

Characteristics and Quality Indicators of Vocational Training Performance

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ABSTRACT

Vocational training plays a central role in economic and social development, helping individuals to adapt to rapid changes in the job market. This scientific article provides an in-depth review of the literature on the characteristics and indicators of quality in vocational training programs. It identifies several key dimensions, including the relevance of pedagogical content, which must be in line with market requirements, and the competence of trainers, essential for transmitting up-to-date knowledge. The integration of educational technologies that facilitate access to learning and optimize pedagogical processes is vital. In addition, program accessibility and equity are emphasized, ensuring that these training courses are open to all, regardless of socio-economic, geographical or other constraints.

Quality assessment is based on precise indicators, such as the professional integration rate of graduates, which measures the effectiveness of programs in generating job opportunities.

Learner satisfaction is also an important indicator, reflecting the perceived quality of the teaching and learning environment. In addition, the quality of jobs obtained, certification success rates and the level of commitment of participants are crucial criteria for judging a program's performance. The article also underscores the importance of international standards, such as ISO 9001 (quality management), ISO 21001 (management systems for educational organizations) and the EFQM (European Foundation for Quality Management) excellence model, in the continuous improvement of training systems. These standards offer structured frameworks for quality assurance, although their application sometimes presents limitations, particularly in terms of adaptation to local specificities and the changing needs of different sectors.

The challenges faced by these programs include the ability to respond rapidly to changes in the labor market, the management of limited resources, the involvement of stakeholders, and the integration of new technologies. The article proposes solutions such as long-term strategic planning, the involvement of public and private players, and the development of partnerships to share resources and best practices in vocational education and training. In conclusion, the study emphasizes importance of a comprehensive and collaborative approach to ensuring quality vocational training, capable of adapting to constant market changes and making a significant contribution to sustainable economic and social growth. This review demonstrates that continuous improvement in vocational training quality relies on an integrated, collaborative approach that engages all stakeholders to meet the dynamic needs of the labor market.

Keywords— Vocational training, Quality of Training, Performance indicators, Quality assurance, Quality standards

INTRODUCTION

Vocational training is an essential pillar of economic and social development, playing a key role in preparing individuals for the ever-changing demands for the job market. In a world marked by globalization, digital transformation and technological innovation, the skills required by employers are evolving rapidly, making the quality of vocational training more crucial than ever. The characteristics and quality indicators of the performance of this training are therefore at the heart of the concerns of researchers, practitioners, and policymakers.

The objectives of this study are threefold:

1. to identify the essential characteristics and quality indicators in vocational training that contribute to its effectiveness in meeting labor market requirements.
2. to analyze the role of international standards, such as ISO 21001 and the EFQM model, in quality assurance for vocational training programs.
3. to examine the challenges and opportunities related to continuous improvement in training organizations, considering resource needs, stakeholder engagement, and the integration of new technologies in educational processes.

According to the European Centre for the Development of Vocational Training (CEDEFOP) [1], training programs aligned with employer-required skills significantly improve graduate employment rates, underscoring the importance of high-quality vocational training to meet the evolving demands of the labor market. The characteristics of vocational training encompass several key dimensions. The relevance of educational content is fundamental, ensuring that programs reflect current and future labor market needs. The effectiveness of teaching methods is also critical, incorporating innovative pedagogical approaches that promote active learning and learner engagement. The qualifications and expertise of trainers play a major role in imparting knowledge and skills to the trainees.

Accessibility and equity of programs are crucial in ensuring that diverse groups of learners can benefit from training. According to UNESCO [19], inclusive education policies that reduce socio-economic inequalities are essential for promoting equal access to quality education for all, thereby enhancing the overall impact and inclusivity of vocational training programs. The integration of educational technologies is another important feature, with the growing use of e-learning platforms, virtual simulations, and interactive tools that enrich the learning experience. These technologies enable greater flexibility in training and can improve learner engagement and motivation. According to a study by the Organization for Economic Co-operation and Development (OECD) [6], digital learning tools and e-learning platforms provide increased access to education, allowing for more personalized learning experiences, which in turn enhances learner engagement and motivation. Quality performance indicators are used to evaluate and measure the effectiveness of vocational training systems. Quantitative indicators include certification success rates, professional integration rates, career progression of graduates and return on investment for employers. Qualitative indicators include learner satisfaction, employers' perception of the relevance of skills acquired, and the impact on individuals' personal and professional development. According to Richardson [36], learner satisfaction is closely linked to engagement and academic success, making it a critical measure of training effectiveness. Moreover, employer feedback provides valuable insights into the alignment of acquired skills with market needs, further underscoring the importance of qualitative indicators in evaluating vocational training programs.

