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Civil Technology teachers' experience in facilitating guided practice and practical skills curriculum

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Abstract
The effectiveness of facilitating the practical skills curriculum depends on how teachers interpret, implement and manage the practical learning components. This is due to the fact that practical learning requires active participation, guided practice and clear demonstration, all of which are molded by the teacher's instructional decisions and classroom management. This study explores the experiences of Civil Technology teachers in facilitating the practical skills curriculum within the schools of specialization in Tshwane West Districts. Using a qualitative research approach, data were collected through semi-structured interviews and open-ended questions in order to gain insight into teachers' pedagogical practices and challenges. The findings reveal that while Civil Technology teachers recognize the importance of practical skills in enhancing learner understanding and employability, they face several challenges. Among such challenges include outdated machines, overcrowding, limited time and insufficient equipment to integrating ICT in the subject. Despite these challenges, many teachers demonstrate adaptability by employing innovative strategies to ensure effective skills transfer. Ultimate, in order to prepare learners for technical careers and match Civil Technology education with industry expectations, it is essential to improve teachers' ability to enable practical skills.

Key words: Civil Technology, practical skills, teachers' experiences, challenges, curriculum, industry.

Introduction

The effective enactment of practical skills within the field of Civil Technology education plays a critical role in preparing learners for future careers and meeting the industry demands. In the South African Further Education and Training (FET) phase, Civil Technology is a specialised Technology subject focusing on the concepts and principles in the built environment and on the technological process (Ngakane, 2023). It further requires teachers and learners to be able to use hand tools in the workshop and operate the machines. However, the successful implementation of the practical skills curriculum mostly depends on the experiences, knowledge and conditions surrounding teaching and learning (Gouëdard, Pont, Hyttinen & Huang, 2020).

Hence, Civil Technology teachers are expected to facilitate practical lessons that require specialized tools, well-equipped workshops, sufficient time and ongoing professional development. Despite these expectations, a lot of teachers face challenges related to limited resources, overcrowded classrooms,

insufficient training and safety circumstances that can make it difficult to implement the curriculum effectively. (Msimango, Mtshali, & Khoza, 2024; Buabeng & Amo-Darko, 2025). To overcome these challenges and ensure learner participation and skill development, teachers simultaneously rely on their professional experiences, improvisation strategies, and pedagogical knowledge (Adeoye, Prastikawati & Abimbowo, 2024). Understanding the experiences and challenges faced by Civil Technology teachers in enacting the practical skills curriculum is therefore essential for informing curriculum implementation, teacher development programmes, and policy decisions. Furthermore, in order to improve support structures and delivering effective practical skills in Civil Technology field, this article examines these experiences faced by the Civil Technology teachers.

Research Objectives

This study is guided by the following research objective:

1. To investigate factors that affect effectiveness of implementation for practical skills curriculum.
2. To establish how Civil Technology teachers experience and facilitate guided practice in the practical classroom.

Literature Review

Practical Skills Curriculum in Civil Technology

According to the Department of Basic Education [DBE] (2011), the practical skills curriculum emphasises experiential learning, learner participation and the application of theoretical knowledge in workshop-based activities. Effective implementation of this curriculum is essential for developing learners' competence, employability and preparedness for further education or training. Mokhothu (2022) argue that practical subjects such as Civil Technology require teaching approaches that priorities hands-on learning, demonstration and guided practice. Teachers are therefore expected to act as facilitators who support learners through structured demonstrations, continuous feedback, and reflective activities (Gautam & Agarwal, 2023). However, the success of such facilitation is highly dependent on contextual factors within schools.

According to Akunda (2024) practical assessments in Civil Technology play a significant role in influencing the development of learners' practical skills by providing opportunities for learners to demonstrate their ability to apply technical knowledge to solve real-world problems. As the contemporary industrial revolution is still unfolding, industry sectors require learners who can innovate, adapt and solve the complex problems that come with 4IR (Oke & Fernandes, 2020). Mtshali (2020) further argues that educational institutions need to stay up to date with these advancements as industries integrate more technologies into their operations. Therefore, integrating practical assessments into the Civil Technology curriculum is essential for developing learners' critical thinking, problem-solving, and technical competencies required in modern construction and engineering contexts.

