

# ISRG Journal of Arts, Humanities and Social Sciences (ISRGJAHSS)



**ISRG PUBLISHERS**

Abbreviated Key Title: ISRG J Arts Humanit Soc Sci

**ISSN: 2583-7672 (Online)**

Journal homepage: <https://isrgpublishers.com/isrgjahss>

Volume – II Issue-V (September-October) 2024

Frequency: Bimonthly



## The Role of Professional Development in Implementing Sustainable Development Goal 4 in A – Level Secondary Schools with a Focus of Teachers' Perception in Micheweni, Pemba, Zanzibar

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| **Received:** 29.08.2024 | **Accepted:** 02.09.2024 | **Published:** 07.09.2024

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### Abstract

*This study evaluated the role of professional development in implementing SDG 4 in A – Level secondary schools with a focus of teachers' perception in Micheweni, Pemba, Zanzibar. Utilizing a qualitative approach and case study design, the research targeted a population including teachers' center subject advisers, the teachers' center coordinator, A-Level head teachers, subject teachers, class teachers, and the District Education Officer. A purposive sample of 24 respondents provided diverse insights through semi-structured interviews and document reviews, with data analyzed thematically. The study underscores the transformative impact of teacher capacity-building programs in Micheweni, Pemba-Zanzibar, highlighting significant advancements in educational practices, curriculum modernization, and student performance over the past five years. These programs have aligned teacher development with international standards and SDG 4 objectives, leading to improved national exam results and a stronger focus on STEM education. To sustain and build on these achievements, it is recommended that stakeholders continue to align educational initiatives with global standards while incorporating local needs, strengthen partnerships, increase in-service training, and involve educational leaders more deeply in these programs. Regular curriculum and assessment updates will also be crucial in ensuring ongoing improvement and relevance in the region's education system.*

**Keywords:** Professional Development, Sustainable Development Goal 4 and A – Level Secondary Schools

### 1. INTRODUCTION

Teacher professional development (PD) has become a cornerstone in the global effort to enhance school performance and student

outcomes. In recent years, there has been a growing recognition of the importance of continuous learning and professional practice

improvements for educators, driven by the understanding that high-quality PD opportunities are essential for fostering student achievement (Borko & Potari, 2020). Educational reforms worldwide stress the need for teachers to engage in PD programs that not only expand their knowledge but also refine their teaching practices, ultimately contributing to better student learning outcomes.

In the African context, teachers' professional development has been influenced by a range of historical, cultural, and socio-economic factors. During the colonial era, teacher training was primarily controlled by colonial authorities with the aim of producing educators who served colonial interests. Post-independence, many African nations prioritized expanding access to education and establishing teacher training institutions. However, these efforts often emphasized quantity over quality, resulting in a shortage of well-trained teachers. Recently, there has been a shift towards valuing continuous professional development to enhance teachers' pedagogical skills, subject knowledge, and classroom effectiveness (Mkumbo, 2023).

In Tanzania, the evolution of teachers' professional development reflects the country's commitment to using education as a tool for national development. Early post-independence efforts focused on addressing the shortage of qualified teachers through the establishment of teacher training colleges. Over time, the approach to professional development has evolved to include in-service training, mentorship programs, and curriculum reforms aimed at improving teaching and learning quality (Semali & Kincheloe, 2002).

The historical context of teachers' professional development in Zanzibar is deeply intertwined with the island's unique cultural and political dynamics. Professional development initiatives have gradually expanded to address issues such as gender equality, inclusive education, and curriculum diversification (Khamis, 2019). The Revolutionary Government of Zanzibar (RGoZ) has demonstrated its commitment to the Global Development Agenda 2030, as reflected in development programs like the Zanzibar Strategy for Growth and Reduction of Poverty III (MKUZA III). This commitment is crucial for the success of Sustainable Development Goal 4 (SDG 4), which aims to ensure inclusive and equitable quality education for all (Zanzibar Planning Commission, 2021).

