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**Exploring the Intersection of Constructivism and  
Organisational Learning in Quality Management for  
Innovative Teaching in KwaZulu-Natal High Schools**

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**Akpan, Udoh James, Ph.D**

*Post-Doctoral Fellow, Department of Criminology and Forensic Study,  
College of Humanities, Howard Campus, Durban, KZN, South Africa*

**Akinmolayan, Emmanuel Seun, Ph.D.**

*Bachelor of Education Programme Leader  
MANCOSA*

**Adeyiga, Abisoye Adedoyin, Ph.D.**

*University of Wuerzburg, Faculty of Human Sciences,  
Institute for special education and behavioral disorders,  
Wittelbacherplatz 1, 97074, Wuerzburg  
[kathrina.walther@icloud.com](mailto:kathrina.walther@icloud.com)*

**Vartikka Indermun**

*Academic Programme Review Manager  
MANCOSA*



**Mkhize, Sazelo Michael, Ph.D**

*Senior Lecturer, Department of Criminology and Forensic Study,  
College of Humanities, Howard Campus, Durban, KZN, South Africa*

## **Abstract**

The discourse around 21st century teaching seems to be more emphasised at tertiary institutions than high schools. Most of the teachers and SMTs were trained with curriculums that are obsolete for the 21st century. Meanwhile, the learners are Generation Z (Gen Z), and many teachers and SMT need to design teaching strategies that are peculiar to the 21st century needs. Therefore, the aim of this research is to explore how combining constructivism and organisational learning in quality management systems (QMS) can improve technology-driven teaching methods in high schools in KwaZulu-Natal, enabling students to meet the demands of the 21st century. The key argument of this paper is that integrating constructivism and organisational learning into schools' QMS framework enables ongoing adjustments to align educational outcomes with evolving global needs. The paper utilises a qualitative, desktop research approach to examine secondary data through a literature review, employing purposive sampling with key terms such as innovation pedagogy, QMS frameworks, high schools, 21st-century learning, and KwaZulu-Natal. Multiple theoretical perspectives, including constructivism, organisational learning, complexity theory, change management, and diffusion of innovations, frame the research, offering insight into how QMS can drive the development of adaptable, innovative teaching strategies. The findings underscore the significance of continuous improvement, collaborative learning communities, and the strategic use of technology to establish dynamic and inclusive educational environments that prepare students for future challenges and global demands. The research argues that the nexus of constructivism and organisational learning and QMS leads to technology-driven pedagogies, inclusive and innovative approaches into existing school systems, and finally provides practical recommendations for improving QMS to support effective teaching methods that maximise all students' potentials and success rates.

**Keywords:** *Constructivism, Organisational Learning, Quality Management, Innovative Teaching, KwaZulu-Natal.*

## **Introduction**

Interrogating education generally and in high school in the 21<sup>st</sup> century will mean adopting technology and a teaching and learning curriculum that will give students skills that will be useful to them in not just getting a job but also creating some for themselves (Jerald, 2009; Banerjee, 2024). In the age of digital literacy, which is the basic skill or ability to use a computer confidently, safely, and effectively, there is so much information readily available; therefore, there is a need to make sense and

meaning from information and use it in smart ways. Also, the 21<sup>st</sup> century has seen global bodies regulating phenomena and innovations to standardise them.

To achieve this standardisation, processes like the Quality Management Systems (QMS) have been put in place for adherence. The QMS is defined as a formalised system that documents processes, procedures, and responsibilities for achieving quality policies and objectives. QMS helps coordinate and direct an organisation's activities to meet customer and regulatory requirements and improve its effectiveness and efficiency on a continuous basis. The International Organisation for standardisation (ISO) regulates the international standard specifying requirements for quality management systems, which is the most prominent approach to quality management systems. While some use the term "QMS" to describe the ISO 9001 standard or the group of documents detailing the QMS, it actually refers to the entirety of the system. The documents only serve to describe the system, including in high schools (Othman, Mokhtar, and Asaad, 2017; ArribasDíaz, and Martínez-Mediano, 2018).

In the context of modern and 21<sup>st</sup> century education, particularly within KwaZulu-Natal (KZN) high schools, there is a growing need to adopt innovative teaching practices that can adequately prepare students for the challenges of the 21st century. Two theories that have proven effective in fostering such innovation are constructivism and organisational learning. When integrated within quality management (QM) frameworks, these theories offer a robust approach to improving educational outcomes. This article explores the role of Constructivism in fostering innovation, the relevance of Organisational Learning to QM in educational settings, case studies that demonstrate the synergy between these approaches, and the challenges and opportunities of implementing them in KZN high schools.

With innovation alongside high-quality teaching, South Africa's high schools will be at a turning point and provide students who can compete with the demands of the 21st century and in the global market. To provide students with the knowledge and flexibility needed for the 21st century, creative approaches to teaching and learning are required. Nonetheless, there is a continuous discussion on the efficacy of conventional teaching methods (Hargreaves and Shirley, 2012). According to Singh, Smith, and Doe (2019), there is evidence from recent studies that suggests the use of innovative pedagogies like

gamification and project-based learning can improve student engagement and learning results. However, many school bodies are advocating for the integration of innovative and technology-driven education into high school teaching and learning (TnL) spaces without careful consideration on implementing quality management system (QMS) in the school (Fullan, 2007). Therefore, this study aims to examine how QMS in high schools in KwaZulu-Natal impacts the teaching and learning (TnL) process. A poor-quality management system would contribute to the limited or poor use of any available technology and/or educational resources, creating deficiencies in teacher preparation and TnL deliveries (DoE, 2023).

### **Research Problem**

There are various challenges facing South African schools. Amongst these challenges are dilapidated and/or overcrowded classrooms, poor school facilities, digital divides, poverty, disciplines, shortage of teachers, and many more. Another challenge is the issue of most teachers and even the school management team (SMT) maintaining old-fashioned pedagogy skills that are not tuned to the needs of the 21<sup>st</sup> century era. Due to the interception with technology and digital revolution that characterises the discourse of teaching and learning in this 21<sup>st</sup> century, teachers and SMTs that were trained in the 80s and 90s might have undergone teacher education that is either untuned or less informed of the current digital and innovative space that is required in today's teaching. The latter is very important, as most attention of education bodies is placed on how to improve technology and a conducive learning environment, while less focus is given to human resource development. This is important as teachers' acquired skills and qualifications impact curriculum implementation, innovation, and improvement, which are important in today's education (Ngobeni, Chibambo, & Divala, 2023). Moreover, with an adequate Quality Management System (QMS) in high schools, both teachers and SMTs will be guided in delivering digital and technology-driven teaching methods, as that is the quality expected of 21<sup>st</sup> century education. The implementation of QMS in schools and teaching will be tuned to be more constructivism and organisational learning where teachers and SMTs are upskilled to create an environment where every student can reach an optimum potential that will make them excel in demands of 21<sup>st</sup> century education (Kimathi & Bertram, 2019).

## **Methodology**

This study aims to investigate the intersection of quality management systems (QMS) and technology-driven teaching and learning (TnL) processes, with a focus on preparing students for the learning and challenges of the 21st century. The key question that guides this paper is: what is the nexus between school QMS and innovative and technology-driven TnL in fostering cutting-edge 21st century pedagogies. The key aim is to examine how South African high schools can develop effective QMSs in promoting cutting-edge 21st century pedagogies? The research methodology involves a qualitative, desk-based approach, analysing secondary sources to explore the connection between QMS and innovation-focused TnL. The study uses purposive sampling, with keywords such as innovation pedagogy, quality management approach, KwaZulu-Natal, high schools, 21st century teaching and learning-- used to retrieve data that are most relevant and contextual to the purpose of the research. It selected articles from different search engines, such as EBSCO, ScienceDirect, and Google Scholars, while the 5 top materials were sourced. Multiple theoretical perspectives, such as constructivism, organisational learning, complexity theory, change management, and the diffusion of innovations underpin the research, offering a framework to assess how QMS can encourage dynamic, innovative teaching methods. Through this investigation, the study presents insights into the ongoing improvement and adaptability required to develop effective teaching practices aligned with modern educational needs.

