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Evaluating the GET electrical technology syllabus for transition into FET specialisations in Gauteng Technical Schools

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ABSTRACT

This study examined the General Education and Training (GET) syllabus of Electrical Technology to determine its effectiveness in preparing learners for progression into Further Education and Training (FET) specialisations in Gauteng technical schools. The problem this research addresses is the persistent misalignment between the foundational competencies developed in the GET phase and the advanced technical expectations of the FET phase, leaving learners underprepared for specialisation. The purpose of the study was to explore how the GET curriculum supports or fails to support smooth curriculum transition in Electrical Technology. A qualitative case study design was employed, using document analysis and semi-structured interviews with eleven experienced teachers in Gauteng Province, South Africa. The findings revealed that the GET curriculum is mostly theoretical, with limited practical scaffolding and weak sequencing of advanced topics such as Three-phase motors and Transformers. Teachers noted repeatedly re-teaching basic concepts at the FET level, which created time pressures and contributed to learner frustration. The study concludes that improving vertical curriculum alignment through stronger practical integration and clearer teacher support mechanisms can enhance learner readiness, curriculum coherence and the overall quality of Vocational Education (VOC) in South Africa.

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INTRODUCTION

The transition from General Education and Training (GET) to Further Education and Training (FET) in South Africa's technical schools represents a critical juncture in a learner's educational pathway. Within the subject of Electrical Technology, this transition covers Grades 8-9 through Grades 10-12, where learners progress from general foundational exposure to specialised areas such as Digital Systems, Electronics, and Electrical Power Systems (Andreassen & Kjelaas, 2025). The GET phase is intended to equip learners with both theoretical grounding and fundamental practical awareness (Elliott & Higgins, 2023). However, evidence indicates that many learners enter the FET phase without the depth or coherence to engage effectively with advanced content, thereby weakening their preparation for both higher education and industrial application (Carlsson & Willermark, 2025). This challenge points to a broader and persistent concern. The GET curriculum

fails to provide a strong conceptual and practical foundation for the demands of specialisation, leaving learners unprepared for the FET phase of Electrical Technology specialisations.

In the South African context, this gap between foundational preparation and advanced technical learning has significant implications for employability, skills development and the strength of vocational pathways in South Africa and globally. Emphasises that Technical Education plays a pivotal role in addressing the dual challenges of youth unemployment and the shortage of skilled artisans (Yeboah, 2024). Nevertheless, many learners arrive in FET classrooms ill-equipped to meet curriculum expectations due to misalignment between the GET and FET syllabi and inconsistent teaching practices. For international readers, it is important to note that South African learners can enter vocational pathways as early as lower secondary school (Ndimbira, 2024), unlike many European systems where Vocational Education (VOC) typically begins at upper-secondary level. Consequently, weaknesses within the GET phase have direct implications for both school-to-work transitions and progression into higher-level vocational studies (Marczuk, 2021).

This raises the central concern of the study: whether the GET syllabus equips learners with sufficient knowledge and practical competencies to meet the academic and technical demands of the FET phase. Curriculum coherence is widely acknowledged as a cornerstone of effective vocational education. International studies underline that alignment between foundational and advanced stages enhances learner progression, confidence, and employability (Bolton, 2022; Young & Hordern, 2022). In the South African context, similar concerns have been identified in subjects such as Mathematics, where discrepancies between curriculum policy and assessment practices hindered quality learning (Bertram et al., 2021). These findings suggest that Electrical Technology may face parallel challenges, as the subject's technical nature requires systematic progression and applied understanding (Gumede, 2023). Without a coherent bridge from GET to FET, learners risk developing fragmented conceptual knowledge that limits their capacity to handle complex electrical systems. As a result, assessing teachers' perceptions of curricular progression and alignment is critical for understanding the structural weaknesses that influence learning continuity and subject discipline readiness.

Recent reforms in South Africa have sought to address such systemic challenges. The introduction of the Three-Stream Model aims to strengthen vocational pathways by integrating occupational subjects in Grades 8-9 (Western Cape Education Department, 2021). Similarly, national collaborations between the Department of Basic Education (DBE) and the Department of Higher Education and Training (DHET) have focused on aligning school curricula with post-school expectations (Branson & Whitelaw, 2025). Although promising, these reforms remain largely policy-driven, with limited empirical evidence regarding how the GET Electrical Technology syllabus specifically supports learners' readiness for FET specialisation. Few studies have investigated the extent to which the syllabus content, pedagogical orientation, and progression mechanisms prepare learners for advanced technical study. This lack of evidence illustrates a clear scholarly gap. It reinforces the need for a subject-specific evaluation of how the GET phase contributes to or hinders learner preparation for Electrical Technology FET pathways or subject specialisations such as Power Systems, Electronics, and Digital Electronics.

