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RESEARCH ARTICLE

An Analysis of the Affecting Factors of Online Course Learning Outcomes Management for Students in Higher Vocational Colleges in Guangdong Province

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ABSTRACT

In the context of digital educational transformation, enhancing student learning outcomes in higher vocational education has become a critical global research focus. This study investigates the impact of online course management factors on student learning outcomes in Guangdong Province's higher vocational colleges, grounded in total quality management (TQM) and constructivist learning theories. Employing a positivist epistemology and quantitative methodology, data were collected via Likert-scale questionnaires from 458 teachers using simple random sampling. SPSS and AMOS were utilized to analyze the data and test four hypotheses. Results indicate that educational resources, teacher professional development, curriculum management, and continuous quality improvement significantly and positively influence student learning outcomes, supporting all hypotheses (H1-H4). These findings underscore the importance of integrated quality management in sustaining educational excellence in higher vocational institutions.

INTRODUCTION

The significance of vocational education has grown amid societal transformations and the digital era, driven by an unprecedented demand for technically skilled personnel. In China, higher vocational education faces both challenges and opportunities, requiring alignment with evolving social and market needs. The revised Vocational Education Law (2022) emphasizes vocational education's equal importance to general education, highlighting state support and providing a legal foundation for its development. Despite rapid expansion, enhancing intrinsic educational quality remains critical. Teaching quality management, including resource allocation, teacher development, curriculum reform, and quality improvement mechanisms, is pivotal to improving outcomes.

The China Higher Vocational Education Development Report 2022 reveals that investment in practical training equipment reached 200 billion yuan in 2022, reflecting a 10% year-on-year increase. However, resource allocation and utilization remain challenges. Teacher professional development is equally crucial. The Ministry of Education's "Higher Vocational Teachers' Competency Enhancement Program" has trained over 100,000 teachers across 70% of institutions (2022 China Education Statistical Yearbook). Yet, the academic and professional qualifications of faculty, particularly "dual-teacher" educators, require further improvement.

Curriculum management and reform are essential to maintaining relevance. The Research Report on the Construction of Professional Teaching Standard System for Vocational Education (2021) highlights outdated and repetitive curricula, underscoring the need for accelerated reforms. Emphasizing practical, cutting-edge content aligned with industrial demands is vital. Additionally, robust quality improvement mechanisms, including comprehensive monitoring systems and regular assessments, are necessary to sustain teaching quality. Strengthening school-enterprise cooperation to integrate industry practices into curricula can further enhance outcomes.

Research on teaching quality management in higher vocational education, particularly from the perspective of "student learning outcomes," remains limited (Rinne et al., 2023; Rodriguez, Nguyen, & Springer, 2023; Porres & Correa, 2023). This study addresses this gap by exploring how Total Quality Management (TQM) and Constructivist Learning Theory can enhance online course learning outcomes in higher vocational education. By proposing actionable strategies, this research aims to contribute to the sustainable development of vocational education in China, ensuring it meets societal demands for skilled personnel and supports economic growth.

LITERATURE REVIEW

Learning Outcomes

Learning outcomes articulate the knowledge, skills, attitudes, and values students are expected to acquire, serving as a foundational framework for enhancing teaching quality and assessment. Constructivist learning theory emphasizes knowledge construction over acquisition, encouraging active student engagement and deep understanding (Lucy & Wertsch, 1987; Bruner, 2006; Fosnot, 2005). Outcome-Based Education (OBE), introduced by Spady (1994), shifts focus from content delivery to measurable outcomes, aligning educational systems with 21st-century skills like critical thinking, creativity, and digital literacy. Learning outcomes guide curriculum design, teaching methods, and assessments, ensuring educational objectives are met.

Educational Resources

Educational resources, including textbooks, digital tools, and infrastructure, are critical for enhancing teaching and learning. Open Educational Resources (OER), defined by Hilton et al. (2013), provide freely accessible, publicly licensed materials. These resources, alongside physical infrastructure like libraries and laboratories, and human resources such as teachers, directly influence educational outcomes. Teacher effectiveness, supported by adequate funding and professional development, significantly impacts student achievement (Darling-Hammond et al., 2005; Hattie, 2008). Underfunded schools require increased financial support to improve teaching quality and student outcomes (Ladd & Fiske, 2009).