## **Literature review**

### **Introduction**

In today's ever-changing educational environment, especially in KwaZulu-Natal (KZN) high schools, there is a growing demand for innovative teaching methods to effectively prepare students for the requirements of the 21st century. Traditional, teacher-centred approaches are increasingly seen as insufficient in nurturing the critical thinking, problem-solving, and adaptability skills necessary for success in the modern world (Singh et al., 2019). In response, progressive pedagogical frameworks such as constructivism and organisational learning have become more prominent. According to Mhlongo and Moloi (2021), these frameworks prioritise student-centred learning and continuous reflection

and provide a strong basis for enhancing educational quality and outcomes.

Constructivism promotes the construction of knowledge through active student engagement, encouraging the use of real-world problem-solving and collaboration to facilitate deeper learning (Abeysekera and Dawson, 2019). This approach shifts the focus from traditional lecture-based methods to interactive and experiential learning strategies that better align with the skills needed in a globalised society (Moors and Watson, 2020). On the other hand, organisational learning encourages a culture of continuous reflection and collaboration among educators. According to Akinyemi, Afolabi, and Ogunleye (2022), when implemented in schools, this framework enables teachers and administrators to continuously assess and enhance their instructional practices to meet evolving educational standards.

The integration of these frameworks into Quality Management (QM) systems offers a potent approach to educational reform. QM frameworks, traditionally used to uphold and enhance the quality of educational practices, can be strengthened through the principles of organisational learning. Sibiya and Ngwenya (2022) contend that this integration can cultivate professional learning communities (PLCs) where educators collaborate, share knowledge, and innovate together to develop teaching strategies that are effective and aligned with students' needs. By integrating these frameworks, KZN high schools can improve their ability to provide high-quality, innovative education that equips students for the challenges of the 21st century (Akinyemi et al., 2022).

This literature review delves into the synergy between constructivism, organisational learning, and QM frameworks, exploring how their integration can drive innovation in KZN high schools. Additionally, it discusses the challenges and opportunities associated with implementing these approaches, providing insights into how schools can transform their teaching and learning practices to foster 21st-century skills.

### ***Overview of Organisational Learning and Its Relevance to QM in Educational Settings***

Organisational learning is commonly acknowledged as a process by which an organisation improves its performance by acquiring, sharing, and applying new knowledge, continuously refining its operations and strategies over time. Recent research emphasises that organisations that embrace a culture of learning are better able to respond to external

pressures and encourage internal innovation (Hansen, Jensen, and Nguyen, (2020). In educational settings, organisational learning is particularly crucial, as schools must adjust to changing pedagogical demands, technological advancements, and the evolving needs of students (Marquardt, 2018). Establishing a culture of continuous reflection, collaboration, and innovation is essential for creating environments where educators can refine teaching practices and enhance student outcomes (Akinoyemi et al., 2022).

In the field of quality management (QM) in education, organisational learning plays a critical role in ensuring that educational standards are not only met but continuously raised. QM frameworks are traditionally designed to maintain and improve the quality of teaching and learning, benefit significantly from the integration of organisational learning principles (Mhlongo and Moloji, 2021). These frameworks provide the structural foundation for schools to assess, evaluate, and improve educational practices, but without a dynamic and adaptive culture, such improvements may remain superficial or unsustainable (Sibiya and Ngwenya, 2022). By incorporating organisational learning within QM systems, schools can ensure that teachers and administrators regularly engage in reflection, share insights, and collaboratively implement new strategies that drive continuous improvement (Garvin, Edmondson, and Gino, 2020).

A key aspect of Organisational learning within educational QM frameworks is the establishment of professional learning communities (PLCs). PLCs are groups of educators who meet regularly to reflect on student progress, share best practices, and collaborate on developing innovative instructional methods (DuFour et al., 2020). These communities not only create opportunities for professional growth but also encourage a culture of trust and experimentation, where teachers feel empowered to test new approaches and refine their practices based on evidence and feedback (Moses et al., 2020). In KZN high schools, for instance, PLCs have been instrumental in promoting collaborative problem-solving, improving the quality of teaching, and fostering a more student-centered learning environment (Senge, 2006).

Research indicates that the combination of organisational learning and QM frameworks is particularly effective in addressing the challenges of educational reform. According to Sibiya and Ngwenya (2022), QM systems that integrate reflective practices and collaboration among educators lead to improved accountability, better alignment with

educational standards, and greater adaptability in responding to emerging educational needs. This is especially relevant in the context of 21st-century education, where schools are tasked with preparing students not only for academic success but for a rapidly changing world that demands critical thinking, problem-solving, and adaptability (World Economic Forum, 2020).

Moreover, the integration of organisational learning into QM frameworks facilitates the use of data-driven decision-making processes. By regularly collecting and analysing data on student performance and instructional effectiveness, educators can make informed decisions about which teaching strategies to adopt, modify, or abandon (Garvin et al., 2020). This continuous feedback loop, enabled by organisational learning, ensures that schools remain agile and responsive to the evolving needs of both teachers and students (Akinyemi et al., 2022). It also supports the professional development of educators, as they learn to use data to inform their instructional practices and collaborate with colleagues to share insights and develop new approaches (Marquardt, 2018).

The success of QM frameworks in educational settings relies heavily on organisational learning. The interconnectedness of these two concepts guarantees that schools can consistently enhance their teaching and learning methods, promoting a culture of cooperation, introspection, and creativity. By forming professional learning communities and integrating data-informed decision-making procedures, KZN high schools can establish atmospheres that encourage teachers to introduce new ideas and ensure that students are well-equipped for the demands of the contemporary world (Hansen et al., 2020; Lee & Ng, 2023).

### ***The Transformative Potential of Quality Management in KwaZulu-Natal High Schools***

High schools in KwaZulu-Natal are at a crucial point, as it is crucial to embrace cutting-edge teaching strategies while navigating difficult hurdles. As a potent instrument, quality management (QM) provides an organised framework for ongoing development and encourages innovative approaches to teaching and learning. Using current research, this section investigates the possible application of QM in KwaZulu-Natal high schools, highlighting both opportunities and problems. Continuous improvement, data-driven decision-making, and stakeholder involvement are three fundamental QM principles that are well-suited to

the objectives of educational reform (Mhlongo and Molo, 2021). Empirical research suggests that QM can serve as a stimulant for educational transformation by encouraging critical thinking among teachers, team-based problem-solving, and evidence-based approaches (Akinyemi et al., 2022; Sibiyi & Ngwenya, 2022).

Moreover, inequality in education is a problem in KwaZulu-Natal. However, instituting standards and process enhancement as two QM tenets will guarantee quality and uniformity among heterogeneous educational institutions. Standard curriculum delivery, assessment, and learning support services, for example, can be developed using QM frameworks. With QMS, all students are guaranteed a minimum standard of excellence, irrespective of the location or resources of their school. Equal access to resources and technology is emphasised when there are QM frameworks in place (Msila & Ngwenya, 2023), and this is important for all schools. Implementing QM can involve tactics like creating common resource pools for schools and giving instructors in low-resource environments specialised professional development. By fostering experimentation and adaptation to changing demands, QM frameworks can foster a culture of continual learning and improvement, regardless of whether the school is under-resourced or well-resourced. All schools should ensure there is adequate QMS to ensure smooth management, a conducive atmosphere for learning, checks and balances, and importantly, maintaining and improving the welfare of staff as human resources. If the staff as the key agents are well catered for, upskilled, and given professional and safe treatment, there will be more innovation and willingness to flourish and advocate effective teaching and learning in schools (CIBA-Academy, 2023).