Beyond curriculum structure, teacher capacity and pedagogical practices play a critical role in determining the effectiveness of this transition. Studies show that many Technical and Vocational Education and Training (TVET) teachers possess limited pedagogical training and minimal exposure to current industrial practices (Ogbuanya & Shodipe, 2022). This lack of professional preparation undermines teachers' ability to facilitate effective, practice-oriented learning, particularly in technically demanding subjects like Electrical Technology (Msimango et al., 2024). Furthermore, resource constraints and exam-oriented approaches often deprioritise hands-on instruction, reducing learners' opportunities to engage meaningfully with practical applications (Mahajan, 2025). These contextual challenges raise critical questions about how the GET curriculum functions within real classroom environments and how effectively it prepares learners for the expectations of the FET phase. Empirical evidence on this issue remains limited, particularly concerning teachers' perceptions of curriculum coherence, skill progression, and content alignment across phases. The

existing literature has not yet provided a comprehensive understanding of how the GET syllabus bridges theoretical and practical learning for FET readiness (Ntholeng, 2024).

In South Africa, numerous studies have raised comparable concerns about how technical subjects are aligned throughout different phases. Khethwa (2020) discovered that, even with curricular revisions, many learners in technical schools struggle to connect basic concepts from lower grades to practical work in FET workshops. Chumchuen & Akatimagool (2023) also found that learners pursuing Electrical Technology specialisations frequently lack basic thinking and problem-solving skills, highlighting the gap between theory and practice. Coherently, these studies support international findings but highlight a local issue: an unequal implementation of technical disciplines across schools. Rural and township schools, in particular, have a shortage of skilled teachers and limited resources (Mncube et al., 2023). These gaps weaken the intended bridge between general and specialised learning, showing that the issue lies not only in curriculum design but also in everyday classroom practice.

Comparable case studies in the South African context back up this concern. Msezane (2020) pointed out that Electrical Technology teachers in KwaZulu-Natal regularly modify the GET syllabus to help learners meet FET requirements as prescribed in the CAPS documents of various subjects. This demonstrates a lack of planned progression between consecutive phases. Discovered in Gauteng Schools of Specialisation that, while early exposure to technical topics benefits learners, insufficient continuity between GET and FET results in fragmented learning (Motloung, 2025). These local findings align with a larger national issue: linking Vocational Education (VOC) to post-secondary and industry expectations. Strengthening the conceptual and practical link between the two phases is therefore critical if learners are to develop the skills and confidence required in South Africa's expanding technical and energy sectors. Hence, this study evaluated the GET Electrical Technology syllabus for transition into FET specialisations in Gauteng technical schools, South Africa.

The originality of this research lies in its focus on the underexplored area of curriculum alignment within Electrical Technology in the South African context. While prior studies have examined general vocational education challenges, few have analysed the pedagogical and structural transition from GET to FET in a subject-specific manner. This study contributes new insights by drawing on teachers' lived experiences and interpreting their perspectives through Bernstein's Pedagogic Discourse Theory, which emphasises how knowledge is classified, framed, and transmitted across educational levels. By foregrounding teachers' voices within this framework, the study provides a clearer understanding of how curriculum structure, classroom practice and knowledge progression intersect in real school environments. Therefore, this study not only investigates the effectiveness of the GET syllabus but also situates the findings within ongoing debates about vocational curriculum design and implementation. Specifically, it examines the curriculum content, alignment, and teaching strategies used within the GET phase, while analysing teachers' perceptions of progression and coherence between the two levels. The study is guided by two central research questions: (1) To what extent does the GET Electrical Technology syllabus provide the foundational knowledge and skills necessary for learners to transition successfully into FET specialisations? and (2) How do Electrical Technology teachers perceive the coherence and progression between the GET and FET syllabi, particularly in terms of content alignment and practical skill development? The findings are intended to support efforts to develop vocational learning pathways and to contribute to policy discussions about how the GET phase may better prepare learners for specialised technical education in South Africa and globally.