Teacher Professional Development (TPD)

TPD involves ongoing learning to enhance teaching practices and student outcomes. It includes formal courses, workshops, and technology-integrated methods like online courses and webinars (Darling-Hammond & Richardson, 2009; Fishman et al., 2013). Effective TPD is contextually oriented, addressing real-world classroom challenges and improving student performance (Croft et al., 2010; Yoon, 2007). Continuous, intensive professional development focused on student outcomes is essential for sustaining teaching quality (Timperley, 2007).

Curriculum Management

Curriculum management addresses educational purposes, experiences, organization, and evaluation (Tyler, 1949). Dewey (1938) advocated for student-centered, flexible curricula, while Taba (1962) proposed grassroots development involving needs diagnosis and goal setting. Senge's (1990) learning organization principles and Deming's (1987) Plan-Do-Study-Act (PDSA) cycle emphasize continuous improvement. Glatthorn (1994) highlighted strategic planning and stakeholder collaboration, while Grant and Sleeter (2012) stressed multicultural and inclusive curriculum design.

Continuous Quality Improvement (CQI)

CQI is a systematic process aimed at enhancing organizational performance through iterative evaluation and refinement. In education, CQI improves teaching practices, learning outcomes, and administrative processes. The PDCA (Plan-Do-Check-Act) cycle is central to CQI, ensuring ongoing

progress (Sallis, 2014; Sherr et al., 1991). TQM principles applied to education advocate for continuous improvement in teaching methods, curricula, and administrative processes, fostering a culture of data-driven decision-making and sustained educational quality.

This review underscores the interconnectedness of learning outcomes, educational resources, TPD, curriculum management, and CQI in advancing higher vocational education. Addressing these areas is essential for meeting 21st-century demands and ensuring the high-quality development of vocational education systems.

Theoretical Review

Total Quality Management (TQM)

Total Quality Management (TQM) emerged in the mid-20th century as an evolution of quality management practices, shifting from statistical quality control to a more comprehensive, participatory, and process-oriented approach (Madu, 2012). TQM emphasizes the principles of prevention, continuous improvement, and customer satisfaction, ensuring the quality of products or services through full participation and systematic processes (Feigenbaum, 1999). In the context of education, TQM can be applied to the development and management of educational resources, emphasizing the involvement of all stakeholders, including students, teachers, administrators, and external partners. This approach ensures that educational resources are diverse, relevant, and aligned with the needs of learners and society. By adopting TQM principles, educational institutions can continuously optimize the structure, content, and delivery of resources, thereby enhancing the quality of teaching and learning experiences.

TQM also provides a structured framework for continuous quality improvement in education. By setting clear quality standards, collecting and analyzing data, and implementing iterative improvements, institutions can systematically enhance teaching practices, learning experiences, and student outcomes. This is particularly relevant in the context of online learning, where the dynamic nature of digital education requires ongoing adaptation and refinement. Studies have highlighted the applicability of TQM in higher education, though existing research often focuses narrowly on teaching and learning while neglecting broader factors such as industry involvement and resource allocation (Nasim et al., 2020). Yusuf (2023) further emphasizes the importance of TQM as a structured framework for quality management in higher education, underscoring its potential to address multifaceted challenges in educational development.

Constructivist Learning Theory

Constructivism, rooted in the works of Piaget and Bruner, represents a significant shift from cognitivism by emphasizing the active role of learners in constructing knowledge through interaction with their environment (Bringuier & Piaget, 1980). Constructivist theory posits that learning is a process of meaning-making, facilitated by social interaction and contextualized experiences. This perspective redefines the role of teachers from mere knowledge transmitters to facilitators and guides who support students in constructing their own understanding.

In the context of teacher professional development, constructivism underscores the importance of continuous learning, reflection, and the reconstruction of teaching practices. Teachers must engage in authentic, context-rich professional learning to effectively adapt their methods to the needs of diverse learners (Putnam & Borko, 2000). This approach is particularly relevant in online learning environments, where teachers must create supportive and interactive spaces that encourage student autonomy and creativity. By fostering a constructivist approach, teachers can enhance their competence in online teaching, ultimately improving student learning outcomes.