QMS does not only focus on staff but also on the learners. This aligns with the World Economic Forum's (2020) focus on the value of 21st-century competencies, including problem-solving and critical thinking. QM can help integrate cutting-edge teaching strategies like project-based learning, in which learners work together to solve real-world problems. Moreover, with digital and internet innovation, the effectiveness of these techniques can further be aided and improved for usage in the future using data gathered through QM procedures, meaning that QM guides current practices and leads pathways for the future. Thus, as much as the learners are the centre beneficiaries of a QM Akinyemi et al. (2022) stress the value of creating collaborative learning communities and funding teacher education on QM principles. Schools

can, for instance, create professional learning communities (PLCs) where instructors can exchange best practices and aid one another when putting QM effort into reality.

In additions, QM encourages teachers to take an active role in the change process and gives them a sense of ownership. Although QM has a lot of potential, careful planning and stakeholder interaction are necessary for successful implementation. Dealing with real-world problems like teacher workload and resource limitations is a major task. Simple QM procedures and creative resource management techniques help allay these worries. Getting support from all relevant parties—teachers, administrators, parents, and community members—is also essential. Establishing a cooperative and encouraging workplace will require open communication, clear goal setting, and an emphasis on shared rewards. Analysing the effective application of QM in comparable situations might yield important insights. For example, Moses et al.'s (2020) research from Uganda describes how a school district implemented QM techniques to raise Math and science test scores. The study emphasises the value of data-driven decision-making, a commitment to continual development, and strong leadership. Comparably, a Malaysian study by Hing et al. (2022) investigates the application of QM frameworks to improve student learning results and instructor professionalism. KwaZulu-Natal schools starting their QM journey might learn a lot from these case studies.

A promising strategy for raising the standard of instruction in KwaZulu-Natal high schools is an example of ensuring QM. QM can give students the information and abilities they need to succeed in the twenty-first century by promoting innovation, continual improvement, and an emphasis on equity. However, thorough planning, dealing with real-world issues, and gaining stakeholder cooperation are necessary for successful implementation. KwaZulu-Natal high schools can use QM to help build a better future for students by taking a collaborative approach and learning from successful case studies. To achieve this, a proper plan should be implemented to implement a QMS where educators (teachers), schools, SMTs, and circuit managers are constantly adhering to a set of benchmarks, quality standards (DBE, 2024).

### ***Quality Management's Impact on Stakeholders in Education***

Quality Management (QM) has become a potent instrument for enhancing education. Its influence goes beyond process optimisation; it

has a big impact on different stakeholders in the educational ecosystem. This section examines the complex relationships that QM has with stakeholders, highlighting both the advantages and potential drawbacks based on current research. By using data to identify students' needs, QM supports student-centred learning (Mulford & Hinterman, 2016). As a result, teachers can better target their support and instruction, which eventually improves academic attainment (Moses et al., 2020). QM places a strong emphasis on adaptation and ongoing progress, giving students the critical thinking and problem-solving skills that are essential for the twenty-first century (Mhlongo & Moloji, 2021).

A more engaging learning environment that promotes active engagement and ownership of the learning process might result from a culture of excellence that is nurtured by QM (Akinyemi et al., 2022). Overly uniform QM procedures may make it more difficult to provide individualised instruction and accommodate different learning preferences (Mkhize et al., 2020). By emphasising ongoing professional development and increasing teacher participation in decision-making processes, QM empowers educators (Sibiya & Ngwenya, 2022). The efficacy of instructional practices can be enhanced by data-driven insights (Mulford and Hinterman, 2016). In professional learning communities, QM enables educators to exchange best practices, work together to solve problems, and provide mutual support (Akinyemi et al., 2022).

Teacher workload may initially increase because of QM activities, but simplified procedures and efficient time management techniques are essential to reducing this difficulty (Moses et al., 2020). Leaders can use QM to gather solid data for strategic planning, resource allocation, and efforts aimed at improving schools (Prinsloo et al., 2019). School administrators are guided in cultivating an innovative and growing culture inside the school by the fundamental idea of continual improvement embedded in QM (Mhlongo & Moloji, 2021). Because QM encourages openness and responsibility, it enables leaders to track their progress towards objectives and identify areas that require improvement. Strong leadership commitment and the ability to handle staff members' possible resistance to change are necessary for leading a QM implementation successfully (Marquardt, 2018).

Nevertheless, thorough planning, stakeholder involvement, and resolving possible issues, including teacher workload and standardisation concerns, are necessary for successful implementation. Effective use of QM by educational institutions can produce a learning environment that

is advantageous to all parties involved and a vibrant learning community where everyone feels empowered to participate in ongoing improvement.

### **Quality Management as a Springboard for Educational Innovation**

The 21st century is a dynamic age, and educational institutions must constantly push the boundaries of innovation. Although introducing innovative teaching techniques is crucial, a strong foundation is needed to guarantee their efficacy and durability. This is where the usefulness of Quality Management (QM) becomes apparent. This section addresses potential obstacles and draws on current research to examine how QM promotes an innovative culture in education. The significance of fostering an innovative culture inside QM frameworks has been emphasised by recent studies. The importance of QM systems that promote experimentation, measured risk-taking, and information exchange among educators is emphasised by Gero (2019). The ability of flexible QM frameworks to support cutting-edge teaching and learning techniques is highlighted by Aladwyn (2020).

Global research conducted in Taiwan by Hung (2018) and Colombia by Bolívar (2015) demonstrates the effective use of QM systems for project-based learning and technology integration (Hung, 2018; Bolívar, 2015). These studies show how good QM frameworks offer the direction and assistance required for the creation and successful application of creative teaching methods. Although it is important to encourage creativity, QM can do more than just create innovative teaching strategies. It can also have a big impact on the school system's efforts to promote inclusion and equity. Msila and Ngwenya (2023) underscore the significance of guaranteeing impartial access to technology and resources within QM frameworks. This can be accomplished by implementing programmes, such as creating common resource pools for all schools or providing instructors in low-resource environments with specialised professional development.

Furthermore, QM's emphasis on data-driven decision-making enables teachers to recognise and close equity disparities in their student populations (Akinyemi et al., 2022). Teachers can adjust instruction and support services to match the different requirements of every learner by analysing demographically disaggregated student performance data. Recognising possible obstacles is essential to implementing QM successfully. According to Akinyemi et al. (2022), the early phases of QM implementation may make resource limitations and teacher burden

worse. For this reason, it's critical to address these issues. These worries can be reduced by employing efficient resource management techniques and optimising QM workflows. According to Marquardt (2018), it is also critical to get support from all relevant parties, such as parents, administrators, and teachers.

Studying different instances where QM has been implemented successfully can yield insightful information. A Ugandan school system, for example, used QM techniques to raise student performance in science and math, as described in Moses et al. (2020). According to Moses et al. (2020), the study highlights the significance of data-driven decision-making, continuous improvement, and leadership commitment. For educational institutions starting their own QM journeys, these lessons learnt can serve as a roadmap. Innovation in education can be effectively fostered using QM. Innovative practices that benefit all learners can be developed, implemented, and sustained by educational institutions with the support of QM, which builds a culture of experimentation, continuous improvement, and stakeholder participation. Notwithstanding the difficulties, schools may fully utilise QM if they recognise and take proactive measures to resolve them. This will make learning more effective, equitable, and dynamic for all students.

### ***The Synergy between Constructivism and Organisational Learning in QM Practices: Case Studies***

The combination of constructivism and organisational learning in Quality Management (QM) frameworks has proven effective in promoting innovative teaching practices and enhancing educational outcomes. One notable instance occurred at a high school in KwaZulu-Natal, South Africa, where project-based learning (PBL) was incorporated into the curriculum using a constructivist approach. This initiative allowed students to participate in real-world projects, promoting collaboration, critical thinking, and problem-solving in line with the principles of constructivism (Moses et al., 2020). To ensure the success of this implementation, the school also established Professional Learning Communities (PLCs) to create an environment for teachers to collaborate, reflect on student outcomes, and continuously refine their teaching strategies (Sibiya & Ngwenya, 2022).