The link of the practical skills curriculum should be structured such that learners work on projects whose outcome can be sold to companies and can resolve infrastructural issues in the local communities (Gardner, Hickmott & Ludvik, 2023). In China, practical skills training has been identified as a key mechanism for integrating hands-on competencies with industrial needs, thereby bridging the gap between school graduates and workplace expectations (lLiang, Xu, Hsu & Liu, 2025). Supporting this view, Ling and Gao (2025) found that the incorporation of practical skills curriculum with modern tools like Computer-aided Design (CAD), drones and BIM has enabled the learners to enhance their digital construction competencies. Similarly, Xiaa, Xiaolingb, Chengjiec, Luyued, Zhaojune and Naf (2022) reported that the integration of digital tools into practical experiments has enhanced the learners' capacity to collaborate, innovate and adapt to the changing requirements of the construction sectors. Therefore, the South African education system should prioritise the integration of contemporary digital tools and industry-aligned practical projects within the Civil Technology curriculum to ensure that learners acquire relevant technical,

digital and problem-solving competencies that align with both national developmental goals and global industry demands.

Teachers' experiences in facilitating practical skills

Kim and Ko (2020) indicate that teachers' professional experiences, content knowledge and pedagogical skills play a significant role in how the practical skills curriculum is enacted. Likewise, Msimango, Mtshali and Khoza (2024) proclaim that experienced Civil Technology teachers often rely on their industry exposure and teaching experience to adapt lessons, scaffold learning, and improvise when ideal conditions are not available. This emphasizes the importance of collaborating with the industries and providing continuous professional development for teachers to enact the practical skills curriculum effectively. Furthermore, a study by Neves, Lima and Mesquita (2021) have shown that teachers who are confident in their practical competencies are more likely to engage learners actively and create meaningful learning experiences. However, this cannot be achieved without the access of basic resources, supportive school management and opportunities for professional development. Therefore, it is essential for the Department of Basic Education (DBE) to invest in infrastructure, teacher training and prioritise the provision of adequate resources to the workshops for practical teachers (Govender, 2023). This will also enable the Civil Technology teachers to improve the quality and consistency of delivering effective practical skills that aligns with contemporary industry and 4IR demands.

Teaching practical skills effectively requires various teaching techniques that can enable theoretical content to be integrated into practice. Amiri (2025) asserted that the effective teaching of practical skills goes beyond the practical demonstration and project-based learning due to its integration of modern technologies like digital modelling, simulation tools and collaboration platforms that mirror the real-world industry practices. With the emerging of these technologies, Civil Technology teachers are required to develop real-world problem-solving, critical-thinking and technical skills that they can immediately transferred into their learners. A study by Abedi (2024) revealed that teachers' experiences in facilitating practical skills is shaped by their pedagogical competence, access to material, technological resources and opportunities for continuous professional development. Consequently, these influence how effectively they can integrate theory into practice skills development tasks. Overall, these findings underscore the importance of equipping Civil Technology teachers with appropriate pedagogical tasks.

In the context of Civil Technology education in South Africa, most teachers are still using traditional teaching methods despite the increasing emphasis on innovative pedagogical approaches and the integration of digital technologies in the curriculum (Abildinova, Abdykerimova, Assainova, Mukhtarkyzy and Abykenova, 2024). Traditional methods, which are often teacher-centred and focused on theoretical instruction, limit opportunities for learners to engage in authentic hands-on activities that reflect real-world industry practices. As a result, learners may struggle to connect theoretical concepts with practical applications, which is essential for developing technical, critical-thinking and problem-solving skills needed in the Fourth Industrial Revolution (Ilori & Ajagunna, 2020). This indicates that Civil Technology educations need a pedagogical shift towards more learner-centred, technologically enhanced and practice-oriented teaching approaches. Furthermore, this local literature emphasises the urgent need to prepare learners with the practical skills aligning with the modern digital tools and industrial realities.

