

The Impact of Comprehensive Quality of Students and Develop Skills as the Market Demands on Performance of Students: A Study of the Mediating Role of Management Innovation

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ABSTRACT

This study explores the impact of Comprehensive Quality of Students and Development of Skills as the Market Demands on Student Performance, with a focus on the mediating role of Management Innovation. A quantitative research approach was adopted, and data were collected through questionnaires from 300 samples of students in higher education institutions across major Chinese cities. The collected data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) to test the hypothesized relationships.

The results provide valuable implications for educational institutions and policymakers. For institutions, integrating management innovation into educational strategies can optimize the cultivation of comprehensive quality and market-demanded skills, thereby boosting student performance. For policymakers, promoting management innovation in education systems can enhance the effectiveness of talent development and bridge the gap between education and industry requirements in an increasingly competitive knowledge economy.

1. INTRODUCTION

This study explores the relationships between students' comprehensive quality, acquisition of market-oriented skills, and academic performance, with special attention to the mediating role of management innovation within educational institutions.

Universities act as bridges between academic learning and professional practice. Understanding how comprehensive student development and skill training linked to market needs affect performance can inform strategies to strengthen educational effectiveness and graduate employability. Comprehensive quality includes academic excellence, critical thinking, communication, and adaptability, while market-demanded skills focus on digital literacy, teamwork, problem-solving, and innovation. Management innovation—new administrative methods, teaching techniques, and technology integration—can play a vital mediating role.

Clarifying these relationships offers valuable guidance for optimizing university programs, enhancing student learning, and improving institutional competitiveness, all crucial for continuous advancement in education amid rapid technological and economic change.

1.1 Research Background

Educational technology and pedagogical innovation have transformed student development in higher education globally (Al-Fraihat et al., 2020). The approaches to developing comprehensive quality and market-demanded skills have evolved considerably with these innovations (Rashid & Asghar, 2016). Institutions increasingly recognize the value of combining comprehensive development with market-oriented training to improve learning outcomes and employability.

This study analyzes how management innovation mediates the integration of comprehensive quality development with market-demanded skills training and their collective impact on student performance. By examining implementation barriers (Brunetti et al., 2020), this research aims to provide insights into practical challenges.

Comprehensive quality includes academic achievement, critical thinking, communication skills, and adaptability—all essential in today's job market (Succi & Canovi, 2020). Market-demanded skills encompass employer-sought competencies like digital literacy and problem-solving capabilities (Hora et al., 2020). Management innovation serves as a critical mediating factor enhancing the effectiveness of these development initiatives.

1.2 Statement Problem

Bridgstock (2009) highlighted the importance of comprehensive quality development and skill acquisition for students to improve employability outcomes. Applying innovative pedagogical approaches and effective competency-based education are becoming critical elements for the performance of students, which contributes to economic development and workforce readiness (Tomlinson, 2017). Integrating comprehensive quality development and market-demanded skills allows a change from traditional educational methods into adaptive learning patterns which could significantly boost student performance (Hora et al., 2018). Through innovative educational strategies institutions can implement frameworks for developing student competencies while decreasing skill gaps (Hora et al., 2018; Succi & Canovi, 2020). However, the integration of comprehensive quality development and market-demanded skill training remains underexplored.

1.3 Research Gap

This research aims to address this gap by examining relationships between comprehensive quality development, market-demanded skills, management innovation, and student performance in higher education. By gathering empirical evidence from students, the study will provide insights into practical applications and challenges institutions face when implementing comprehensive quality development (Mason et al., 2009). Developing an integrated educational model based on management innovation could transform how institutions operate, enabling more effective and competitive programs that maintain excellence in an increasingly dynamic job market (Yorke, 2006).

1.4 Research Question

- How to quantify the specific impact of comprehensive quality development and market-demanded skill training on the performance of students across different academic disciplines and educational levels in higher education institutions?
- What is the role of management innovation in connecting comprehensive quality development, market-demanded skills and student performance, especially whether it plays an intermediary role?

1.5 Research Objective

- To quantify the specific impact of comprehensive quality development and market-demanded skill training on the performance of students across different academic disciplines and educational levels in higher education institutions.
- To examine the mediating role of management innovation in the relationship between comprehensive quality development, market-demanded skills, and student performance.

2. LITERATURE REVIEW

2.1 Underpinning Theories

Three primary theories support this research: Resource-Based View, Human Capital Theory, and Innovation Management Theory.

The Resource-Based View suggests that valuable, rare, inimitable, and non-substitutable resources enable sustained competitive advantage and superior institutional performance (Barney, 1991; Peteraf & Barney, 2003). In education, intangible resources like educational culture and teaching capabilities serve as strategic assets, while tangible resources provide only temporary benefits (Grant, 1991). This framework has been extensively used to examine drivers of educational performance outcomes (Teece, 2007).

Human Capital Theory addresses an institution's ability to develop, integrate, and enhance student competencies to meet changing market demands (Becker, 1964). This perspective explains how educational institutions sustain competitive advantages by aligning resources with evolving industry requirements (Schultz, 1961). Studies show that comprehensive quality enhancement, skill adaptability, and competency leadership improve institutional sustainability and effectiveness (Mincer, 1974).