SDG 4, a key component of the United Nations' 2030 Agenda for Sustainable Development, focuses on ensuring inclusive and equitable quality education and promoting lifelong learning opportunities for all. It emphasizes the need for education that is accessible regardless of gender, ethnicity, or socio-economic status, and highlights the importance of foundational learning and advanced skills necessary for success in a rapidly evolving world (UN, 2015). Achieving SDG 4 is essential for sustainable development, as education plays a crucial role in socioeconomic mobility and reducing inequality (UNESCO, 2016). Quality education also fosters gender equality, peace, and environmental sustainability, making it a fundamental aspect of the broader sustainable development agenda (United Nations, 2017).

The Government of Zanzibar has reaffirmed its commitment to the 2030 Agenda for Sustainable Development and its 17 SDGs, with a particular focus on SDG 4's goals of inclusive education and gender equality. This commitment is evident in initiatives like the Zanzibar Education Development Programme II (ZEDP II), which

aims to enhance access, quality, and equity in education through various strategies, including improvements in teacher education and support for inclusive education (Ministry of Education and Vocational Training, Zanzibar, 2017). However, despite these efforts, the quality of teaching, particularly at the A-level, remains a concern. In-service pedagogical support exists but is often unsystematic and underfunded (Zanzibar Planning Commission, 2020).

This article explores the role of professional development in implementing SDG 4 in A-level secondary schools in Micheweni, Pemba, Zanzibar, with a focus on teachers' perceptions. It aims to assess how current PD programs align with SDG 4 objectives and identify areas for improvement to better support educators in achieving high-quality, equitable education for all.

## 2. THEORETICAL UNDERPININGS

This study was guided by Model of Teacher Change. Model of Teacher Change developed by Thomas R. Guskey in the 1980s, is a widely recognized framework in educational research. Guskey (1986) posits that meaningful change in teachers' beliefs and attitudes often occurs after they have observed improvements in their students' learning outcomes. According to Guskey, professional development should first focus on changing teachers' classroom practices, which will then lead to positive student outcomes, eventually influencing teachers' beliefs and attitudes. This sequence (professional development leading to changes in teaching practices, which then results in improved student learning and finally changes in teacher beliefs) is central to the model. One of the strengths of Guskey's model is its practical, evidence-based approach to understanding how professional development impacts teaching practices and student outcomes. By focusing on observable changes in classroom practice and student learning, the model offers a clear pathway for assessing the effectiveness of professional development programs (Guskey, 2002). Additionally, it provides a structured way to think about the sequence of changes that must occur for professional development to be genuinely effective, making it a useful tool for designing and evaluating such programs.

Despite its strengths, Guskey's Model of Teacher Change has some limitations. One of the primary criticisms is that it assumes a linear and somewhat simplistic relationship between professional development, changes in practice, and changes in beliefs. In reality, the process may be more complex, with various factors influencing teachers' willingness to change their practices and beliefs (Desimone, 2009). Furthermore, the model may not fully account for the contextual factors, such as school culture or external pressures, that can affect the implementation of professional development initiatives.

Guskey's model is particularly relevant to your study on the evaluated the role of professional development in implementing SDG 4 in A – Level secondary schools with a focus of teachers' perception in Micheweni, Pemba, Zanzibar. The model provides a theoretical framework for understanding how professional development can lead to the desired outcomes of SDG 4, such as improved teaching practices and enhanced student learning. By applying Guskey's model, your study can examine whether changes in teachers' practices fostered by professional development programs lead to better educational outcomes and how these changes align with the goals of SDG 4. This relevance makes Guskey's model a valuable lens through which to assess the

impact of professional development on achieving sustainable educational improvements.

### 3. METHODOLOGY

In this study, a qualitative research approach was adopted to provide a comprehensive understanding of teacher capacity-building programs and their impact on implementing Sustainable Development Goal 4 (SDG 4) in A-Level education within Micheweni District, Zanzibar. The research utilized a case study design, enabling an in-depth exploration of educational dynamics through multiple data sources, including semi-structured interviews and document reviews. Purposive sampling was employed to select key educational stakeholders, ensuring a diverse and relevant perspective. Data analysis involved thematic analysis to identify patterns and insights. Rigorous validity and reliability measures were implemented, and ethical considerations were thoroughly addressed, including obtaining formal approvals and safeguarding participant confidentiality. This methodology facilitated a nuanced exploration of the research topic, contributing valuable insights to the field of educational development.