Challenges in facilitating the Practical Skills Curriculum

Despite the importance of practical skills, several studies highlight persistent challenges faced by Civil Technology teachers. One of the most frequently cited challenges is the lack of adequate resources, including tools, machinery, consumable materials, and well-equipped workshops (Medugu, Zakari & Ibrahim, 2023). Kovalchuk, Maslich, Tkachenko, Shevchuk and Shchypska (2022), added that some of the key challenges facing the development of practical skills include professional difficulties, the gap between skills held by market demands and lack of training facilities. As a result, Edokpolor (2022) proclaims that teachers focus more on the theoretical instruction because of insufficient resources to facilitate the practical activities effectively. Resource shortages limit the extent to which teachers can implement curriculum

requirements as intended and often result in reduced learner participation or reliance on demonstrations rather than hands-on practice.

The findings from the study by Mutohhari, Sutiman, Nurtanto, Kholifah and Samsudin (2021) outlined those teachers of practical skills still found it difficult to apply the 21st-century skills such as creativity, critical thinking, problem-solving, collaboration and digital literacy due to a lack of resources and competencies. Likewise, Mhlanga, Khoza and Skosana (2023) added that the shortage of materials, tools and equipment is one of the main issues that affects the effectiveness of the practical skills curriculum. Therefore, these findings highlighted that 21st-century learning is impeded by various challenges that have limited it from achieving its fullest potential. Furthermore, Mobara (2018) examined the problems faced by technology teachers. Concern was raised by the participants over inadequate material required for the execution and completion of PAT. According to the participants, their classrooms lacked the necessary tools and equipment to teach the technology subject. Also, lack of space for physical work and project presentation disadvantaged both the technology teachers and learners in progressing to the practical assessment task. This study raises concerns about how teaching and learning methods may be impacted by the lack of resources and infrastructure.

A study by Mtshali and Msimango (2023) found that most of Construction Civil Technology teachers lack basic workplace skills as well as the ability to maintain effective teaching when conducting simulations. This is due to poorly made artifacts and a failure to use all available tools and equipment. Correspondingly, the lack of maintenance for workshop machines makes it difficult for practical teachers to facilitate meaningful practical activities and ensure the effective implementation of the practical skills curriculum (Iyamuremye, Nsabayez, Ngendabanga & Hagenimana, 2023). This situation poses significant safety risks in workshops, as poorly maintained machines may fail to meet occupational health and safety standard. While teachers demonstrate these challenges that such as poorly maintenance of machines and limited professional support continue to affect curriculum implementation. Understanding teachers' experiences and challenges is therefore crucial for informing policy, improving teacher training programmes and strengthening support structures for Civil Technology education.

Methodology

Research Design

This study adopted a qualitative research approach to explore the experiences of Civil Technology teachers in facilitating the practical skills curriculum. A qualitative approach was deemed appropriate as it allows for an in-depth understanding of participants' perspectives, experiences and meanings they attach to their teaching practices within their natural school contexts. An exploratory case study design was also employed to carry this study. According to Yin (2014), an exploratory case study is a research design used to examine a topic or issue that is inadequately defined or comprehended, particularly when limited information is available. This case study was chosen because it enabled the researcher to gain a deeper understanding of the phenomenon that is being investigated or explored. It also assisted in the enduring issues confronting Civil Technology teachers in practical workshops. Furthermore, the study was conducted in eleven (11) selected school of specialization offering Civil Technology around Tshwane Metropolitan. These schools were chosen because they implement the Civil Technology curriculum and provide practical workshop facilities, despite having varying levels of resources. The participants comprised Grade 11 Civil Technology teachers who were purposively selected based on their direct involvement in teaching the practical skills curriculum. Purposive sampling was used to ensure that participants had relevant experience and knowledge necessary to address the research objectives. Teachers who were not teaching Grade 11 Civil Technology at the time of the study were purposively excluded.