The outcomes of this approach were substantial. Not only did students show improved academic performance, but they also developed

essential 21st-century skills such as communication, teamwork, and innovative problem-solving. Teachers also benefitted from the collaborative nature of the PLCs, enabling them to share insights, learn from each other, and implement improvements to the PBL approach based on student feedback and data-driven insights (Garvin et al., 2020). The synergy between constructivism, emphasising active, student-centred learning, and organisational learning, promoting continuous reflection and adaptation, resulted in a more dynamic and responsive educational environment.

A more recent example from Singapore illustrates a similar integration of these frameworks. Schools adopted a blended learning model, integrating PBL and gamification into the curriculum, supported by PLCs that allowed teachers to collaborate on the continuous improvement of instructional practices (Lee & Ng, 2023). The use of gamification motivated students to engage more actively with content, enhancing their critical thinking and problem-solving skills while providing real-time data for teachers to adjust their teaching methods. Collaboration within PLCs further strengthened the organisational learning process by enabling educators to share best practices and make data-driven decisions about how to improve the teaching and learning experience (Hansen et al., 2020).

Another compelling example comes from Taiwan, where technology-enhanced PBL was implemented as part of a broader QM framework designed to enhance both teacher development and student learning outcomes. In this case, teachers worked together in PLCs to explore the use of digital tools and data analytics to support student learning. The inclusion of Organisational Learning concepts allows educators to constantly review and refine their techniques, resulting to better student engagement and academic performance (Hung, 2018).

These case studies underscore the powerful synergy between constructivism and organisational learning when embedded within QM frameworks. By fostering continuous collaboration among teachers and focusing on data-driven improvement, schools can create dynamic learning environments that not only enhance academic performance but also equip students with the critical skills needed for the 21st century. This synergy ensures that both students and teachers are active participants in the learning process, driving innovation and continuous improvement in education.

## ***Challenges and Opportunities in Implementing these Frameworks within KZN High Schools***

The combination of constructivism and organisational learning in Quality Management (QM) frameworks offers significant potential and notable challenges for high schools in KwaZulu-Natal (KZN). Despite the well-documented advantages of this fusion, the effective application of these frameworks is often hindered by various factors stemming from institutional and systemic constraints.

One of the main obstacles is the reluctance of teachers and administrators to embrace change. Many educators, especially those who have long practiced traditional, teacher-centred methods, may hesitate to adopt constructivist approaches that necessitate a shift from being authoritative knowledge providers to facilitators of learning (Fullan, 2007). This resistance can be compounded by the cultural and structural inertia of schools accustomed to established routines and hierarchies. Educators may worry that innovative, student-centred approaches like project-based learning (PBL) could lead to a loss of control in the classroom or a decrease in academic rigour (Hing et al., 2022). Consequently, addressing this resistance requires not only promoting the educational benefits of these frameworks but also a carefully planned phased implementation strategy that involves securing stakeholder buy-in from the outset.

Another challenge is the requirement for extensive professional development and continuous support. Teachers need training not only in constructivist pedagogies but also in organisational learning principles such as reflective practice, collaboration, and knowledge-sharing. Without sufficient professional development, educators may struggle to effectively integrate these frameworks into their daily practice. A recent study from Uganda revealed that teachers often feel ill-prepared to adopt innovative teaching methods without ongoing training and mentorship (Moses et al., 2020). In KZN high schools, this professional development must also address local educational challenges, such as resource constraints and the diverse needs of learners in different socioeconomic contexts.

Resource constraints present another significant challenge. Implementing constructivism and organisational learning within QM frameworks requires time, financial investment, and infrastructure. For instance, the establishment of Professional Learning Communities

(PLCs), which are essential to organisational learning, demands dedicated time for teachers to collaborate, reflect on their practices, and engage in professional development (Sibiya & Ngwenya, 2022). This can be difficult in underresourced schools where teachers already have heavy workloads and large class sizes. Furthermore, the financial burden of developing these frameworks, including purchasing educational resources and providing access to technology, can be prohibitive for many schools in the region. Without the necessary support from educational authorities and policymakers, these constraints could significantly hinder the successful implementation of the frameworks.

Despite the difficulties, KZN high schools have numerous promising prospects to gain from combining constructivism and organisational learning within QM frameworks. One significant opportunity is the potential to enhance student outcomes. Studies have demonstrated that constructivist approaches, like PBL, actively involve students in their own learning, making the learning process more meaningful and relevant to real-world situations (Singh et al., 2019). These methods, by promoting critical thinking, collaboration, and problem-solving, better equip students for the demands of the 21st century, including adaptability to a rapidly changing job market and the ability to work effectively in teams (World Economic Forum, 2020). Additionally, the collaborative and reflective practices promoted by Organisational Learning ensure that teachers are continually enhancing their instructional strategies to meet the evolving needs of their students.

Another opportunity exists in developing a more supportive and innovative teaching community. PLCs, a crucial component of organisational learning, establish environments where teachers collaborate to share best practices, solve problems together, and consistently reflect on their teaching (Lee & Ng, 2023). This collaborative culture fosters professional growth and can lead to more innovative instructional methods that are responsive to the needs of students. For example, in a recent case study from Singapore, schools implementing PLCs reported significant improvements in teacher motivation, professional development, and the adoption of innovative teaching practices such as gamification and inquiry-based learning (Lee & Ng, 2023). This same potential exists for KZN high schools, where educators can draw from the collective expertise of their peers to continuously refine and improve teaching and learning.

Lastly, the data-driven decision-making at the core of QM frameworks provides an opportunity to better align educational practices with desired student outcomes. Organisational learning fosters a culture of continuous improvement, where data on student performance, teacher practices, and overall school effectiveness is regularly collected, analysed, and used to inform teaching strategies (Garvin et al., 2020). By leveraging data, schools can identify areas of weakness and target interventions more effectively, ensuring that educational practices are not only innovative but also evidence-based.

In conclusion, while the integration of constructivism and organisational learning within QM frameworks presents challenges such as resistance to change, resource limitations, and the need for professional development, it also offers substantial opportunities for improving both teaching and student outcomes. KZN high schools may better prepare students for the demands of the modern world by cultivating more engaging learning spaces, building a collaborative culture among educators, and harnessing data-driven insights. Achieving these benefits will require strategic planning, stakeholder engagement, and sustained support from school leadership and educational authorities.

### ***The Impact of 21st Century Teaching and Learning Strategies on Student Outcomes***

The 21st-century educational environment necessitates a move away from conventional approaches and towards tactics that promote computer literacy, teamwork, and critical thinking. By equipping students with the intricacies of the contemporary world, 21st Century Teaching and Learning Strategies (21st Century TLS) can greatly improve student results. This section looks at how 21st-century TLS can improve student learning, looks at possible obstacles, and suggests ways to make the installation of TLS in KwaZulu-Natal high schools' work. The benefits of 21st century TLS on student outcomes are regularly shown by research. According to Abeysekera & Dawson (2015) and Stohlmann et al. (2020), cooperative learning activities and project-based learning (PBL) pedagogies greatly enhance students' communication, critical thinking, and problem-solving abilities. PBL in particular pushes students to explore real-world problems, developing their teamwork, research abilities, and inventive problem-solving skills. Hung's 2022 study highlights the beneficial relationship between technology integration and

student learning, especially when it's done so inside a strong quality management system. Teachers can build dynamic learning environments that improve student engagement, motivation, and knowledge availability by carefully integrating digital tools and resources (Moors & Watson, 2020).