METHOD

This study employed a qualitative research approach **t**o explore how the General Education and Training (GET) syllabus of Electrical Technology prepares learners for transition into Further Education and Training (FET) specialisations. A qualitative approach is suitable for exploring meanings and experiences that individuals attach to social or educational phenomena (Adedoyin, 2020; Lim, 2025). It focuses on understanding participants' perspectives in depth, allowing the researcher to capture contextual nuances of classroom and curriculum implementation (Bailey, 2021). A case study design was adopted because it provides an in-depth examination of a bounded

system within its real-life context (Yin, 2018). This design was appropriate for studying the relationship between curriculum content, teacher practices and learners' preparedness within the South African Electrical Technology context. The study was theoretically grounded in Bernstein (2000) Pedagogic Discourse Theory**,** which explains how knowledge is selected, organized, and transmitted in educational settings. The theory guided the analysis of how knowledge is classified and framed across the GET and FET phases, revealing whether curriculum structure enables or restricts learner progression into specialised fields. The study was conducted between August and October 2025 across three education districts in Gauteng Province, South Africa, namely Gauteng North, Tshwane South, and Tshwane West. These districts were chosen because they host several technical high schools that offer both GET and FET phases of Electrical Technology, making them suitable contexts for examining curriculum transition and coherence.

The study population consisted of 20 Electrical Technology teachers from 17 technical high schools in the selected Gauteng districts. These were selected because they offered continuous Electrical Technology instruction from Grades 8 to 12. From this population, 11 Electrical Technology teachers were purposively selected as participants of this study. The selection criteria focused on teachers currently teaching Electrical Technology in both GET and FET phases, and on those with at least 3 years of teaching experience in the subject. In contrast, schools without both phases or where teachers did not meet these criteria were not included in the study. This ensured that only experienced teachers with direct knowledge of the curriculum transition were interviewed, enhancing data quality and the trustworthiness of the findings and results. The sample size of 11 participants was determined based on data saturation, a principle commonly applied in qualitative research. During data collection, new interviews were conducted until no new insights or themes were emerging. By the eleventh interview, responses had begun to repeat, indicating that sufficient depth and variety of information had been achieved. The final sample size was therefore adequate to capture meaningful patterns and experiences across the study sites.

Data were collected using semi-structured interviews and document analysis. Semi-structured interviews provided participants with the flexibility to share their experiences, perceptions, and challenges in teaching Electrical Technology, while enabling the researcher to probe for detailed explanations (Karatsareas, 2022). Eleven face-to-face interview sessions were conducted at participants' schools and lasted approximately 45-60 minutes each. Document analysis involved reviewing the Annual Teaching Plans (ATPs**)** and the Curriculum and Assessment Policy Statement (CAPS) to examine how the GET curriculum content aligns with or fails to support FET-level requirements. This process helped identify gaps in content progression and pedagogical continuity. The combination of these two methods allowed for data triangulation, enhancing the validity and credibility of the findings by cross-verifying teachers' perspectives with curriculum documentation. The main interview questions that were used to collect data from Electrical Technology teachers are shown in Table 1 below.

Table 1. Semi-Structured Interview Questions

No.	Semi-structured interview questions
1	How effective do you think the current GET syllabus is in preparing learners for the FET Electrical Technology phase?
2	Which content areas in the GET syllabus do you find most and least relevant for FET learning?
3	What teaching approaches do you use to help learners transition smoothly from GET to FET?
4	What challenges do you face when teaching learners who are progressing from GET to FET?
5	How do resources and school conditions influence the way you implement the syllabus?
6	What changes would you suggest to improve curriculum alignment between the two phases?

Document analysis complemented the interviews by examining the Electrical Technology Curriculum and Assessment Policy Statement (CAPS), Annual Teaching Plans (ATPs) and selected lesson plans of teachers. This analysis helped identify how GET content links to, or fails to link to, the concepts, content, and skills required in the FET phase.

Data were analysed using thematic analysis, following the steps outlined by Salmona & Kaczynski (2024). This involved transcribing interview data, coding textual segments, identifying recurring patterns, and generating themes that reflected the structure and effectiveness of the GET

syllabus in preparing learners for FET. Thematic analysis enabled the researcher to interpret both explicit and underlying meanings in participants' responses and connect them to Bernstein's theoretical concepts of classification and framing.