Instrumentation

Data were collected using semi-structured interviews and open-ended questioner. These methods allowed participants to express their experiences and challenges in facilitating guided practice and practical skills, while also providing the researcher with flexibility to probe for clarity and depth. Each interview session

lasted approximately 30 to 45 minutes. The interviews session was done on the participants free time period or on during after school hours. Furthermore, the interviews were conducted at times convenient for the participants, such as during free periods or after school hours

Data analysis

The collected data were analyzed using thematic analysis. According to Ahmed, Mohammed, Nashwan, Ibrahim, Abdalla, Ameen and Khdhir (2025), thematic analysis provides a theoretically adaptable and accessible methodology, suitable for researchers seeking to discern patterns of meaning without being limited by particular epistemological convictions. Interview transcripts were carefully read and coded to identify recurring patterns and themes related to teachers' experiences and challenges. To make sure that the results appropriately reflected the opinions of the participants, themes were created through an iterative process of comparison and improvement. To ensure trustworthiness, the study applied the criteria of credibility, dependability, confirmability, and transferability. Credibility was enhanced through data triangulation and member checking, while dependability was ensured by maintaining a clear audit trail of the research process. Thick descriptions of the context and participants were provided to support transferability.

Results and discussion

Analysis of Demographic Variables

Table 1.

Demographic Variables (N = 11)

Demographic variable		Responses	Percent (%)
Gender	Female	05	45.4
	Male	06	54.5
Age (yrs)	20-30	03	27.3
	31-40	05	45.5
	Above 40	03	27.3
Educational level	Diploma	01	9.1
	Bachelor's degree	04	36.4
	Honours degree	05	45.4
	Master's degree	01	9.1
Grade level taught	Secondary school	11	100

The demographic characteristics of the participants are presented in the table above. A total of 11 participants took part in the study, comprising 6 males (54.5%) and 5 females (45.4%). This indicates a slightly higher representation of males; however, both genders are fairly well represented, allowing for balanced perspectives. In terms of age distribution, the majority of participants were between 31 to 40 years old (45,5%). Participants aged 20 to 30 years and those above 40 years were equally represented, each accounting for 27.3% of the sample. This suggests that most respondents are in their mid-career stage, with a reasonable spread across younger and older age groups. Regarding educational qualifications, most participants held a bachelor's degree (45.5%), followed by those with honours degrees (36.4%). Only a small proportion of participants (9.1%) had a diploma or a master's degree. This indicates that the sample is largely composed of well-educated individuals, which may contribute to informed and reliable responses in the study. Overall, the findings show that the study sample is moderately balanced in terms of gender, predominantly composed of individuals aged 31 to 40 years, and largely consists of participants with higher education qualifications.

As previously stated, the study utilized semi-structured interviews and open-ended questions as systematic data collection methods. Then it employed thematic analysis to assist in uncovering the recurring

themes that emerged when evaluating the Civil Technology teachers' responses. Therefore, the three significant themes were discovered as follows.

- The use of existing machinery.
- The integration of Information and Communication Technology (ICT) in Civil Technology.
- The implementation and interpretation of practical skills curriculum