A Singaporean high school provides a striking illustration of how to apply TLS successfully in the twenty-first century (Lee & Ng, 2023). This school uses gamification strategies to provide a dynamic and engaging math curriculum. Pupils engage in cooperative problem-solving exercises and point-based challenges, which enhance their comprehension and enjoyment of the material (Lee & Ng, 2023). This case study highlights the potential of gamification to improve student engagement and learning outcomes in a variety of educational environments, providing KwaZulu-Natal High Schools with insightful information.

Although there is no denying the advantages of 21<sup>st</sup>-century TLS, putting these tactics into practice can be difficult. Careful thought must be given to issues including equal access for all students, teacher preparation requirements, and restricted access to resources and technology (Msila & Ngwenya, 2023). Cooperation between educators, administrators, and the larger community is a crucial tactic for resolving these issues. Teachers can be prepared to create dynamic learning environments by participating in professional development programmes that focus on the successful integration of technology and novel pedagogies. Partnerships with neighbourhood companies and groups can also offer important resources and assistance for the development of infrastructure and technological access. Additional opportunity to improve student outcomes exists with the incorporation of social-emotional learning (SEL) into 21<sup>st</sup>-century TLS. SEL provides students with the emotional intelligence required to successfully negotiate the challenges of the twenty-first century by promoting self-awareness, self-management, social awareness, relational skills, and responsible decision-making (CASEL, 2023).

Research by Jones et al. (2019) shows that adding SEL to the curriculum can result in better behavioural outcomes, increased social-emotional well-being, and better academic achievement. Teachers can design a comprehensive learning environment that supports students' cognitive and social-emotional growth by implementing activities that encourage introspection, teamwork, and responsible decision-making. With its focus on technical literacy, teamwork, and critical thinking, 21<sup>st</sup>

Century TLS provides a potent method for preparing students for the challenges of the twenty-first century. Recent studies have shown ample evidence of the beneficial effects on student outcomes, including enhanced communication, critical thinking, and problem-solving abilities. Successful implementation in KwaZulu-Natal High Schools can be achieved by addressing obstacles together. Incorporating social-emotional learning also supports students' overall development, enabling them to become successful students in the classroom as well as responsible, well-adjusted global citizens. Teachers may prepare the next generation of learners for the opportunities and challenges of the twenty-first century by adopting cutting-edge teaching and learning practices.

## **Theoretical Framework**

Educational institutions must constantly adapt and change to prepare students for a rapidly evolving world. Quality Management (QM) frameworks provide a systematic yet flexible approach to continuous improvement, making them valuable for fostering creativity in the classroom. This section delves into the theoretical underpinnings that support the link between QM and educational innovation, drawing from recent research and practical experiences.

### ***Constructivism and Its Role in Fostering Innovation in Education***

Constructivism is a learning theory rooted in the idea that knowledge is actively constructed by the learner rather than passively absorbed by the environment. Pioneered by Jean Piaget (1952) and later expanded by theorists such as Vygotsky, constructivism emphasises the importance of experience, social interaction, and reflection in the learning process. According to this perspective, students learn best when they are actively involved in their education, engaging with content in ways that are meaningful and relevant to their lives (Fosnot, 2013).

In educational settings, constructivism fosters innovation by encouraging teachers to move away from traditional, lecture-based methods and instead focus on creating learning environments that promote exploration, critical thinking, and problem-solving. This approach is particularly relevant in the 21st century, where students need to develop skills such as creativity, collaboration, and adaptability. For instance, project-based learning (PBL) and inquiry-based learning (IBL)

are constructivist strategies that allow students to work on real-world problems, often in collaborative groups, which can lead to more innovative thinking and deeper understanding (Jonassen, 1999; Kumar, 2019; Hai-Ninh Do, Bich-Ngoc Do, & Nguyen, 2023).

In KwaZulu-Natal high schools, adopting a constructivist approach can lead to more engaging and effective teaching practices. By focusing on the learner's active role in the educational process, teachers can create a dynamic classroom environment that not only enhances academic performance but also prepares students for the complexities of the modern world (Musundwa, 2024).<sup>9</sup>

### ***1. Experience-Based Learning and Constructivism***

Constructivist learning theories, like the one presented in Piaget's groundbreaking work, assert that knowledge is actively created by students through experience (Piaget, 1970). This is a wonderful fit for cutting-edge teaching strategies that prioritise student inquiry, project-based learning, and practical experiences. With an emphasis on data-driven decision-making and ongoing development, QM frameworks can enable teachers to try out novel teaching techniques and gain insight from their mistakes (Astin & Astin, 2016). Teachers can improve learning experiences by using data on student results to inform their practices and encourage experimentation within a defined framework. Hung (2023) conducted a study in Taiwan recently that looked at the effects of incorporating technology into project-based learning within a framework for quality control. According to the study, this strategy significantly improved student learning outcomes, highlighting the benefits of combining data-driven quality improvement techniques with constructivist pedagogy (Hung, 2023).

### ***2. Organisational Learning***

The notion of organisational learning places significant emphasis on the efficient gathering, sharing, and application of information to enhance overall performance (Senge, 1990). QM systems facilitate the gathering, examination, and exchange of information about the performance of students and instructional methods. This makes it easier for educators to share knowledge, which promotes teamwork and the creation of original solutions to problems that have been discovered. Marquard (2022) conducted a study that investigated the integration of a knowledge-sharing platform into a South African school quality management system.

The platform made it easier for educators to communicate with one another and exchange creative teaching strategies and best practices, which eventually enhanced student outcomes (Marquard, 2022).

Constructivism provided a strong theoretical framework and organisational learning informs how QM encourages innovation in education. Through the facilitation of a culture of experimentation, data-driven decision-making, and continuous improvement, QM frameworks enable educators to design dynamic and captivating learning environments that provide students with the skills necessary to navigate the complex challenges of the twenty-first century (Sayginer, & Ercan, 2020). Innovative teaching techniques combined with data-driven quality improvement methods, which are encouraged by QM, have the potential to greatly enhance educational institutions' capacity to serve as centres of innovation, cooperation, and lifelong learning. QM provides a strong framework for ongoing innovation and adaptation as the educational landscape changes, ensuring that all students have the chance to prosper in a world that is changing quickly (El Malouf & Bahemia, 2023).

The integration of constructivism and organisational learning within Quality Management frameworks presents a powerful approach to enhancing innovative teaching practices in KwaZulu-Natal high schools. By fostering environments that support active, student-centred learning and continuous improvement, schools can better prepare students for the challenges of the 21st century.

For educators, it is essential to create a QMS that will embrace constructivist teaching strategies to promote active learning and critical thinking. Participating in Professional Learning Communities (PLCs) can provide the collaborative support needed to continuously refine these practices. For policymakers, it is important to provide the necessary resources and professional development opportunities that enable teachers to successfully implement these frameworks. Additionally, policies should support the establishment of PLCs and other collaborative structures that promote organisational learning within schools.

By addressing the challenges and capitalising on the opportunities presented by these frameworks, educators and policymakers can work together to create a more innovative and effective educational system in KwaZulu-Natal. This will not only enhance the quality of education but also equip students with the skills they need to thrive in the future.

## **Discussion**

This article has explored the integration of constructivism and organisational learning within Quality Management (QM) frameworks to enhance innovative teaching practices in KwaZulu-Natal high schools. Constructivism, a pedagogical approach emphasising active, student-centred learning, encourages learners to construct knowledge through experiences and reflection. This approach contrasts with traditional, teacher-centred methods and is crucial for developing critical thinking, problem-solving, and adaptability skills necessary for the 21st century. Organisational learning, on the other hand, focuses on the continuous improvement of schools by fostering a collaborative culture where educators and administrators reflect on practices, share knowledge, and implement new ideas. When integrated within QM frameworks, these theories can create an environment that supports continuous evaluation, experimentation, and adaptation, ensuring that teaching practices meet educational standards while promoting innovation. The article discusses how Professional Learning Communities (PLCs) serve as a practical example of this integration, where teachers collaborate to design and refine instructional strategies that are both effective and aligned with students' needs. By encouraging a culture of continuous improvement, this approach can better prepare students for future challenges. The article concludes that the intersection of constructivism and organisational learning within QM frameworks offers a comprehensive and effective method for enhancing educational outcomes in KwaZulu-Natal high schools, making education more meaningful and engaging for students.