### 4. FINDINGS AND DISCUSSION

The study aims to identify the goals and objectives of teacher capacity-building programs conducted in Micheweni Pemba – Zanzibar over the past five years. A deductive coding approach was employed, utilizing predefined categories and frameworks to analyze the data collected. This method will help ensure that the analysis is guided by existing theories and concepts related to educational development and capacity building.

#### 4.1. Curriculum and Educational Program Implementation

##### To implement new curriculum programs (KOICA)

The KOICA curriculum program has been instrumental in modernizing educational practices in the region. As the T.C. subject adviser noted, *“The KOICA program has significantly improved our curriculum, aligning it with international standards.”* This quote indicates that the KOICA program has helped update the local curriculum to be more in line with global best practices and education standards. By bringing the curriculum up to par with international benchmarks, the KOICA initiative has raised the overall quality of education in the area.

##### To implement the international educational programs

International programs have played a vital role in broadening the educational horizons of students in the region. As the A-Level secondary school head teacher observed, *“International programs have exposed our students to global best practices, which is essential for their development.”* This quote indicates that these programs have allowed students to engage with and learn from educational approaches used around the world. Exposure to global best practices equips students with knowledge and skills that are crucial for their growth and success in an increasingly interconnected world.

##### Conversion from art to science for teachers

The shift from art to science teaching has been a challenging but necessary transition for the local education system. As the subject teacher stated, *“Transitioning from art to science has been difficult, but it’s vital for meeting the demand for STEM education.”* This quote indicates that while the shift has not been easy, it is a critical step in ensuring the curriculum is aligned with the growing need

for science, technology, engineering, and mathematics (STEM) skills in the job market and broader society.’

#### 4.1.2. Institutional and Professional Development

##### It relates

Professional development is closely intertwined with the growth and success of educational institutions in the region. As the T.C. coordinator highlights, *“Effective professional development programs are essential for achieving our institutional goals.”* This quote underscores the critical role that ongoing training and skill-building for teachers and staff play in helping educational institutions reach their strategic objectives. By investing in the continuous improvement of their faculty and staff, these institutions are better positioned to deliver high-quality education and drive positive outcomes for their students.

##### National examination result improves

The positive impact of enhanced professional development programs on student examination performance is clearly evident in the region. As the A-Level secondary school head teacher stated, *“We’ve seen a noticeable improvement in national exam results since enhancing our teacher training programs.”* This quote suggests that the institution’s investment in strengthening its teacher development initiatives has directly translated to better outcomes for students on high-stakes national examinations. By equipping educators with the latest knowledge, skills, and teaching methodologies, the school has been able to better prepare its students for academic success.

##### Inclusion of other institutions

Collaborating with other educational institutions has proven to be a valuable strategy for enhancing teacher training programs in the region. As the T.C. subject adviser observed, *“Partnering with other institutions has enriched our training programs and expanded our resources.”* This quote suggests that by forming partnerships with external organizations, the local institution has been able to access a wider range of expertise, best practices, and learning materials to incorporate into its teacher development initiatives. This collaborative approach has helped to enrich and diversify the training offerings, ultimately benefiting the educators.

##### Officers and other leaders should include in all training

Involving educational leaders in teacher training programs is a crucial strategy for ensuring the effective implementation of policies and educational initiatives. As the subject teacher observed, *“Having educational officers involved in training sessions helps align policies with practical teaching needs.”* This quote suggests that by including representatives from the administrative and leadership levels in the training process, the institution is able to better tailor its professional development offerings to the realities and requirements faced by teachers in the classroom. This alignment between policy and practice helps to enhance the relevance and effectiveness of the training programs.

##### Mobilize other institutions in supporting professional development

The statement from the T.C. coordinator highlights the importance of mobilizing institutions to enhance the effectiveness of professional development programs for educators.