Theme 1: The use of existing machinery

According to Kaasinen, Schmalfuß, Özturk, Aromaa, Boubekeur, Heilala and Walter (2020), the use of machines in the workshop can facilitate the practical work by minimizing the effort required or creating possible tasks that would be difficult to achieve. This emphasises that the use of existing machines in a practical lesson must be well taken care of in order to ensure their lasting durability. Furthermore, Brauer (2022) stated that it is crucial to maintain a safe working environment when using machines in a workshop, due to the fact that they frequently contain hazards not typically seen in homes or office environments. Nevertheless, the researcher extracted that most of the teachers had a problem with the use of existing machines in the practical workshop. To begin with, Teacher C revealed that the existing machines in his workshop are lacking proper maintenance. Teacher C said, "Most of the machines in these workshops lack maintenance services, since they are not being serviced regularly. This sometimes makes it difficult for the practical lessons to run smoothly and effectively. Where this issue can also lead to unnecessary injuries that were going to be prevented if the machines were serviced regularly, and a waste of time for the practical lesson." Likewise, Teacher E also added that "The current machines that we are using are quite old, but they are still useful for teaching the basic operations. However, there will be sticking or slowing down when the learners are using them that they are outdated and hardly serviced." Taken together, what Teacher C and Teacher E said about the condition of machines in their workshops implies that poor upkeep and outdated machines pose a serious challenge to the smooth and effective running of the practical lessons. According to Salawu, Awoyemi, Akerekan, Afolalu, Kayode, Ongbali and Edun (2023), there is an interest in the frequency of malfunctions and the reasons behind the unexpected failures that machines encounter, which can lead to increased expenses and decreased production. Similarly, due to the high expense of replacing parts and equipment maintenance, some fraction of organisations views it as unnecessary consumption (Patel, 2021; Nyemba, Mashamba & Mbohwa, 2017). This may emphasise that the matter of maintaining machines properly is deliberately ignored due to saving costs. However, these can hinder the ability of learners to practice the modern skills requirements of the industries in the workshops.

Furthermore, the study found that the Civil Technology teachers also encountered the challenge of overcrowding in the practical lessons. This was reflected in Teacher B's remarks, where he stated that "We have many learners who are using those machines, and sometimes the machine would be overloaded by the work and break down. Thus, this can affect the skills that should be equipped to the learners with the full experience required by the modern industrial standards." Similarly, to what Teacher B alluded to, Teacher H added that "The existing machines are functional, but they are not adequate for a large group of learners. Since the learners would overcrowd the machine during the demonstration phase, some of the learners were not fully exposed to practice." From both Teacher B's and Teacher H's remarks, it is evident that the issue of overcrowding can jeopardise the effectiveness of the learners to participate in the practical session. Therefore, this as a result can restrict learners from being fully effective in their practical classes. Thus, Vakili, Vakili, Ajilian Abbasi, and Masoudi (2024) mentioned that an overcrowded environment creates a stressful condition that may have a major impact on teaching and learning due to insufficient space and resources. Likewise, Chatigny (2022) stated that with too many learners in a workshop, it may be challenging for teachers to provide individual assessment and enforce safe working conditions for all of the learners. This may imply that the setup of the practical lessons needs to be enhanced through adjusting accessibility for the learners and ensuring that every learner has fair access to experiential learning.

Theme 2: The integration of ICT in Civil Technology

According to Singh (2021), ICT is inescapable and essential to playing a meaningful role in changing and modernising educational systems as well as the way of learning. The use of ICT in civil engineering and especially structural engineering has drawn more attention in recent years (Oluwafemi, Ede, Ofuyatan, Oyebisi & Bankole, 2021). Due to modern technologies that make it easier to design structures, buildings, bridges and roads in three dimensions, ICT can be used in civil engineering education in a variety of ways, such as through the use of constructive structural models and simulations (Akıllı, Konoplianyk & Pryshupa, 2019). According to Gallardo, Gustavo and Nelson (2023), this assists the learners in understanding how the different components of work interact with one another. Therefore, it shows that the integration of ICT in the Civil Technology subject can also have a major impact on preparing these learners for the engineering field. Hence, this study asked the Civil Technology teachers to share their views about the use of ICT in Civil Technology. Teacher B began by saying that "I usually use the ICT in preparing my PowerPoint slides that I would present on a smartboard. This is helpful, since it allows me to include videos of 3D models that would have been difficult to explain and also allows the learners to visualise structures before they are built." In agreement with what Teacher B said, Teacher J also pointed out that "The use of ICT is making the learning more interactive. It is integrating our knowledge through the use of computers, where it is enhancing the skill for doing things digitally, like using PowerPoint presentations, Excel and QuestionPro". Also, Teacher G added that "The use of ICT is no longer optional in Civil Technology but a need. As the industry requires the learners to graduate with digital literacy, we as teachers have a major role to play to improve our ICT skills in order to stay current and prepare learners for future careers like civil engineering". Collectively, these remarks reveal that the Civil Technology teachers recognise the significance of using ICT in the Civil Technology field. Correspondingly, a study by Chisango, Marongwe, Mtsi and Matyedi (2020) found that the teachers are prepared to incorporate ICTs into teaching and learning and had a positive attitude toward technology adoption. Thus, the South African government has recognised the value of developing ICT skills and intends to implement appropriate ICT policies that can boost the nation's economy and increase the employability of young people (Alao & Brink, 2022). Therefore, the Civil Technology teachers with these attitudes and perceptions would contribute greatly to supporting the government's vision by equipping learners with ICT skills required in the future of work and economic growth.