International standards frameworks, such as ISO 21001 (2018) [48] and the EFQM (European Foundation for Quality) Management excellence model, offer guidelines for the implementation of quality management systems in training organizations. These frameworks encourage a systematic approach to continuous improvement, focusing on stakeholder satisfaction, the efficiency of internal processes, and the strategic alignment of training objectives with business goals. According to Calvo-Mora, Leal, and Roldán [51], the EFQM model emphasizes a structured approach to quality enhancement that supports stakeholder satisfaction and operational alignment, making it especially relevant for vocational training organizations seeking to align their objectives with industry needs.

However, the implementation of these standards and the effective use of quality indicators present Challenges remain as training organizations need to adapt these frameworks to local contexts, considering cultural, economic, and regulatory particularities. According to Pratasavitskaya and Stensaker [53], implementing quality frameworks in education requires flexibility and contextual adaptation to address unique cultural, regulatory, and institutional needs, which is crucial for ensuring their effectiveness across diverse environments.

The complexity of the processes to be put in place, the need for resources for staff training and the need

to develop a quality- focused organizational culture can present significant obstacles.

Furthermore, Today's vocational training landscape is marked by a diversification of learning pathways and a growing demand for cross-disciplinary skills, such as critical thinking, problem-solving, and collaboration. According to the Organization for Economic Co-operation and Development (OECD) [33], modern labor markets increasingly require workers who possess cross-disciplinary skills that enhance adaptability and innovation, which vocational training programs must incorporate to stay relevant. This calls for a more flexible, learner-centered approach that recognizes the importance of lifelong learning and the recognition of prior learning.

This literature review aims to deepen understanding of the characteristics and quality indicators of vocational training performance. Drawing on recent scientific studies and proven practices, it seeks to identify the key factors that contribute to the effectiveness of training schemes. According to Billett [4], effective vocational training programs are shaped by evidence-based practices and continuous assessment, which help identify essential factors that enhance both the quality and relevance of training for labor market needs.

The aim is to provide researchers with insights to improve the quality of vocational training. This study specifically aims to (1) identify the key characteristics and quality indicators that enhance the effectiveness of vocational training programs, (2) analyze the role of international standards in supporting these quality measures, and (3) address the challenges and opportunities in implementing continuous improvement frameworks within vocational training contexts.

QUALITY FEATURES IN VOCATIONAL TRAINING

Quality features in vocational training are essential to ensure that programs effectively meet the needs of learners and employers, contributing to the acquisition of relevant skills and improved employability in the labor market. For example, Germany's dual education system combines in-class instruction with hands-on apprenticeships, which has proven highly effective in aligning training with industry needs (Ryan, 2012). Similarly, Switzerland's vocational programs emphasize collaboration with employers, resulting in high employment rates for graduates (Kuczera, Field, & Hoffman, 2018).

The competence and expertise of trainers are crucial factors in the quality of vocational training. Well-trained and experienced trainers are essential for effective knowledge transmission [7]. They must possess dual skills of, both pedagogical and technical, and their continuous improvement is emphasized to maintain a high level of quality [8] and [1]. The professional development of trainers enables them to adapt to new teaching methods, and globalization demands an understanding of international skills [9] and [10]. On-the-job learning is also beneficial for the trainers themselves, and solid initial training is necessary for vocational trainers [11] and [12].

The integration of educational technologies is playing an increasing role, offering new opportunities to personalize learning [13]. The use of e-learning platforms improves accessibility and flexibility [14], and e-learning can be as effective as traditional learning [14] and [15]. Technologies can enrich pedagogical methods [16], but their integration needs to be thought through to avoid digital inequalities. The TPACK framework helps teachers to integrate technology effectively [17] and [18].

Accessibility and equity are essential components of quality vocational training. Inclusive education aims to ensure that all learners, including those with special needs, have access to quality education, and education policies must reduce socio-economic inequalities [19] and [6].

Inclusion requires pedagogical adaptations to meet diverse needs, and it is necessary to address structural inequalities [20] and [21]. Lifelong learning promotes equity and education systems must be flexible to accommodate learners from different backgrounds [22] and [23].

Program flexibility is essential to meet the diverse needs of learners and the labor market. Education systems need to offer flexible learning pathways to facilitate access and progression [6]. The personalization of learning

enables learners to be better engaged, and modular programs allow progressive accumulation of credits [24] and [25].