The T.C. coordinator’s comment that *“Mobilizing other institutions has been key in providing comprehensive support for our professional development programs”* underscores the value of leveraging external resources and expertise to strengthen the

professional development offerings within the education system. By collaborating with various institutions, such as universities, research centers, or industry partners, educators can access a wider range of specialized knowledge, cutting-edge teaching methodologies, and diverse perspectives. This collaborative approach allows for the development of more comprehensive, well-rounded, and impactful professional development programs that cater to the diverse needs and interests of the teaching staff.

#### 4.1.3. Teacher Development and Support

##### Teachers' advising in teaching

Providing ongoing advising and support to teachers has proven to be a valuable strategy for improving teaching practices in the local education system. As the class teacher commented, "*Ongoing advising has been instrumental in refining my teaching methods.*" This quote suggests that the regular guidance and feedback received from advisers has enabled the teacher to continuously enhance their instructional techniques and approach. By having access to expert advice and tailored recommendations, the teacher has been able to identify areas for improvement and make targeted adjustments to their teaching, ultimately enhancing their effectiveness in the classroom.

##### Tutors' improvement in pedagogy

Investing in the pedagogical development of teachers is a critical component of ensuring effective teaching and learning outcomes in the local education system. As the T.C. coordinator stated, "*Investing in pedagogical training helps our tutors adapt to new teaching strategies and improve student outcomes.*" This quote highlights the importance of equipping educators with the latest pedagogical knowledge and skills, which enables them to continuously adapt their instructional approaches to meet the evolving needs of students. By enhancing their pedagogical competencies, teachers are better positioned to implement innovative teaching strategies that can positively impact student achievement.

##### Increase the number of in-service trainings for teachers

The testimony from the District Education Officer highlights the pressing need for more in-service training opportunities to support the continuous professional development of teachers in the local education system. As the District Education Officer stated, "*Increasing the frequency of in-service training is crucial for keeping teachers updated and improving their skills.*" This quote underscores the importance of providing regular, ongoing training to ensure that educators are equipped with the latest knowledge, pedagogical methods, and skills required to effectively meet the evolving needs of their students. Frequent in-service training helps to keep teachers at the forefront of educational best practices and enables them to continuously enhance their abilities.

##### TIE visits advanced schools every year to mobilize teachers to improve their professional skills

The testimony from the A-Level secondary school head teacher highlights the significant impact that the annual visits by TIE have had on supporting the professional development of teachers. As the A-Level secondary school head teacher stated, "*TIE's visits to our school have been effective in motivating teachers and promoting professional growth.*" This quote suggests that the presence and involvement of the education authority representatives during these visits have had a positive influence on the teachers, serving as a source of motivation and inspiration for their continued growth and improvement.

#### 4.2. Assessing the Content of Teacher Capacity Building Programs in Relation to SDG 4

This assessment examines whether the content of teacher capacity-building programs in Micheweni Pemba – Zanzibar aligns with the objectives of SDG 4. A deductive coding approach will be utilized, focusing on predetermined themes related to quality education, inclusivity, and lifelong learning as outlined in SDG 4. This method ensures that the analysis is systematically grounded in established SDG 4 criteria and educational frameworks.

##### 4.2.1. Future-Oriented Education and Science Education for future life

The statement from the T.C. coordinator and the subject teacher highlights the importance of preparing students for future challenges and equipping them with the necessary skills to thrive in the modern world, going beyond the sole focus on exam performance.

The T.C. coordinator's observation that "*Our teacher capacity building programs emphasize future-oriented education to equip students with skills needed for the modern world*" underscores the strategic approach taken by the education system to ensure that teachers are equipped to deliver a curriculum and teaching methods that are tailored to the evolving demands of the 21st-century workplace and society. By focusing on future-oriented education, the teacher capacity building programs aim to empower educators to develop students' critical thinking, problem-solving, communication, and adaptive skills – competencies that are increasingly valued in the modern, rapidly changing world.

##### Mobilize the science subjects for Advanced level students

The statement from the District Education Officer highlights the importance of strengthening science education for Advanced level students as a key priority, with the aim of preparing them for higher education and careers in STEM (Science, Technology, Engineering, and Mathematics) fields.