However, the lack of resources in other schools emerged as a disadvantage to the full implementation of ICT in the Civil Technology subject. This challenge is echoed in Teacher A's perspective, as he discussed his experiences using ICT in his school. Teacher A explained that "We do not normally use the ICT in our school, since it is not yet resourced. As we are still using old methods of teaching like chalkboards and books, this limits the full integration of ICT. This is also a disadvantage for the learners, because the Fourth Industrial Revolution requires the skills that come with the use of ICT." This was supported by Teacher E, who stated that "We have not yet been fully exposed to the use of ICT in the Civil Technology. While learners continue to engage primarily in manual, hands-on activities, there is a need to introduce instruction in AutoCAD, robotic systems, and the use of drones. Integrating these technologies would better support the development of skills required for the Fourth Industrial Revolution (4IR)." As teacher A and E emphasize that they are not yet fully exposed to the use of ICT in their school. It is revealing that some of the Civil Technology teachers are disadvantaged by the lack of advanced technologies that are taking impact in these modern times. As Frank and James (2024) pointed out, physical resources like computers, tablets and dependable internet connectivity are still lacking in many classrooms. Thus, a study by Shafaq, Zeng, Pathan, Latif and Shaheen (2018) found that high school teachers were aware of the benefits of using ICT in the classroom, but they were unable to implement it because of a lack of resources. Furthermore, teachers A and E also showed understanding of the skills requirements of 4IR that are subject to a lack of resources. This suggests that the Civil Technology teachers are consciously aware of the skills necessitated by the 4IR. However, a lack of relevant tools and resources may be hindering their ability to prepare learners for the demands of the modern industrial revolution.

Theme 3: Interpretation and implementation of the Practical Skills Curriculum

The interpretation and implementation of the practical skills curriculum in Civil Technology have been widely examined in educational research, especially in the field of technical education. This is due to that Civil Technology subject is expected to produce learners with adequate skills that are required by industries, therefore researchers examine whether the curriculum is achieving this purpose in practice. A study by (Campbell-Phillips, 2020). highlighted that while curriculum is intended to promote practical learning, their effective implementation primarily rely on teachers' understanding, context, and available resources. Hence, this study asked the Civil Technology teachers to share their knowledge on implementation and interpretation of the practical skills curriculum. During the interviews the researchers found that most of the teachers understand the interpretation of the practical skills curriculum, but experience some challenges when implementing it. This was evident in the response of Teacher C, when he articulated that "I see the practical skills curriculum they are very important, especially since they prepare learners for real-life situations beyond the classroom, but they are difficult to implement as it is intended. For example, the guidelines are usually provided, although they are often unclear about how to carry out the actual tasks step by step, so I end up using my own techniques." Also, Teachers G shared a similar insight when he was asked the same question while pointing out concern about the lack of clarity and structure. Teacher G remarked "I try to interpret the curriculum in a flexible way that I can, but to implement it to the learners is usually difficult due to that the instructions are too general, and I'm not always sure if I'm doing the practical work the way it is expected. Furthermore, also Teacher D added that the lack of resources makes it hard to implement the practical skills curriculum to the classroom. Teacher D said "I can read and interpret the practical skills curriculum very well on paper, but the lack of resources makes it difficult to achieve the intended outcomes." By drawing from the responses of the three teachers above, it was evident that Civil Technology teachers were able to interpret the practical skills curriculum, but insufficient guidance and lack of resources limited its effectiveness to be fully implemented. Similarly, a study by Fasinro, Akinkuotu and Aina (2024) points out that although many teachers are confident in their knowledge of the subject that they are teaching, they often struggle to implement the curriculum effectively due to limited resources and insufficient training on the use of it. As a result, this breakout often leads teachers to rely more on traditional classroom teaching methods.