Constructivist principles also play a critical role in curriculum management. Teachers can design courses that encourage active knowledge construction through problem-based learning (PBL) and inquiry-based learning (IBL) (Cobb, Yackel, & Wood, 1992). In online settings, constructivist strategies enable students to engage with content in personalized and meaningful ways, promoting deeper understanding and application of knowledge. Cohen and Ball (1999) further highlight the positive impact of constructivist-oriented professional development programs on both teaching practices and student outcomes, reinforcing the theory's relevance in contemporary education.

Synthesis of TQM and Constructivism in Education

The integration of TQM and constructivist learning theory offers a robust framework for addressing the challenges of modern education, particularly in the context of online learning. TQM provides a systematic approach to quality management, ensuring that educational resources and processes are continuously improved to meet the needs of stakeholders. Constructivism, on the other hand, emphasizes the active role of learners and the importance of contextualized, interactive learning experiences. Together, these theories support the development of effective teaching practices, the optimization of educational resources, and the enhancement of student learning outcomes.

By applying TQM principles to the development and management of educational resources, institutions can ensure that resources are comprehensive, relevant, and aligned with the needs of diverse learners. Simultaneously, constructivist approaches to teacher professional development and curriculum management can foster innovative and student-centered learning environments. This dual focus on quality management and learner-centered pedagogy is essential for meeting the evolving demands of 21st-century education and achieving sustainable improvements in educational outcomes.

Conceptual Framework

Figure 1 shows how the two independent variables are associated with teacher

Competency and teacher performance.

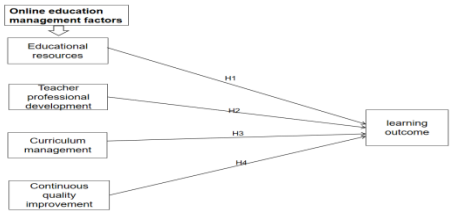

Figure 1: the conceptual framework (Source: by researcher)

RESEARCH METHODOLOGY

Research Design

This study employs a quantitative research design to investigate the relationships between educational resources, teacher professional development, curriculum management, continuous quality improvement, and learning outcomes. A structured questionnaire was developed to collect data, utilizing a five-point Likert scale ranging from "strongly disagree" to "strongly agree." The questionnaire was designed to assess the perceived impact of the aforementioned variables on learning outcomes, with a focus on teacher competencies. The study adopts a positivist research philosophy, emphasizing empirical observation and measurement to ensure objective and targeted results (Bell & Bryman, 2022). This approach aligns with the quantitative strategy for data collection and analysis, providing a robust foundation for testing the research hypotheses.

Hypotheses

The study tests the following hypotheses:

H1: There is a significant relationship between educational resources and learning outcomes.

H2: There is a significant relationship between teacher professional development and learning outcomes.

H3: There is a significant relationship between curriculum management and learning outcomes.

H4: There is a significant relationship between continuous quality improvement and learning outcomes.

Population and Sampling

The target population for this study comprises full-time teachers from higher vocational colleges in Guangdong Province, China. A simple random sampling technique was used to select participants from five "double-high" higher vocational colleges located in the economically developed Pearl River Delta region. The sample included 485 full-time teachers with varying levels of teaching experience. This sampling method ensured representativeness and minimized selection bias.

Data Collection

The questionnaire was distributed randomly to the selected teachers, who were asked to provide their responses based on their perceptions and experiences. The questionnaire items were designed to capture the influence of educational resources, teacher professional development, curriculum management, and continuous quality improvement on learning outcomes. Data collection was conducted in a controlled manner to ensure reliability and validity.

Data Analysis

The collected data were analyzed using AMOS (Analysis of Moment Structures) software, which is suitable for structural equation modeling (SEM) and path analysis. SEM was employed to test the hypothesized relationships between the variables. Descriptive statistics, correlation analysis, and regression analysis were also conducted to provide a comprehensive understanding of the data. The use of quantitative methods allowed for precise comparisons and the drawing of conclusions regarding the impact of the independent variables on learning outcomes.

Ethical Considerations

Ethical approval was obtained from the relevant institutional review board prior to data collection. Participants were informed about the purpose of the study, and their consent was obtained voluntarily. Confidentiality and anonymity were maintained throughout the research process.