Innovation Management Theory emphasizes the need for educational institutions to proactively identify and implement innovative approaches for long-term sustainability (Tidd & Bessant, 2018; Dodgson et al., 2008). Effective educational innovation management integrates pedagogical considerations into strategic planning, curriculum design, and instruction.

Together, these theories provide valuable insights into the complex mechanisms underlying student performance in today's dynamic educational environment.

2.2 Comprehensive quality of students

Present literature shows comprehensive student quality as multidimensional, encompassing academic achievement, cognitive skills, interpersonal abilities, and personal development (Römgens et al., 2020). Modern educational research emphasizes holistic, competency-based frameworks for measuring and enhancing student quality (Tymon et al., 2023; Pang et al., 2022).

Current studies identify four key dimensions of comprehensive quality: academic proficiency, critical thinking & problem-solving, communication & teamwork, and personal attributes (Römgens et al., 2020; Tymon et al., 2023). Academic proficiency covers knowledge mastery and evidence-based reasoning; critical thinking dimensions assess analytical abilities and innovation in various contexts (van Laar et al., 2020); communication and teamwork skills enable effective collaboration in multicultural environments (Pang et al., 2022); and personal attributes like adaptability and resilience help students manage challenges and pursue continuous improvement (Cheng et al., 2022).

The increased focus on employability has prompted universities to adopt multidimensional frameworks that integrate market-demanded competencies into curricula (Pang et al., 2022; Tymon et al., 2023), ensuring students develop not just academic excellence but also readiness for professional environments and lifelong learning.

2.3 Develop skills as the Market Demands

Present literature identifies market-demanded skill development as crucial for ensuring graduate employability and institutional competitiveness (Wickramasinghe & Perera, 2010). This market-oriented approach helps bridge the gap between academic learning and industry requirements.

Research highlights four key dimensions of market-demanded skills: technical competencies, soft skills, digital literacy, and adaptability capabilities (Succi & Canovi, 2020; Andrews & Higson, 2008; Osmani et al., 2015). Technical competencies encompass job-specific knowledge measured through professional certifications and specialized expertise. Soft skills reflect interpersonal abilities valued by employers, including critical thinking, teamwork, leadership, and problem-solving, developed through experiential learning and collaborative projects (Robles, 2012). Digital literacy covers technology proficiency, data analysis capabilities, and digital communication skills essential for digitized workplaces. Adaptability capabilities measure flexibility and continuous learning orientation needed for navigating changing market conditions.

By implementing industry partnerships, internships, and real-world projects, educational institutions can enhance market responsiveness, potentially improving graduate employment outcomes and strengthening institutional reputation in the competitive education landscape.

2.4 Management Innovation

Present literature defines management innovation as novel management practices, organizational processes, and administrative techniques that enhance organizational effectiveness (Birkinshaw et al., 2008). It serves as a critical driver for organizational adaptation and competitive advantage in dynamic environments.

Research identifies four key dimensions of management innovation: process innovation, structural innovation, strategic innovation, and cultural innovation (Damanpour & Aravind, 2012; Mol & Birkinshaw, 2009; Hamel, 2006). Process innovation enhances operational efficiency through workflow redesign, improved decision-making procedures, and communication systems. Structural innovation focuses on organizational design through new organizational forms, reporting relationships, and authority distribution (Armbruster et al., 2008). Strategic innovation encompasses planning methodologies, resource allocation

approaches, and performance measurement systems that help organizations navigate competitive landscapes. Cultural innovation transforms organizational values, beliefs, and behavioral norms.

By implementing change management programs, leadership development initiatives, employee engagement practices, and knowledge sharing systems, organizations can foster innovative cultures that enhance adaptability and improve performance in rapidly changing environments.

2.5 Performance of students

Present literature describes student performance as combining academic achievement, skill development, and personal growth outcomes (Kuh et al., 2006). Comprehensive assessment frameworks are considered essential for effectively measuring and evaluating student performance.

Research identifies four key dimensions of student performance: academic achievement, skill acquisition, personal development, and career readiness (York et al., 2015; Pascarella & Terenzini, 2005; Astin, 1993). Academic achievement measures learning outcomes through grade point average, course completion rates, and standardized test scores. Skill acquisition assesses competency development in critical thinking, problem-solving, communication, and technical proficiencies through experiential learning and applied knowledge demonstrations (Arum & Roksa, 2011). Personal development tracks self-efficacy, motivation, social integration, and psychological well-being to indicate holistic growth. Career readiness evaluates preparation for professional success and lifelong learning.

By implementing internship programs, career counseling, professional development workshops, and industry engagement initiatives, educational institutions can enhance employment outcomes, potentially improving graduate career prospects and strengthening institutional reputation in competitive higher education markets.