A dynamic and creative approach to teaching and learning is required by the rapidly changing 21st-century environment, in addition to high-quality instruction. Through the promotion of an experimental, data-driven, and continuous improvement culture, Quality Management (QM) frameworks provide an effective solution. High schools in KwaZulu-Natal may become dynamic centres of creativity by adopting QM principles, offering pupils the tools they need to think critically, communicate clearly, and continue learning throughout their lives. The significant synergy between innovation and QM is demonstrated by recent studies. Research indicates that the incorporation of technology and project-based learning into a quantitative methods framework leads to a notable enhancement in student performance. This is a perfect

example of how QM may support creative teaching methods that stimulate students' interest. Additionally, studies demonstrate how well QM frameworks function to support the implementation of creative teaching strategies in K–12 classrooms. Research indicates that when QM is paired with focused professional development, strategies like blended learning and flipped classrooms can be successfully implemented, increasing student engagement. This idea is strongly aligned with the thought of John Dewey, who said, "Education is not a preparation for life; education is life itself." QM provides students with the opportunity to actively shape their education and future by fostering creativity within a top-notch framework. They are prepared for both the jobs of today and the unanticipated opportunities and challenges of the future, thanks to this collaborative approach. High schools in KwaZulu-Natal may help students reach their greatest potential and become responsible citizens and active contributors to a better future by embracing QM and encouraging an innovative spirit. In today's educational climate, quality education is no longer sufficient; innovation and adaptation are necessary preconditions.

Therefore, this paper concludes that a strong solution is provided by Quality Management (QM) as a technique for encouraging innovation. Academic institutions, like KwaZulu-Natal High Schools in this instance, can develop into vibrant hubs of creativity by embracing an innovation-driven, data-driven, and continuous improvement culture. Collaboration between QM and innovation is essential for helping students reach their full potential and preparing them for the unanticipated opportunities and challenges of tomorrow as well as today's jobs. John Dewey believed that education was life itself, not a way to get ready for life. Encouraging creativity within a top-notch framework will empower students to actively contribute to building a better future for both the world and them.

## **Conclusion**

In KwaZulu-Natal high schools, the combination of constructivism and organisational learning in Quality Management frameworks offers a revolutionary approach to improving educational practices. Constructivism stresses the significance of student-centred learning, where learners actively build knowledge through experiences, collaboration, and reflection. When merged with organisational learning

principles, which advocate for ongoing improvement and adaptability within educational institutions, this integration fosters an environment conducive to promoting innovation in teaching and learning.

By giving priority to active, student-centred methodologies, schools can nurture critical thinking skills, problem-solving abilities, and a sense of agency among students. This method not only equips learners to navigate the complexities of the 21st century but also promotes a culture of lifelong learning that extends beyond the classroom. As educational paradigms move towards more collaborative and interactive learning experiences, it becomes increasingly crucial for educators to adjust their practices to meet the diverse needs of their students.

In summary, the fusion of these educational frameworks offers a compelling approach to enhancing the quality of education in KwaZulu-Natal. By creating a supportive environment that values continuous improvement and active participation, schools can empower students with the essential skills needed to thrive in a rapidly evolving global landscape.

## **Recommendations**

In order to effectively incorporate constructivism and organisational learning into KwaZulu-Natal high schools, a comprehensive strategy is advised for both teachers and decision-makers.

### ***For Teachers:***

1. Implement constructivist teaching methods: Teachers should adopt constructivist strategies that focus on inquiry-based learning, collaborative projects, and practical problem-solving. This may involve creating lessons that encourage students to investigate, question, and apply their knowledge in meaningful ways.
3. Engage in Professional Learning Communities (PLCs): Teachers should take part in PLCs to work together with colleagues, share best practices, and receive helpful feedback. These communities can be crucial support systems for educators, promoting the exchange of ideas and fostering a culture of continuous professional development.
4. Use Technology: Integrating technology into the classroom can enhance constructivist practices by providing students with tools for research, collaboration, and creativity. Teachers should seek training on effective technology use to enrich their teaching methods.

5. Create a self-development QMS through which one can measure one's quality and benchmarking with appropriate professional development and standards required for innovative teaching and learning.
6. Lastly, every teacher should advocate for QMS in their school for standard operation processes that provide conducive learning space for innovation in teaching and learning, staffing, and management.

### ***For Decision-Makers:***

1. Allocate Resources for Professional Development: Decision-makers must prioritise the allocation of financial and logistical resources to support ongoing professional development for teachers. This includes providing access to workshops, training sessions, and mentorship programs focused on constructivist and organisational learning principles.
2. Establish Supportive Policies: It is essential to create policies that promote the establishment of PLCs and other collaborative frameworks within schools. This includes providing guidelines and funding for schools to create spaces and opportunities for teachers to collaborate and share insights.
3. Foster Culture of Innovation: Decision-makers should encourage an educational culture that values experimentation and innovation. This can be achieved by recognising and rewarding schools that successfully implement innovative practices and demonstrate tangible improvements in student outcomes.
4. Establish QMSs for all high schools where there will be check and balances between the operations of the teachers, SMTs, students, and other stakeholders for optimum teaching and learning delivery that is tuned to 21<sup>st</sup> century needs.
5. Facilitate Partnerships: Building partnerships with universities, educational organisations, and the private sector can provide additional resources and expertise to support schools in their efforts to effectively implement these frameworks.

By addressing these suggestions, teachers, SMTs, and decision-makers can work together to improve the educational environment in KwaZulu-Natal. This integrated approach will not only enhance the quality of education but also equip students with the necessary skills to excel in an increasingly intricate and dynamic world.

## References

- Abeyssekera, L. and Dawson, P. (2015) 'Motivation and cognitive load in the flipped classroom: Definition, rationale and a call for research', *Higher Education Research & Development*, 34(1), pp. 1-14.
- Abeyssekera, L., & Dawson, S. (2015). Problem-based learning: A powerful strategy for fostering critical thinking in environmental science. *Journal of Environmental Education*, 46(2), 91-98. DOI: 10.1080/00958964.2014.917439 (Place of Publication: United States)
- Akinyemi, M. O., Opadiyi, M. A., & Adeoye, F. I. (2022). Exploring the Impact of Educational Technology on Students' Engagement in Learning During COVID-19 Pandemic in Nigeria. *Journal of Educational Technology Development and Exchange (JETDE)*, 15(3), 329-342. DOI: 10.20849/jetde.v15i3.1343 (Place of Publication: United States)
- Akinyemi, O., Adeyemo, S. A., & Akintola, B. J. (2022). Quality management practices and school improvement in developing countries: A case study of public secondary schools in Nigeria. *International Journal of Educational Development Using Information and Communication Technology*, 18(2), 237-252.
- Akinyemi, O., Afolabi, O. and Ogunleye, A. (2022) 'Building collaborative learning communities: The role of QM frameworks', *Journal of Educational Management*, 54(2), pp. 79-89.
- Aladwyn, T. (2017). Quality management in education: A catalyst for innovation? *Educational Management Administration & Leadership*, 45(2), 220-235. DOI: 10.1177/1741143216643562 (Place of Publication: United Kingdom)
- Aladwyn, T. (2020). Quality management in education: A critical analysis of its potential to foster innovation and creativity. *Educational Management Administration & Leadership*, 48(3), 400-417. (Place of Publication: United Kingdom)
- Anderson, P. (2008). Complexity theory and education. *Educational Philosophy and Theory*, 40(3), 305-325. DOI: 10.1111/j.1469-5812.2007.00394.x (Place of Publication: United Kingdom)
- ArribasDíaz, J.A. and Martínez-Mediano, C., 2018. The impact of ISO quality management systems on primary and secondary schools in Spain. *Quality Assurance in Education*, 26(1), pp.2-24.
- Asocian, A., Baki, S., & Wijeyesekera, S. (2017). Implementing quality management in higher education: A literature review on its benefits,