DISCUSSION

Normality Test

In this study, all variables exhibited skewness and kurtosis values within the acceptable range of -1 to +1, confirming that the data followed a univariate normal distribution. Consequently, no significant deviations from normality were detected, allowing for the application of parametric statistical techniques in subsequent analyses.

Multi-collinear Test

This is important because it is necessary to exclude items that are highly correlated with each other to avoid ambiguity. Multi collinearity occurs when variables are highly correlated with each other. This may be an indicator that the variables measure the same thing (Klein, 2005). High multi collinearity affects the estimation error of SMEs (Jagpal, 1982; Grapentine, 2000). There are several methods of detecting multi collinearity such as correlation matrix and variance inflation factor (VIF) (Kaplan, 1994). In addition, the multi collinearity of the structure was verified by calculating the tolerance value and variance inflation factor (VIF) of the structure. According to Taba chnick (1996), when the value of VIF is greater than 10, it indicates that the model has a multi collinearity problem. In addition, Mansfield and Helms (1982) suggested that the tolerance of covariance statistics is another indicator of multi collinearity problem and it should be greater than 0.1 to get rid of multi collinearity problem. SPSS software was used to diagnose the covariance and calculate the tolerance value and variance inflation factor (VIF). The results are shown in the table below. All the VIF values are less than 1.8 and significantly lower than the threshold value, and the tolerance is significantly higher than the threshold value of 0.1.

Table 1. The Results of Multi collinearity Analys

Construct	Collinearity Statistics	
	Tolerance	VIF
ER	0.694	1.442
TPD	0.663	1.507
CM	0.675	1.481
CQI	0.673	1.486

The Kaiser Meyer Olkin (KMO) and Bartlett's Test

Table 2. KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**.945**
Bartlett's Test of Sphericity	Approx. Chi-Square	11807.113
	df	780
	Sig.	.000

We can get KMO=0.945, which is greater than 0.7, and Bartlett's spherical test value is significant (Sig.<0.001), indicating that the questionnaire data meets the prerequisite requirements of factor analysis.

Reliability analysis

Reliability Analysis uses Cronbach's Alpha reliability coefficient to check the degree of consistency of the questionnaire study variables on each measurement item. It is generally believed that Cronbach's Alpha coefficient must be greater than 0.7 for variables to have good reliability.

Table 3. Reliability analysis

Variable	Cronbach's Alpha	N of Items
ER	0.893	5
TPD	0.852	6
CM	0.874	5
CQI	0.868	6
LO	0.918	6

From the above table, it can be seen that the Cronbach's alpha coefficients of each variable are greater than the criterion of 0.7, indicating that the variables have good internal consistency reliability.

Structural Equation Modelling (SEM)

Seven fit metrics were used, and the fit metrics included CMIN/DF, RMR, GFI, CFI, RMSEA, CR, and ave. based on these metrics, some of the items were excluded and the model was re-evaluated using residual motion. The process was repeated until at least four of these metrics reached acceptable values. The development of the measurement model for each factor is discussed as follows: the measurement model's completeness of fit was measured as a chi-square/df < 3, GFI > 0.9, AGFI > 0.9, NFI > 0.9, TLI > 0.9, and RMSEA < 0.08 values (Hair et al., 2010). If 3-4 of the above goodness-of-fit indicators are within the specified thresholds, the structural model can be fitted and further analyzed to test the constructed hypotheses. The overall structural model is shown in Figure 2.