To ensure trustworthiness, the study applied criteria of credibility, dependability, and confirmability. Member checking was conducted to verify the accuracy of interview interpretations, and data triangulation (interviews and documents) was used to enhance analytical rigour. Detailed descriptions of context and procedures were maintained to support transferability. Ethical clearance was obtained in accordance with institutional and national research standards. Participants provided informed consent after being briefed on the purpose, procedures, and voluntary nature of the study. They were assured of their right to withdraw at any point without consequence. To ensure confidentiality, pseudonyms were assigned to all participants, and identifying details were removed from transcripts. Data were securely stored and used solely for research purposes, ensuring adherence to professional ethical guidelines.

RESULTS AND DISCUSSION

Results

This section presents and interprets findings from semi-structured interviews and document analysis, structured around the two research questions that guided this study. To reiterate, the purpose of this study was to explore the General Education and Training syllabus for Electrical Technology to support transition into Further Education and Training specialisations. Thematic analysis was employed to extract key themes related to foundational knowledge, curriculum alignment and practical preparedness. All discussions were informed by Bernstein's Theory of Pedagogic Discourse, which helped interpret how knowledge is selected, organised, and transmitted in curriculum settings, particularly where vertical and horizontal discourse structures are critical for progression.

To reiterate, the selected sample comprised 11 Electrical Technology teachers, referred to as Teachers A-K, each reflecting a unique teaching context across Gauteng technical schools. Teacher A and Teacher B taught at well-resourced urban schools and oversaw both Grades 9 and 10, providing insights regarding curriculum continuity. Teachers C and D worked in township schools with limited workshop resources, highlighting the contextual constraints. Teacher E and Teacher F were experienced senior teachers and subject heads responsible for mentoring new teachers. Still, Teachers G and H were relatively new to the field, with exactly 3 years of teaching experience, and brought new insights to syllabus implementation. Their combined experiences enabled the study to identify differences in the interpretation, implementation and perceived alignment of the Electrical Technology syllabus across educational environments. Such representation is critical in qualitative research, as Singh et al., (2024), emphasize the value of different voices in increasing the depth and legitimacy of case study findings.

Findings and Discussions on Research Question 1

"To what extent does the GET Electrical Technology syllabus provide the foundational knowledge and skills necessary for learners to transition successfully into FET specialisations?"

Electrical Technology teachers' perceptions and curriculum documents reveal a significant gap between what is taught in the GET phase and what is required for success in the FET phase. Across the interviews, Electrical Technology teachers consistently expressed concerns about the apparent treatment of key Electrical Technology concepts in Grades 8 and 9, particularly regarding the development of practical skills and the cognitive progression of learners. During semi-structured interviews, Teacher A elaborated that, "Learners get to Grade 10 without having even touched a multimeter. They know some theory, but they cannot apply it to practical work." This lack of readiness reflects what Bernstein (2000) would define as a breakdown in vertical discourse, in which knowledge is not accumulated in a hierarchical or progressively structured manner across educational phases. Emphasise that for Vocational Education (VOC) to be effective, it must move beyond

abstract theory and develop contextual, applicable skills relevant to the learner's future career field (McGrath & Yamada, 2023).

Teachers B, C, and D supported the concern, stating that the GET syllabus is extremely theoretical and does not involve learners in actual practical work. Similarly, Teacher B also noted that a lack of hands-on experience leads to poor skill transfer until learners reach FET. In contrast, Teacher C pointed out that "Without workshop exposure, learners cannot relate theory to practice." Teachers E and F, both experienced teachers, recognised the syllabus's objective to convey key electrical principles but argued that it lacks depth and development towards FET specialisations such as Power Systems and Digital Electronics, among others. They believed that, while theoretical grounding is necessary, it must be supplemented by structured application to maintain learning continuity, which is compatible with Suci et al., (2022), belief that practical application increases vocational comprehension. Similarly, although less experienced than other teachers, Teachers G and H agreed that the syllabus did not prepare learners for real FET activities such as circuit wiring or component testing, demonstrating a claim about the lack of vertical knowledge progression (Bernstein, 2000). Teachers I, J, and K, who taught entirely at the GET level, discovered that their learners frequently struggled with identifying fundamental tools and with safety practices, indicating the need for more integrated, practical activities to support early conceptualisation. These perspectives collectively affirm that the GET curriculum lacks logical scaffolding toward the FET phase, which is consistent with Yarberry & Sims (2021) observation that poorly designed practical learning impedes occupational growth (Yarberry & Sims, 2021). Hence, the study examined the extent to which the GET Electrical Technology syllabus provides the foundational knowledge and skills necessary for learners to transition successfully into FET specialisations.