The District Education Officer's remark that "*Mobilizing science subjects for Advanced level students ensures they are well-prepared for higher education and careers in STEM fields*" underscores the strategic importance of reinforcing science education at the Advanced level. By prioritizing the learning and mastery of science subjects, the education system is positioning these students for success in their future academic and professional endeavors within STEM-related disciplines. This emphasis on science education equips Advanced level students with the necessary knowledge, skills, and critical thinking abilities to thrive in the increasingly technology-driven and innovation-centric global landscape.

##### To encourage the use of science school hubs

The statement from the class teacher and the T.C. subject adviser highlights the important role that science hubs play in enhancing the practical learning experiences of students and enriching their understanding of scientific concepts.

The class teacher's observation that "*Encouraging students to use science hubs has greatly improved their hands-on learning experiences*" underscores the tangible benefits that these specialized facilities can provide for students. By having access to well-equipped science hubs, students are able to engage in hands-on experimentation, observation, and exploration of scientific principles. This practical, immersive approach to learning helps to solidify their understanding of theoretical concepts, develop

essential laboratory skills, and foster a deeper appreciation for the scientific process.

#### **4.2.2. Curriculum and Assessment**

##### **Curriculum change**

The statements from the District Education Officer highlights the importance of adapting the curriculum to meet current needs and educational advancements, which is essential for maintaining relevance and effectiveness in the education system.

The District Education Officer's comment that "*Regular curriculum changes are necessary to keep pace with educational advancements and societal needs*" underscores the dynamic nature of the educational landscape. As new discoveries, technologies, and societal trends emerge, the curriculum must evolve accordingly to provide students with the knowledge and skills required to thrive in the modern world. Regular curriculum updates ensure that the content and learning experiences remain aligned with the latest developments in various fields, enabling students to acquire the most relevant and up-to-date information and competencies.

##### **Curriculum modification**

The statement from the subject teacher highlights the importance of continuous curriculum modification to address emerging needs and ensure alignment with educational goals and student learning.

The subject teacher's comment that "*Modifying the curriculum as needed ensures that it stays aligned with educational goals and student needs*" underscores the dynamic nature of the educational landscape. As student demographics, learning preferences, and societal demands evolve over time, the curriculum must be adapted accordingly to maintain its relevance and effectiveness. Continuous curriculum modification allows educators to address emerging needs, incorporate new and relevant content, and tailor the learning experience to better meet the changing requirements of students and the educational system as a whole.

##### **Improvement in making assessment tools**

The statements from the T.C. subject adviser emphasize the importance of developing better assessment tools for accurate evaluation and meaningful feedback to guide student learning.

The T.C. subject adviser's remark that "*Improving our assessment tools helps in accurately measuring student progress and performance*" highlights the need for robust and reliable assessment methods. Accurate assessment is crucial for understanding the extent to which students have acquired the desired knowledge, skills, and competencies. By implementing effective assessment tools, educators can gain a more comprehensive and reliable understanding of each student's learning journey, enabling them to identify strengths, weaknesses, and areas for improvement.

##### **Confidence in performing ACSEE Exams**

The testimony from the class teacher highlights the importance of boosting student confidence in preparing for the Advanced Certificate of Secondary Education (ACSEE) exams, as it has a significant impact on their performance and overall exam experience.

The class teacher's observation that "*Building students' confidence in preparing for ACSEE exams has a significant impact on their performance*" underscores the critical role that confidence plays in exam preparation and outcomes. When students feel confident in their knowledge, skills, and ability to tackle the exam, they are

more likely to approach the testing situation with a positive mindset, reduced anxiety, and a greater sense of self-assurance. This confidence can translate into better performance, as students are better able to focus on the task at hand, apply their learning effectively, and demonstrate their true potential.

#### **4.2.3. Student Engagement and Modernization**

##### **Students' inclusion in teaching**

The testimony from the T.C. subject adviser highlights the importance of involving students in their own learning process to enhance engagement and create a more effective learning environment.