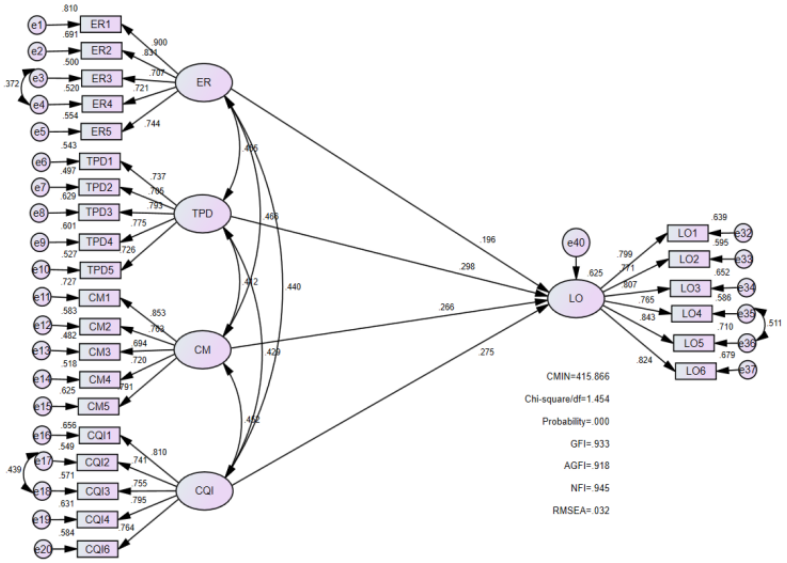

Figure 2. Overall Structural Model

Hypotheses Testing

This study proposed four hypotheses based on previous studies, and all four are are hypothesized direct relationships. The hypotheses were tested based on the CR and p-values of the standardized regression estimates.

The regression weights and standardized regression weights (β) of the final structural model are shown in Table 4. After modeling the structural equations, the estimated value of detection paths, standardized path coefficients, standardized error s.e., t-value, and significance p-value are obtained from model fitting calculations by the software. Generally, if the t-value is greater than 1.96, the p-value is less than 0.05, the path coefficient can be considered to be able to pass the significance test within the 95% confidence interval, indicating that the corresponding path hypothesis of the preset model is valid. Otherwise, the assumption is invalid.

Table 4. Hypotheses Results of Direct Relationships Structural equation path test results

Hypothesis	Path			β	Estimate	S.E.	C.R.	P	Result
H1	LO	<---	ER	0.122	0.112	0.039	2.897	0.004	Supported
H2	LO	<---	TPD	0.127	0.132	0.05	2.658	0.008	Supported
H3	LO	<---	CM	0.13	0.119	0.041	2.872	0.004	Supported
H4	LO	<---	CQI	0.133	0.143	0.05	2.864	0.004	Supported

DISCUSSION

This study investigated the influence of school management factors—educational resources, teacher professional development, curriculum management, and continuous quality improvement—on students' online course learning outcomes in higher vocational colleges in Guangdong Province, China. The findings revealed that all four factors significantly and positively impact students' learning outcomes, aligning with existing empirical evidence and theoretical frameworks.

Educational Resources

Educational resources play a critical role in enhancing learning outcomes. Effective teaching practices are not solely dependent on teaching methods but are also significantly influenced by the availability and quality of educational resources. These resources, including teacher expertise, teaching materials, technical tools, facilities, and financial support, create a conducive learning environment that fosters student engagement and academic success (Francis & Oluwatoyin, 2019). The diversity of resources, such as textbooks, digital tools, and practical activities, caters to varied student needs, stimulates interest, and promotes holistic development. The statistical results of this study ($\beta = 0.122$, $p < 0.05$) confirm a significant positive correlation between educational resources and learning outcomes, suggesting that a unit increase in educational resources corresponds to a 0.122 increase in learning outcomes. This underscores the importance of investing in and optimizing educational resources to improve student performance.

Teacher Professional Development

Teacher professional development emerged as another critical factor influencing learning outcomes. Continuous training and learning enable teachers to adopt innovative teaching strategies, better understand student needs, and design more effective instructional plans (Dorgu, 2015). The professional competence of teachers, often reflected in their qualifications and ongoing development, directly impacts teaching quality and student achievement (Dahri et al., 2021). The study's findings ($\beta = 0.127$, $p < 0.05$) indicate that a unit increase in teacher professional development leads to a 0.127 improvement in learning outcomes. This highlights the necessity of fostering teacher development programs that are content-centered, collaborative, and aligned with the evolving demands of digital and diverse educational environments.

Curriculum Management

Curriculum management ensures the alignment of teaching content, strategies, and assessment methods with learning objectives, thereby promoting deeper understanding and academic success (Ayeni & Akinfolari, 2014). Effective curriculum management involves continuous evaluation and adaptation based on student feedback and learning outcomes, ensuring coherence and relevance in educational delivery (Glasman et al., 2002). The study's results ($\beta = 0.13$, $p < 0.05$) demonstrate a

significant positive relationship between curriculum management and learning outcomes, with a unit increase in curriculum management quality corresponding to a 0.13 increase in learning outcomes. This emphasizes the importance of systematic curriculum design, implementation, and evaluation in enhancing educational effectiveness.