Furthermore, the teachers' complained about the time that is given to execute the practical activities that is not enough. To begin with Teacher B explained that "honestly, the curriculum expects a lot from both teachers and learners, especially in terms of practical work. However, the challenge it comes when implementing it due to the amount of time that is needed to carry out practical lessons is not enough. In line with this, Teacher G shared a similar response in which she stated that, "the practical skills curriculum is well articulated from the Practical Assessment Task (PAT), but the implementation is challenging because learners need more time to practice than what is allocated in the timetable." In additional, Teacher E alluded that "when it comes to implementation the practical skills curriculum, I usually struggle because of time constraints and necessity to complete the syllabus. Hence, I end up spending more time on theory content. From the experiences shared by Civil Technology teachers interviewed, it is evident that time constrains is a challenge that limits the teachers to implement the practical skills curriculum effectively. These findings are not different from Buabeng and Amo-Darko (2025) study, which highlighted that teachers encounter challenges in accomplishing the intended purpose of the curriculum, due to the issue of inadequate time and overburdened of syllabus. Correspondingly, Jonker, März, and Voogt (2020) stated that may teachers often find it difficult to implement practical components of the curriculum due to time limits given on their timetable. Overall, these findings imply that while the teachers of practical skills have good intentions, time constraints and curriculum overload seriously impede them to full implement the practical skills curriculum effectively. Therefore, there is a need for curriculum planners and policymakers to reconsider time allocation and reduce content demands to ensure effective teaching and meaningful learner engagement.

Conclusions

This study explored the experiences and challenges of Civil Technology teachers in enacting the practical skills curriculum. The findings indicate that Civil technology teachers experiences significant challenges when facilitating this practical skills curriculum. These challenges include the use of old machines, overcrowding, inadequate time and limited opportunities for integrating ICT in the subject. Such constraints often result in reducing learner participation and necessitate curriculum adaptations that may compromise the intended depth of practical skill development. Moreover, the study found that teachers had adopted many creative and adaptive teaching strategies to ensure that practical learning continues. However, the lack of necessary support and adequate resources jeopardise their efforts. Ultimately, the effectiveness of guided practice in Civil technology depends on adequate resources, continuous professional development and a curriculum that meaningfully integrates practical skills with conceptual understanding. By strengthening these areas, teachers can enhance the quality of teaching and better prepare learners for industry demands.

Recommendations

This study recommends that Civil Technology teachers must be provided with professional development programmes that will equip them with the necessary technical and pedagogical competencies. The Department of Basic education (DBE) must also invest strongly on workshop facilities and provide relevant equipment and tools, to ensure the effective delivery of the practical skills curriculum. Furthermore, the study suggests that the school leadership should support timetable flexibility for practical subjects and encourage partnerships with industries, so that teachers can remain effective and stay updated with current construction methods and tools.

Implications for effective of Civil Technology practical skills curriculum

A successful practical skills curriculum should emphasize experiential learning, so that it can enable learners to develop practical competencies such as construction methods, material handling and the use of tools and equipment. It must also be in line with the latest technical developments and requirements standards of the industry to ensure that learners are prepared for the workforce. In additionally, continuous assessment and feedback help learners refine their skills, while partnerships with industry can increase relevance and expose learners to real-world work environments. Therefore, all of this relies on developing and providing teachers with ongoing professional development, adequate resources and updated curriculum that reflect current industry practices. Ultimately, to assist learners in implementing effective skills in a real-world context, teachers must possess both solid theoretical knowledge and practical experience.

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