The T.C. subject adviser's statement that "*Including students in teaching activities helps them take ownership of their learning and stay more engaged*" underscores the benefits of actively involving students in the teaching and learning process. When students are given opportunities to participate in classroom activities, contribute their ideas, and take an active role in their learning, they are more likely to develop a sense of ownership and investment in their educational journey. This sense of ownership can lead to increased motivation, deeper engagement, and a stronger commitment to their own learning and academic success.

##### **Modernize students**

The testimony from the T.C. coordinator highlights the importance of encouraging student contributions in enhancing the learning process and outcomes.

The T.C. coordinator's statement that "*Encouraging students to actively contribute to their learning process leads to better engagement and understanding*" underscores the benefits of involving students as active participants in their own education. When students are encouraged to voice their ideas, share their perspectives, and engage in meaningful discussions, they become more invested in their learning. This active contribution nurtures a deeper understanding of the subject matter, as students are better able to connect the content to their own experiences and prior knowledge.

##### **To contribute in learning**

The testimony from the T.C. coordinator highlights the importance of encouraging student contributions in enhancing the learning process and outcomes.

The T.C. coordinator's statement that "*Encouraging students to actively contribute to their learning process leads to better engagement and understanding*" underscores the benefits of involving students as active participants in their own education. When students are encouraged to voice their ideas, share their perspectives, and engage in meaningful discussions, they become more invested in their learning. This active contribution nurtures a deeper understanding of the subject matter, as students are better able to connect the content to their own experiences and prior knowledge.

##### **Frequently done**

The class teacher's remark that "*Frequent assessments and activities help keep students on track and support their ongoing development*" underscores the value of regular evaluative and learning-focused activities in the classroom. Frequent assessments, whether formative or summative, provide valuable insights into student learning and progress, enabling teachers to identify areas of strength and weakness and tailor their instructional approaches accordingly. Similarly, engaging students in a variety of

educational activities, such as projects, discussions, and hands-on learning experiences, helps sustain their interest, reinforce their understanding, and foster their continuous academic and personal growth.

### Monitoring and supervising

The testimony from the T.C. subject adviser emphasizes the importance of effective monitoring and supervision for ensuring quality in the education system.

The T.C. subject adviser's statement that "*Regular monitoring and supervision help maintain high teaching standards and address any issues promptly*" highlights the role of these processes in upholding the quality of instruction. Ongoing monitoring and supervision allow education authorities to identify areas where teaching practices may need refinement, provide timely support and guidance to teachers, and address any emerging issues before they escalate. This proactive approach helps maintain consistently high standards of teaching and learning.

### Inspection

The testimony from the District Education Officer clearly highlights the importance of regular inspections for quality assurance in the education system.

The District Education Officer's statement that "*Regular inspections are vital for ensuring that educational standards are upheld and identifying areas for improvement*" underscores the essential role that inspections play in maintaining the quality and effectiveness of educational institutions. Inspections serve as a mechanism to monitor adherence to established standards, identify strengths and weaknesses, and provide valuable insights that can guide targeted interventions and continuous improvement efforts.

## 5. CONCLUSION

The study highlights the significant impact of teacher capacity-building programs in Micheweni, Pemba-Zanzibar, over the past five years. These initiatives have successfully modernized educational practices through the adoption of international programs and curriculum updates, addressed the need for STEM education, and improved national exam results. By aligning teacher development with SDG 4 objectives, fostering student engagement, and implementing regular monitoring, the programs have enhanced educational quality and effectiveness. However, continuous improvement and strategic focus remain essential for sustaining and advancing these positive outcomes in the region.

## RECOMMENDATIONS

To further enhance the effectiveness of teacher capacity-building programs in Micheweni, Pemba-Zanzibar, it is recommended that stakeholders continue to emphasize alignment with international educational standards while integrating local needs and contexts. Strengthening partnerships with external institutions can provide additional resources and expertise, while increasing the frequency and scope of in-service training will ensure that educators remain at the forefront of pedagogical advancements. Additionally, fostering greater involvement of educational leaders in training sessions and focusing on future-oriented education will better prepare students for global challenges. Regular evaluations and updates to curriculum and assessment tools will maintain relevance and effectiveness, ultimately supporting continuous improvement in educational outcomes.

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