Continuous Quality Improvement (CQI)

Continuous quality improvement is a dynamic, iterative process that fosters the enhancement of teaching practices and learning outcomes. By systematically evaluating and refining educational processes, CQI not only benefits current students but also creates a better learning environment for future cohorts (Benders et al., 2019). The study's findings ($\beta = 0.133$, $p < 0.05$) reveal that a unit increase in CQI efforts leads to a 0.133 improvement in learning outcomes, reinforcing the value of ongoing reflection, feedback, and adaptation in educational settings. This aligns with previous research emphasizing the role of evaluation and feedback in adjusting teaching strategies and improving educational quality (Clark, 1993).

Implications and Recommendations

The findings of this study have significant implications for policymakers and educators in higher vocational colleges. First, investments in educational resources, including infrastructure, digital tools, and teaching materials, should be prioritized to create an enriched learning environment. Second, teacher professional development programs should be expanded and tailored to address contemporary educational challenges, such as digital literacy and inclusive teaching practices. Third, curriculum management systems should be strengthened to ensure alignment with learning objectives and adaptability to student needs. Finally, institutions should institutionalize continuous quality improvement processes to foster a culture of reflection, evaluation, and innovation.

CONCLUSION

This study aimed to investigate the impact of key management factors—educational resources, teacher professional development, curriculum management, and continuous quality improvement—on student learning outcomes in the context of online course management in higher vocational colleges in China. The empirical findings demonstrate that all four factors significantly and positively influence students' learning outcomes, as evidenced by the linear F-values and p-values ($p = 0.000$) for the measured relationships. These results validate the research objectives and questions, highlighting the critical role of effective management practices in enhancing educational quality and student performance.

The study contributes to the existing literature by providing empirical evidence on the relationship between Total Quality Management (TQM) practices and student learning outcomes, particularly in the context of Chinese vocational colleges. It addresses a significant gap in the literature, as no prior empirical research has explored the determinants of TQM and their impact on learning outcomes in this specific educational setting. By proposing a model that integrates educational resources, teacher professional development, curriculum management, and continuous quality improvement, this study offers valuable insights for the academic community, university administrators, policymakers, and educational practitioners.

The findings underscore the importance of investing in educational resources to create a conducive learning environment, fostering teacher professional development to enhance teaching quality, implementing effective curriculum management to align teaching strategies with learning objectives, and adopting continuous quality improvement processes to ensure ongoing evaluation and refinement of educational practices. These measures collectively contribute to improved student learning outcomes and overall educational effectiveness.

For future research, it is recommended to explore the long-term effects of these management factors on student success and to investigate their applicability in diverse educational contexts. Additionally, further studies could examine the interplay between these factors and their cumulative impact on learning outcomes. By addressing these areas, researchers can build on the findings of this study to develop more comprehensive strategies for enhancing educational quality and student achievement.

In conclusion, this study provides a robust empirical foundation for understanding the impact of management factors on student learning outcomes in Chinese vocational colleges. It offers practical

implications for educators and policymakers, emphasizing the need for a holistic approach to educational management that integrates resources, professional development, curriculum design, and continuous improvement to foster academic excellence.

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REFERENCES

Ayeni, A. J., & Akinfolari, C. A. (2014). Assessing Principalsâ€™ Coordinating and Controlling Strategies for Effective Teaching and Quality Learning Outcome in Secondary Schools in Ondo State, Nigeria. International Journal of Learning, Teaching and Educational Research, 7(1).

Bell, E., Harley, B., & Bryman, A. (2022). Business research methods. Oxford university press.

Benders, J., Bal, M., & Vermeerbergen, L. (2019). Structure please; continuous improvement and employee consequences in a dynamic task environment. Sustainability, 11(20), 5564.

Bringuier, J. C., & Piaget, J. (1980). Conversations with jean piaget. University of Chicago Press.