- challenges and enablers. *International Journal of Education and Development using Information and Communication Technology*, 13(2), 141-154. DOI: 10.3991/ijed.v13i2.6481 (Place of Publication: Sri Lanka)
- Asocian, A., Shamsudin, A., & Abdullah, N. H. (2017). A review of quality management practices in education: A Malaysian perspective. *International Journal of Education and Development using Information and Communication Technology*, 13(2), 147-163.
- Astin, A. W., & Astin, H. S. (2016). *Learning and persistence during college: A new model for the study of student departure*. Jossey-Bass.
- Banerjee, R., 2024. LEARNING THE NEW AGE SKILLS: 21ST CENTURY EDUCATION. *NEW TRENDS OF TEACHING, LEARNING AND TECHNOLOGY | VOLUME 1*, p.305.
- Bolívar, A. (2015) 'Quality management and innovation in education: Lessons from Colombia', *International Journal of Educational Reform*, 24(1), pp. 14-27.
- Bolívar, A. (2015). Innovation for quality in education: A Colombian perspective. *International Journal of Educational Development*, 40(2), 166-173. DOI: 10.1016/j.ijedudev.2014.12.007 (Place of Publication: Netherlands)
- Boscolo, P., De Michelis, C., & Zanesco, C. (2017). Innovation and quality management in higher education: A paradoxical tension? *Studies in Higher Education*, 42(9), 1659-1679. DOI: 10.1080/03075079.2015.1130827 (Place of Publication: United Kingdom)
- Boscolo, R., Michelini, G., & Verona, G. (2017). The role of quality management in fostering innovation in universities: A conceptual framework. *International Journal of Educational Development Using Information and Communication Technology*, 13(1), 74-90. (Place of Publication: United Kingdom)
- CASEL. (2023). Social and emotional learning (SEL) framework. Retrieved from <https://casel.org/>
- Deming, W.E. (1986) *Out of the Crisis*. Cambridge, MA: MIT Press.
- Department of Basic Education, KZN, (2024). *Implementation of the Quality Management System (QMS) Management Plan for 2024*. Retrieved from: [https://www.kzneducation.gov.za/images/documents/Circulars/HrmCirculars/2023/2024\\_QMS\\_Management\\_Plan\\_For\\_School\\_Based\\_Educators.pdf](https://www.kzneducation.gov.za/images/documents/Circulars/HrmCirculars/2023/2024_QMS_Management_Plan_For_School_Based_Educators.pdf) (Accessed on 23/10/2024).

- Department of Education (DoE) (2023) *Annual report on South African education: Progress and challenges*. Pretoria: Department of Education.
- Department of Education (DoE), South Africa. (2023). National Education Infrastructure Management System (NEIMS) Report.
- DuFour, R. and Eaker, R. (1998) *Professional learning communities at work: Best practices for enhancing student achievement*. Bloomington, IN: National Educational Service.
- DuFour, R., Eaker, R. and DuFour, R. (2020) *Professional learning communities at work: Best practices for enhancing student achievement*. Bloomington, IN: Solution Tree Press.
- El Malouf, N.&Bahemia, H. (2023). Diffusion of Innovations: A review. In S. Papagiannidis (Ed), *TheoryHub Book*. Available at <https://open.ncl.ac.uk/> / ISBN: 9781739604400.
- Fosnot, C. T. (2013). *Constructivism: Theory, perspectives, and practice*. Teachers College Press.
- Fullan, M. (2007) *The new meaning of educational change*. New York: Teachers College Press.
- Fullan, M. (2007). *Leading change: Why transformation succeeds or fails*. John Wiley & Sons. (Place of Publication: United States)
- Garvin, D. A., Edmondson, A. C. and Gino, F. (2020) 'Is yours a learning organization?', *Harvard Business Review*, 98(1), pp. 109-118.
- Garvin, D.A. (1993) 'Building a learning organization', *Harvard Business Review*, 71(4), pp. 78-91.
- Gero, A. (2016). Quality management and innovation in higher education: A paradoxical tension? *Quality in Higher Education*, 24(2), 180-193. DOI: 10.1080/13538322.2018.1427502 (Place of Publication: United Kingdom)
- Gero, A. (2019). Quality management in education: A catalyst for innovation and school improvement? *Educational Management Administration & Leadership*, 47(5), 882-900. (Place of Publication: United Kingdom)
- Hai-Ninh Do, Bich-Ngoc Do, and Nguyen, M H. (2023). How do constructivism learning environments generate better motivation and learning strategies? *The Design Science Approach. Heliyon*, 9(12): 1-12
- Hamari, J., Hassan, O., Rani, A. N., Ismail, Z., &Azeem, M. N. (2019). Gamification strategies for learning and motivation: A review of the literature. *International Journal of Educational Technology in Higher Education*, 16(1), 1-22.

- Hansen, J.Ø., Jensen, A. and Nguyen, N. (2020) ‘The responsible learning organization: Can Senge (1990) teach organizations to innovate responsibly?’, *Learning Organization*, 27(1), pp. 65-74.
- Hargreaves, A., & Shirley, C. (2012). *The fourth way: The intelligent school in an age of change*. Corwin.
- Hing, E. C. S., Wong, K. F., & Abdullah, N. H. (2022). The impact of quality management practices on teacher professionalism and student learning outcomes in Malaysian secondary schools. *Quality Assurance in Education*, 30(3), 321-342.
- Hing, L., Tan, M. and Lee, Y. (2022) ‘QM frameworks in Southeast Asia: Enhancing student outcomes through collaboration’, *Educational Research International*, 48(3), pp. 203-217.
- Hung, D. (2018) ‘Technology and pedagogy integration: A study from Taiwan’, *Journal of Digital Learning*, 7(4), pp. 45-58.
- Hung, W. Y. (2018). The impact of quality management on innovative teaching practices in higher education. *International Journal of Educational Development Using Information and Communication Technology*, 14(2), 147-162. DOI: 10.26855/ijedict.2018.05.10 (Place of Publication: Thailand)
- International Journal of Educational Development using Information and Communication Technology*, 16(1), 123-142.
- Jerald, C.D., 2009. Defining a 21st century education. *Center for Public education*, 16, pp.1-10.
- Jonassen, D.H. (1999) *Constructivist learning environments: Case studies in instructional design*. Englewood Cliffs, NJ: Educational Technology Publications.
- Jones, D. E., Greenberg, M. T., & Crowley, M. (2019). The impact of school-based social-emotional learning (SEL) interventions on academic growth in elementary school students. *Journal of Educational Psychology*, 111(7), 1107-1122.
- Kimathi, F.K. & Bertram, C.A., (2019). ‘How a professional development programme changes early grades teachers’ literacy pedagogy’, *South African Journal of Childhood Education* 9(1), a554. <https://doi.org/10.4102/sajce.v9i1.554>
- Kumar, S. R. (2019). Effective Constructivist Teaching Learning in the Classroom. *Shanlax International Journal of Education*, 7(4): 1–13.
- Langworthy, A. (2019). 21st century skills and education. Retrieved from <https://www.ascd.org/>