Recognition of non-formal and informal learning contributes to flexibility, and the use of technology can support personalized learning paths. Flexibility is also key to lifelong learning [26], [27] and [28].

Finally, collaboration with industry is essential to ensure that vocational training is aligned with the real needs of the labor market. Public-private partnerships can improve the relevance and quality of training, and employer involvement in program development promotes skills matching [29] and [30]. Work-based learning enriches learners' experience [31], and dual apprenticeships combine theory and practice [31] and [32]. Dual apprenticeship systems reinforce this collaboration, and vocational training models that strongly integrate employers are being examined for their effectiveness [33] and [34]. In summary, the characteristics of quality in vocational training are both multiple and interconnected, encompassing the relevance of pedagogical content, the competence of trainers, the integration of educational technologies, accessibility and equity, program flexibility and collaboration with industry. The harmonious integration of these elements is essential to provide effective, relevant vocational training that is perfectly adapted to the specific needs of learners and the requirements of the job market. To achieve this goal, it is crucial to strengthen partnerships with employers to align programs with current and future market needs, thus ensuring the relevance of the skills taught, and to promote ongoing training for trainers to maintain a high level of competence, enabling them to adapt to new teaching methods and technological advances.

STYLING PERFORMANCE QUALITY INDICATORS IN VOCATIONAL TRAINING

Quality indicators are essential for measuring and improving the performance of vocational training schemes. The job insertion rate is considered a key indicator of the effectiveness of a training program; a high graduate employment rate indicates that the training corresponds to the needs of the labor market [1]. For example, CEDEFOP (European Centre for the Development of Vocational Training) has demonstrated that programs aligned with the skills demanded by employers have higher insertion rates [35]. However, this indicator needs to be analyzed in the light of the overall economic context and sectoral specificities, as external factors can influence employment rates [6].

Learner satisfaction is another important qualitative indicator; regular surveys help to identify program strengths and weaknesses, as satisfaction is often linked to perceptions of teaching quality, content relevance and available resources [36]. Richardson [37] points out that learner satisfaction is correlated with engagement and academic success. In addition, high satisfaction can lead to better motivation and higher retention rates [38].

The quality of the jobs obtained, assessed in terms of salary level, job stability and correspondence with the training taken, reflects the added value of the training for learners [39].

According to Brown et al [40], graduates who obtain high-quality jobs are more likely to perceive their training as beneficial and to recommend the program to others.

The pass rate for certifications is a quantitative indicator of academic performance; a high pass rate may indicate good teaching quality, appropriateness of pedagogical content and effectiveness of the assessment methods employed [41]. Yorke [42] notes that it can also reflect the level of preparation of learners and the effectiveness of the pedagogical support offered by the institution.

Learner engagement, measured by participation rate, attendance and personal investment, is also an indicator of the attractiveness and relevance of the training [43]. Interactive, learner-centered teaching methods can increase engagement, as suggested by Fredricks et al [44], who emphasize that engagement is multidimensional, including behavioral, emotional and cognitive aspects.

Finally, feedback from employers on graduates' skills is crucial for aligning training with market needs [45]. Harvey [46] notes that employers can provide valuable information for improving programs, adapting curricula

and identifying emerging skills needed in the relevant occupational sector. This collaboration not only improves the relevance of training, but also strengthens partnerships between educational institutions and the world of work [44].

In conclusion, quality performance indicators in vocational training are essential for evaluating and improving programs, providing quantitative and qualitative information on training effectiveness. To ensure continuous improvement, it is crucial to set up graduate follow-up systems to collect data on their integration into the workforce, to conduct regular satisfaction surveys among learners and employers, and to continuously analyze these indicators to identify trends and areas requiring improvement. This enables us to adapt our programs to the needs of the job market and optimize the quality of our training programs.

THE ROLE OF INTERNATIONAL STANDARDS IN QUALITY ASSURANCE

International standards such as ISO 9001, ISO 21001(2018) and the EFQM (European Foundation for Quality Management) excellence model play a crucial role in quality assurance for vocational training organizations, providing frameworks for effective quality management. ISO 9001, the international standard for quality management systems, is widely used in various sectors to improve customer satisfaction and operational efficiency [47]. However, its direct applicability to the field of education is limited due to its generic nature and lack of specificity for educational processes [46].

To meet the specific needs of educational organizations, ISO 21001 was developed, specifying the requirements for a management system adapted to the education sector [48]. This standard emphasizes a learner-centered approach, aimed at improving stakeholder satisfaction through the effectiveness of educational processes. However, implementing ISO 21001 can present challenges, particularly in terms of the complexity and resources required, which can be an obstacle for smaller institutions [49].

