of quality practice according to the different academic qualifications.

Differences According to the Years of Experience Variable

To examine whether participants' years of training experience influenced their perceptions of the quality practices across the study axes, a one-way ANOVA test was conducted. The results are presented in Table (11).

Table (11): ANOVA Results for Differences by Years of Training Experience

Variables	Sum of Squares	df	Mean Square	F	Sig.
Management & Leadership	1.256	3	0.419	0.593	0.622
	48.724	69	0.706		
Trainers	1.438	3	0.479	0.672	0.572
	49.242	69	0.714		
Trainees	2.704	3	0.901	1.327	0.273
	46.858	69	0.679		
Curricula	1.431	3	0.477	0.551	0.649
	59.756	69	0.866		
Training Environment	1.327	3	0.442	0.594	0.621
	51.352	69	0.744		
Employment Opportunities	3.493	3	1.164	2.065	0.113
	38.918	69	0.564		

Table (11) shows that there are no statistically significant differences at a significance level of (0.05). The statistical significance values for all axes were greater than the significance level (0.05), indicating that there is no statistical evidence for significant differences according to the training experience variable between the opinions of the sample members towards

the role of quality practice according to the different training experiences.

Study Findings and Recommendations

This section presents the key findings of the study and the most important recommendations proposed by the researcher based on the results of the statistical analyses.

Study Findings

Findings Related to the Demographic Characteristics of the Study Sample:

The study targeted a sample of 73 trainers working at the College of Technology in Makkah. The results showed that 52.1% of the participants hold a master's degree, and 54.8% have more than 15 years of professional experience.

Findings Related to the Objectives of the Study:

First Objective: Determining the criteria for evaluating the quality of training and its alignment with technical and professional standards:

The findings revealed the presence of a clear strategic plan and well-defined roles for employees. This indicates that the evaluation criteria used at the college are aligned with recognized technical and professional standards, thereby achieving the first objective.

Second Objective: Investigating the techniques and methods used in delivering training and evaluating its quality:
The study showed that trainers possess the required skills and expertise and employ motivational training methods. This confirms the effectiveness of the applied techniques and their role in enhancing the quality of training.

Third Objective: Assessing the alignment of training programs with labor market requirements:

The results demonstrated that the training programs are largely compatible with labor market needs, and that the presence of large companies and factories positively influences employment rates. This supports the achievement of the third objective by highlighting the strengths and identifying potential gaps.

Fourth Objective: Proposing strategies for improving the quality of training:

The study emphasizes the importance of having a strategic vision, clearly defined roles, and effective training based on labor market-aligned skills. These elements contribute to a set of practical recommendations aimed at enhancing the overall quality of training and institutional development at Makkah Technical College.

Fifth Objective: Examining differences in quality practices based on academic qualification and training experience:

The findings indicate statistically significant differences in quality practice levels based on academic qualification, whereas no significant differences were observed based on years of experience. This suggests that training quality practices are more influenced by qualification level than by length of service.

Recommendations

In light of the study's findings, the following recommendations are proposed:

1. Conduct periodic reviews of the college's strategic plan, ensuring active participation of trainers, and clearly define responsibilities to effectively achieve training objectives.

2. Implement ongoing evaluations of training program effectiveness with input from all stakeholders and utilize findings to inform regular program improvements.

3. Offer continuous professional development programs for trainers to enhance their expertise and ensure high-quality training delivery.

4. Analyze training evaluation results to identify weaknesses, provide support programs for struggling trainees, and expand extracurricular activities to enrich trainee experiences.

5. Regularly update curricula and training programs to ensure alignment with evolving labor market requirements.

6. Maintain and modernize training equipment and facilities to support a dynamic and responsive training environment.

7. Bridge the skill gap by fostering strong communication between the college and labor market stakeholders to accurately identify current and future skill needs.

8. Develop and strengthen career guidance and job placement programs to facilitate graduates' transition into the labor market.

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