Bruner, J. S. (2006). In search of pedagogy volume I: The selected works of Jerome Bruner, 1957-1978. Routledge.

Clark, D. (1993). Teacher Evaluation: A Review of the Literature with Implications for Educators.

Clithero, A., Ross, S. J., Middleton, L., Reeve, C., & Neusy, A. J. (2017). Improving community health using an outcome-oriented CQI approach to community-engaged health professions education. Frontiers in public health, 5, 26.

Cobb, P., Yackel, E., & Wood, T. (1992). A constructivist alternative to the representational view of mind in mathematics education. Journal for Research in Mathematics education, 23(1), 2-33.

Cohen, D. K., & Ball, D. L. (1999). Instruction, capacity, and improvement.

Croft, A., Coggshall, J. G., Dolan, M., Powers, E., & Killion, J. (2010). Job-embedded professional development: What it is, who is responsible, and how to get it done well (Issue Brief). National Staff Development Council.

Dahri, N. A., Vighio, M. S., Bather, J. D., & Arain, A. A. (2021). Factors influencing the acceptance of mobile collaborative learning for the continuous professional development of teachers. Sustainability, 13(23), 13222.

Darling-Hammond, L., & Richardson, N. (2009). Research review/teacher learning: What matters. Educational leadership, 66(5), 46-53.

Darling-Hammond, L., Holtzman, D. J., Gatlin, S. J., & Heilig, J. V. (2005). Does teacher preparation matter? Evidence about teacher certification, Teach for America, and teacher effectiveness. Education Policy Analysis Archives/Archivos Analíticos de Políticas Educativas, 13, 1-48.

Deming, W. E. (1987). Improving the ouality of Education: W. Edwards Deming and Effective Schools. Contemporary Education Review, 2(3), 423-433.

Dewey, J. (1938). The determination of ultimate values or aims through antecedent or a priori speculation or through pragmatic or empirical inquiry. Teachers College Record, 39(10), 471-485.

Dorgu, T. E. (2015). Different teaching methods: A panacea for effective curriculum implementation in the classroom. International journal of secondary education, 3(6), 77-87.

Feigenbaum, A. V. (1999). The new quality for the twenty-first century. The TQM magazine, 11(6), 376-383.

Fishman, B. J., Penuel, W. R., Allen, A. R., Cheng, B. H., & Sabelli, N. O. R. A. (2013). Design-based implementation research: An emerging model for transforming the relationship of research and practice. Teachers College Record, 115(14), 136-156.

Fosnot, C. T. (2005). Constructivism revisited: Implications and reflections. The constructivist, 16(1), 1-17.

Francis, O. B., & Oluwatoyin, F. C. (2019). Principals' Personnel Characteristic Skills: A Predictor of Teachers' Classroom Management in Ekiti State Secondary School. International Journal of Educational Leadership and Management, 7(1), 72-103.

Garson, G. D. (2012). Testing statistical assumptions. 2012 edition

Glasman, N., Cibulka, J., & Ashby, D. (2002). Program self-evaluation for continuous improvement. Educational Administration Quarterly, 38(2), 257-288.

Glatthorn, A. A. (1994). Constructivism: Implications for curriculum. International Journal of Educational Reform, 3(4), 449-455.

Grant, C. A., & Sleeter, C. E. (2012). Doing multicultural education for achievement and equity. Routledge.

Grapentine T (2000). Path analysis and Structural Equation Modeling. Marketing Research 12: 12-20.

Grech, V., & Calleja, N. (2018). WASP (Write a Scientific Paper): Multivariate analysis. Early Human Development, 123, 42-45.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E. & Tatham, R.L. (2006). Multivariate Data Analysis, 6th Edition, New Jersey: Pearson Prentice Hall, Upper Saddle River.

Hair, J.F., Hult, G.T.M., Ringle, C.M., Sarstedt, M. and Thiele, K.O. (2017b),"Mirror, Mirror on the wall: a comparative evaluation of composite-based structural equation modeling methods", Journal of the Academy of Marketing Science, Vol. 45 No. 5, pp. 616-632.

Hattie, J. (2008). Visible learning: A synthesis of over 800 meta-analyses relating to achievement. routledge.