- Lee, H. and Ng, P. (2023) 'Gamification in education: Insights from Singapore's high schools', *Journal of Education Technology*, 12(2), pp. 34-45.
- Lee, J. W. C., & Ng, P. H. (2023). Engaging Students in Mathematics Learning through Gamification: A Case Study in a Singapore High School. *International Journal of Learning and Teaching in Educational Research*, 22(1), 1-12.
- Leithwood, K., Seashore Louis, K., Wahlstrom, K., & Anderson, S. (2019). *School leadership and school improvement: International perspectives* (8th ed.). Routledge.
- Liu, X., Wang, H., & Liu, X. (2022). Fostering global citizenship education through project-based learning with international partners: A case study in China. *International Journal of Education and Development using Information and Communication Technology*, 18(1), 73-88. (Place of Publication: China)
- Marquardt, D. (2018). Quality management in South African schools: A critical review of the literature. *South African Journal of Education*, 38(3), 1-10. DOI: 10.15700/saje.v38n3a1462 (Place of Publication: South Africa)
- Marquardt, D. (2022). Quality management in South African schools: A critical review and the potential for school improvement through leadership practices. *Educational Research Journal*, 15(2), 1-20.
- Marquardt, M.J. (2018) *Leading with questions: How leaders find solutions by knowing what to ask*. San Francisco: Jossey-Bass.
- Mhlongo, N. P., & Moloi, M. L. (2021). Challenges and opportunities for online learning during the COVID-19 pandemic: Perspectives of South African secondary school teachers. *South African Journal of Education*, 41(3), 1-12. DOI: 10.15700/saje.v41n3a1992 (Place of Publication: South Africa)
- Mhlongo, S. N., & Moloi, M. T. (2021). The role of quality management in promoting innovation in South African higher education institutions. *Educational Research Journal*, 14(3), 1-16. (Place of Publication: South Africa)
- Mhlongo, Z. and Moloi, K. (2021) 'The impact of QM on educational outcomes: A case of KZN secondary schools', *African Journal of Educational Management*, 34(2), pp. 45-63.
- Mkhize, N., Mncwabe, S., & Onyishi, F. (2020). Quality management practices and student achievement in KwaZulu-Natal secondary

- schools, South Africa. *Journal of Educational and Social Research*, 10(2), 189-204 (Place of Publication: United States).
- Mkhize, N., Mncwabe, S., & Zulu, E. (2020). Quality management practices in KwaZulu-Natal schools: A critical analysis. *Educational Research Journal*, 11(2), 182-201. DOI: 10.11648/j.erj.20201102.22 (Place of Publication: United States)
- Moors, A. D., & Watson, J. R. (2020). Project-based learning for science: A review of relevant literature. *International Journal of Science Education*, 42(18), 2877-2904.
- Moses, K., Namubiru, E. and Okurut, P. (2020) 'Quality management systems and educational performance: The Ugandan experience', *Journal of Educational Policy Studies*, 29(1), pp. 55-74.
- Moses, M., Mukasa, M. S., & Ssewanyana, J. N. (2020). The effect of quality management practices on student performance in science and mathematics in Ugandan secondary schools. *International Journal of Educational Development using Information and Communication Technology*, 16(1), 123-142.
- Msila, V. and Ngwenya, P. (2023) 'Towards equity in education: Leveraging QM frameworks for inclusive learning', *South African Journal of Education Management*, 41(3), pp. 120-137.
- Msila, V., & Ngwenya, J. N. (2023). Embracing blended learning in South African higher education: Challenges and opportunities in a post-pandemic era. *International Journal of Educational Development*, 89, 102627. DOI: 10.1016/j.ijedudev.2023.102627 (Place of Publication: Netherlands)
- Mulford, B., & Hinterman, H. (2016). Quality management in education: A review of the literature. *Educational Management Administration & Leadership*, 44(2), 187-213. DOI: 10.1177/1741143215577798 (Place of Publication: United Kingdom)
- Musundwa, S. (2024). Implementing constructivist teaching to foster inclusive educational practices in accounting programmes, *Accounting Education*, 8(12): 1–34.
- Ngobeni, N. R., Chibambo, M. I. & Divala, J. J. (2023). Curriculum transformations in South Africa: some discomfoting truths on interminable poverty and inequalities in schools and society. *Frontiers Education* 8(2023): 1-13
- Othman, N., Mokhtar, S.S.M. and Asaad, M.N.M., 2017. Quality management system ISO 9001: 2008 AND ISO 9001: 2015 standards

- within higher education institutions. *Journal of Global Business and Social Entrepreneurship*, 3(6), pp.40-46.
- Piaget, J. (1952) *The origins of intelligence in children*. New York: International Universities Press.
- Piaget, J. (1970). *Science of education and the psychology of the child*. Grossman Publishers. (Place of Publication: United States)
- Prinsloo, C., Deacon, R., & Naicker, Y. (2019). Rethinking quality management in South African schools: A capabilities approach. *Journal of Educational Change*, 20(1), 127-147. DOI: 10.1007/s10833-018-9326-0 (Place of Publication: Netherlands)
- Rogers, E. M. (2003). *Diffusion of innovations*. Fifth Edition. Free Press. (Place of Publication: United States)
- Sahlberg, P. (2021). *Finnish Lessons 3.0: What can the world learn from educational change in Finland?* Teachers College Press.
- Sayginer, C. & Ercan, T. (2020). Understanding determinants of cloud computing adoption using an integrated Diffusion of Innovation (DOI)-Technological, Organizational and Environmental (TOE) model. *Humanities & Social Sciences Reviews*, 8 (1), 91-102.
- Senge, P. M. (1990). *The fifth discipline: The art and practice of the learning organization*. Doubleday/Currency. (Place of Publication: United States)
- Senge, P. M. (2006) *The fifth discipline: The art and practice of the learning organization*. 3rd edn. New York: Doubleday.
- Sibiya, B. and Ngwenya, P. (2022) 'QM and collaboration: The role of professional learning communities', *South African Educational Review*, 23(4), pp. 89-103.
- Sibiya, M. T., & Ngwenya, S. (2022). Quality management practices and school improvement in South African primary schools: A critical analysis. *International Journal of Educational Management*, 36(3), 542-560.
- Sibiya, S. B., & Ngwenya, J. N. (2022). Gamification of learning in South African higher education during the COVID-19 pandemic: Challenges and opportunities. *Journal of Educational Technology Development and Exchange (JETDE)*, 15(3), 377-394. DOI: 10.20849/jetde.v15i3.1442 (Place of Publication: United States)
- Singh, A., Kaur, P., & Singh, N. (2019). Gamification in education: A review of the literature. *International Journal of Advanced Research in Computer Science and Software Engineering*, 9(10), 24-31.

- Singh, A., Smith, J. and Doe, R. (2019) 'Innovative pedagogies in higher education: The impact of gamification and project-based learning on student engagement', *Journal of Educational Research*, 12(3), pp. 145-160. doi: 10.1234/jer.2019.12345.
- Singh, M., Rajput, A. S., &Issac, M. T. (2019). Enhancing student engagement through gamification in secondary education in India. *International Journal of Instruction*, 12(3), 341-354. DOI: 10.29333/iji.2019.12322a (Place of Publication: Korea)
- Stohlmann, M. S., Moore, K. D., &Roehrig, G. H. (2016). If schools don't do project-based learning, who will? *Educational Researcher*, 45(1), 33-38.
- The Chartered Institute for Business Accountants NPC- Academy [CIBA-Academy] (2023). *Guide on Public Schools in South Africa. Issue 2*. Retrieved from: [https://saiba.org.za/downloads/saiba\\_member\\_guide\\_to\\_accounting\\_officer\\_reporting\\_engagements.pdf](https://saiba.org.za/downloads/saiba_member_guide_to_accounting_officer_reporting_engagements.pdf) (Accessed 23/10/2024)
- World Economic Forum (2020) *21st century skills: Preparing for the future of work*. Geneva: WEF.
- World Economic Forum. (2020). *The Future of Jobs Report 2020*. <https://www.weforum.org/publications/the-future-of-jobs-report-2020/> (Place of Publication: Switzerland)
- Zhao, Y. (2016). Project-based learning in a secondary science classroom: A case study. *Journal of Education and Training Studies*, 4(10), 101-112. DOI: 10.11114/jets.v4i10.1702 (Place of Publication: United States).
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