The EFQM excellence model offers a holistic framework for assessing and improving organizational performance, focusing on criteria such as leadership, strategy, people, partnerships and processes [50]. It encourages a culture of excellence and continuous improvement. Nevertheless, its adoption requires deep commitment and a comprehensive understanding of the principles of excellence, which can represent a barrier for some organizations [51].

Despite the advantages of these standards, several limitations need to be considered. The complexity of the processes associated with their implementation can lead to significant administrative burdens and require substantial human and financial resources [52]. Adaptability to local contexts is also a major issue, as these international standards may not fully consider the cultural, regulatory or pedagogical specificities of each country or institution [53]. What's more, an excessive focus on standardization can lead to a bureaucratization of processes, limiting the innovation and flexibility needed to meet the changing needs of learners [54].

In conclusion, although international standards such as ISO 9001, ISO 21001 and the EFQM model provide valuable frameworks for improving the quality of vocational training, their effective implementation requires thoughtful adaptation to the specifics of each organization. Institutions must be aware of the limitations of these standards, and ensure that their application reinforces, rather than constrains, their educational mission. Their effective implementation requires staff awareness and training in these standards, as well as adaptation to the specificities of the organization and the local context. In addition, management commitment is essential to support implementation and ensure continuous quality improvement.

CHALLENGES AND PERSPECTIVES IN QUALITY IMPROVEMENT

Despite ongoing efforts to improve the quality of vocational training, several challenges persist that hamper the effective implementation of initiatives. One of the main challenges is adaptability to rapid changes in the labor market. The skills required by employers are constantly evolving as a result of globalization, technological innovation and economic transformation, making it difficult for training programs to remain relevant. Studies highlight the need for training organizations to adopt an agile approach to continually adapting their educational content to the changing needs of the labor market [6].

Moreover, limited resources are a major obstacle to quality improvement. Budget constraints can limit institutions' ability to invest in modern infrastructure, educational technology and staff training. It is essential to allocate resources efficiently and strategically to maximize the impact on the quality of vocational training [7].

Stakeholder engagement is also crucial, but often difficult to achieve. Effectively involving employers, learners, trainers and policymakers is essential to ensure the relevance and effectiveness of training programs. Establishing robust communication and collaboration mechanisms can facilitate the active participation of all stakeholders [46].

On the other hand, the integration of new technologies into vocational training presents significant challenges. The adoption of educational technologies requires not only appropriate infrastructures, but also technical skills on the part of educational staff. Staff training and professional development are crucial to ensure the successful integration of technologies into teaching practices [16].

In conclusion, the challenges inherent in improving quality in vocational training are undeniably complex, encompassing adaptability to rapid changes in the labor market, limited resources, stakeholder commitment and the integration of new technologies. However, these obstacles can be overcome through strategic planning and the ongoing commitment of training organizations. Developing partnerships to share resources and best practices is essential to optimize the use of available resources and benefit from collective expertise. In addition, investment in staff training is crucial to enhance the skills of trainers and administrative staff, ensuring that knowledge and teaching methods are constantly updated. Finally, the implementation of monitoring systems enables us to anticipate changes in the job market and proactively adapt training programs to emerging needs. By adopting these approaches, vocational training organizations can not only meet today's challenges, but also sustainably improve the quality of their programs to effectively respond to the evolving demands of the job market.

CONCLUSIONS

Vocational training is a pivotal driver of economic and social development, equipping individuals with the skills to meet evolving job market demands. This study has emphasized the core characteristics that enhance training quality: the relevance of pedagogical content, trainer competence, the integration of educational technologies, program accessibility and equity, and close collaboration with industry. Together, these elements form a foundation for effective training programs that are tailored to the needs of learners and market trends. Performance indicators—such as graduate employment rates, learner satisfaction, certification success, and employer feedback—are invaluable for assessing and continuously improving program outcomes.

Addressing challenges, including the adaptability to market shifts, limited resources, and stakeholder engagement, requires robust partnerships among training institutions, employers, and policymakers. Investment in trainer development and innovative pedagogical approaches, coupled with strategic use of educational technologies, are crucial for ensuring relevance and fostering learner engagement. By cultivating a proactive culture of excellence supported by effective monitoring and feedback systems, vocational training institutions can create adaptable, high-quality programs that align closely with labor market needs, thus contributing to sustainable economic growth and social progress.

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