Hilton III, J. L., Gaudet, D., Clark, P., Robinson, J., & Wiley, D. (2013). The adoption of open educational resources by one community college math department. International Review of research in open and distributed learning, 14(4), 37-50.

Jagpal HS (1982). Multicollinearity in structural equation models with unobservable variables. J. Mark. Res. 19:199-218.

Kaiser, H. F. (1974). An index of factorial simplicity. psychometrika, 39(1), 31-36.

Kaplan, S. N. (1994). Top executive rewards and firm performance: A comparison of Japan and the United States. Journal of political Economy, 102(3), 510-546.

Killion, J. (2012). Coaching in the K-12 context. The SAGE handbook of mentoring and coaching in education, 273-295.

Kline, T. J. (2005). Psychological testing: A practical approach to design and evaluation. Sage publications.

Ladd, H. F., & Fiske, E. B. (2009). The Dutch Experience with Weighted Student Funding: Some Lessons for the US Working Papers Series. SAN09-03. Sanford School of Public Policy.

Lucy, J. A., & Wertsch, J. V. (1987). Vygotsky and Whorf: A comparative analysis. Social and functional approaches to language and thought, 67-86.

Madu, C. N. (Ed.). (2012). Handbook of total quality management. Springer Science & Business Media.

Mansfield, E. R. & Helms, B. P. (1982). Detecting multicollinearity. The American Statistician, 36(3a), 158-160.

Mayer, E. A. (2011). Gut feelings: the emerging biology of gut–brain communication. Nature reviews neuroscience, 12(8), 453-466.

Nasim, K., Sikander, A., & Tian, X. (2020). Twenty years of research on total quality management in Higher Education: A systematic literature review. Higher Education Quarterly, 74(1), 75-97.

Porres, G. T., & Correa, W. I. (2023). Developing Emancipatory Online Learning Environments in Quality Teacher Education. Quality in Teaching and Teacher Education: International Perspectives from a Changing World, 2, 147.

Putnam, R. T., & Borko, H. (2000). What do new views of knowledge and thinking have to say about research on teacher learning?. Educational researcher, 29(1), 4-15.

Rinne, I., Lundqvist, U., Johannsen, B. F., & Yildirim, A. (2023). "When you get out there, you don't have a toolbox". A comparative study of student teacher's identity development in Swedish and Danish teacher education. Teaching and Teacher Education, 122, 103958.

Rodriguez, L. A., Nguyen, T. D., & Springer, M. G. (2023). Revisiting Teaching Quality Gaps: Urbanicity and Disparities in Access to High-Quality Teachers Across Tennessee. Urban Education, 00420859231153409.

Sabrina, E., Giatman, M., & Ernawati, E. (2022). Development of curriculum management in the world of education. Fair Value: Jurnal Ilmiah Akuntansi dan Keuangan, 4(10), 4691-4696.

Sallis, E. (2014). Total quality management in education. Routledge.
Sarstedt, M., & Mooi, E. (2019). A concise guide to market research. The Process, Data, and Methods using IBM SPSS Statistics. 3rd edition. Springer.
Senge, P. (1990). Peter Senge and the learning organization. Dimension, 14.
Sherr, L. A., & Teeter, D. J. (1991). New Directions for Institutional Research No. 71.
Spady, W. G. (1994). Outcome-Based Education: Critical Issues and Answers. American Association of School Administrators, 1801 North Moore Street, Arlington, VA 22209 (Stock No. 21-00488; $18.95 plus postage)
Tabachnick, W. J. (1996). Culicoides variipennis and bluetongue virus epidemiology in the United States. Annual Review of Entomology 41, 23–43.
Tyler, D. B., & Bard, P. (1949). Motion sickness. Physiological reviews, 29(4), 311-369.
Tyler, R. W. (1949). Trends in professional education. The American Journal of Nursing, 50-56.
Yoon, K. S., Duncan, T., Lee, S. W. Y., Scarloss, B., & Shapley, K. L. (2007). Reviewing the evidence on how teacher professional development affects student achievement. issues & answers. rel 2007-no. 033. Regional Educational Laboratory Southwest (NJ1).
Yusuf, F. A. (2023). Total quality management (TQM) and quality of higher education: A meta-analysis study. International Journal of Instruction, 16(2), 161-178.