2.6 Conceptual Framework

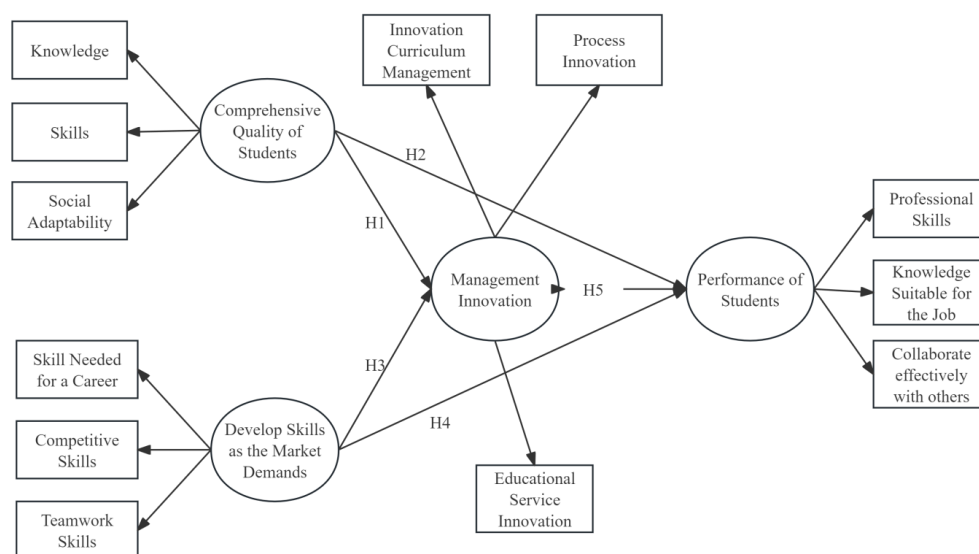


Figure 1: Conceptual Framework

2.7 Hypothesis

H1: The Comprehensive Quality of Students has a significant positive effect on Management Innovation.

H2: The Comprehensive Quality of Students has a significant positive impact on the Performance of Students.

H3: Developing Skills according to Market Demand has a significant positive influence on Management Innovation.

H4: Developing Skills according to Market Demand has a significant positive effect on the Performance of Students.

H5: Management Innovation has a significant positive impact on the Performance of Students.

3.METHODOLOGY

3.1. Research Instrument and Data

In this research, cross-sectional research with quantitative study is employed to investigate the factors influencing performance of students.. This type of observation design describes the general situation at one point in time among targeted population.

3.2. Measures

This field survey captures current educational management practices and student development approaches across Chinese higher education institutions. The data will be analyzed using partial least squares structural equation modeling to examine conceptual framework relationships.

The survey uses validated measures from prior research: The Comprehensive Quality of Students construct employs items from Douglas et al. (2015), assessing academic competence, critical thinking, and holistic development. Develop Skills as the Market Demands incorporates scales from Wickramasinghe and Perera (2010), evaluating alignment between educational programs and industry requirements. Management Innovation combines metrics from Birkinshaw et al. (2008), measuring institutions' capacity for pedagogical innovation, administrative reform, and strategic adaptation. Performance of Students metrics are adapted from Kuh et al. (2006), measuring academic achievement, skill acquisition, and career readiness. The mediating role assessment uses validated approaches from Baron and Kenny (1986) to examine indirect effects.

By using these validated scales aligned with research objectives, the measurement approach ensures reliability and validity in examining relationships between student quality development, market-oriented training, management innovation, and performance outcomes.

4. RESULTS

The results of this research offer valuable insights for educational policymakers and institutions in the region. By demonstrating how comprehensive student quality and market-demanded skills, combined with innovative management practices, can enhance student performance and competitive advantage, the study highlights the importance of systematic quality development programs. Implementing data-driven decision-making in curriculum

design and assessment can help institutions operate more efficiently and better address student needs, potentially encouraging wider adoption of these comprehensive approaches.

Through comprehensive student quality development, this research can help institutions strengthen their preparation practices. Systematic quality assessment enables early identification of learning gaps, allowing for strategic interventions. Comprehensive quality management facilitates real-time monitoring of student progress, adaptation to changing market demands, and improved educational outcomes. Timely feedback mechanisms help educators quickly identify emerging issues, minimizing learning difficulties and providing prompt support.

Limitations and Future Research

Although this study offers valuable insights into how comprehensive student quality and market-demanded skills enhance student performance through management innovation, several limitations warrant consideration.

First, the cross-sectional design limits causal inference. Observed relationships may be influenced by confounding variables or reverse causation. Longitudinal studies would better capture dynamic interactions and developmental trajectories over time.

Second, the study's specific educational context and geographic region may limit generalizability. Replication across diverse educational environments, academic disciplines, and cultural settings would strengthen external validity.

Third, reliance on self-reported student surveys introduces potential common method bias and social desirability effects. Future research should incorporate multiple data sources, including objective performance measures, instructor evaluations, employer assessments, and longitudinal tracking of graduate outcomes.

Despite these limitations, this study provides an important foundation for understanding how comprehensive student quality and market-demanded skills work through management innovation to enhance student performance, offering practical guidance to educational institutions preparing students for an increasingly competitive job market.

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