Similarly, document analysis supported these views. The curriculum content in the GET phase was predominantly descriptive, with little scaffolding toward technical competencies expected in the FET phase, especially for Electronics specialisations. For example, Teacher C revealed that "While circuit theory was included under Basic Principles of Electricity in Grade 9, there was no structured opportunities for learners to apply this knowledge practically using tools, simulations, or real-world scenarios". Ogbuanya & Shodipe (2022), underscores that learners cannot develop vocational expertise without participating in knowledge-rich practical tasks that simulate workplace realities. Majola (2024) claims that many South African vocational programmes remain overly theoretical, with practical components often sidelined due to resource shortages and rigid syllabus. Thus, this poses a concern about how well the GET syllabus prepares learners for transition to FET specialisations of Electrical Technology? This concern reinforces the view that the GET syllabus, constrained by its theoretical bias and limited practical exposure, does not sufficiently prepare learners for the demands of FET Electrical Technology specializations, thereby widening the gap in curricular continuity. As Ntholeng (2024) highlight, weak curriculum coherence and limited practical orientation in South African schooling often hinder learners' ability to progress effectively into more specialized vocational pathways. Resultantly, this shows that the GET syllabus does not give learners the solid grounding they need for FET Electrical Technology. Its focus on theory over practical skills leaves learners underprepared and widens the gap between the two phases.

Furthermore, Teacher B resonated this concern: "We're basically forced to reteach everything in Grade 10. The gap is too wide." This aligns with research by Mushwana et al., (2024), who found that weak curriculum continuity in African TVET systems results in lowered learner confidence and higher dropout rates. The issue is not just one of content inclusion, but of sequencing and pedagogic strategy, two key dimensions Bernstein (2000), highlights as central to curriculum design. Also, Teacher D confirmed this claim by explaining that "Grade 10 Electrical Technology learners enter the FET phase without the solid foundation they need, as the GET syllabus often introduces concepts without ensuring mastery or application (Bernstein, 2000). This evidence reveals that while some basic principles are covered, the GET syllabus does not adequately provide the depth of knowledge or skills necessary for a smooth transition into FET phase. In the same way, Singh et al., (2024) point out that when vocational curricula are broken up and lack a clear flow, learners often battle to develop the skills they need at the next level. Gonczi (2020) reminds us that without proper support and a balance of theory and practice, the move from general to specialized vocational learning becomes

difficult and discouraging for many learners. Taken together, this shows that the GET Electrical Technology syllabus is not giving learners the solid grounding they need to step confidently into FET specializations.

Subsequently, the findings reveal that the GET syllabus lacks the structured, progressive and application-oriented content needed to serve as a bridge into specialized technical learning areas of Electrical Technology in the FET phase. This misalignment represents more than a missed academic opportunity, it undermines the very aim of Electrical Technology as a vocational pathway, which was brought in place to guide equip learners for related field of work. Addressing this misalignment is essential if South African learners are to benefit from Vocational Education (VOC) that prepares them not only for FET success but for meaningful participation in the country's falling economy.

Findings and Discussions on Research Question 2

"How do Electrical Technology teachers perceive the coherence and progression between the GET and FET syllabus?"

When Electrical Technology teachers were asked about curriculum coherence, teachers overwhelmingly felt that the GET and FET syllabus functioned in isolation, with little attention paid to content progression or pedagogical continuity. During semi-structured interviews Teacher C remarked, "In Grade 9, learners just identify tools, but there's no transition to using them. Then in Grade 10, they're expected to wire circuits. It's a huge jump for learners." This disconnect mirrors what Bernstein (2000), describes as a weak classification and framing of knowledge where boundaries between subjects or phases are not clearly aligned and pedagogical control is fragmented. In this study, Electrical Technology teachers clearly see little progression between the GET and FET syllabi. Hence, learners meet concepts in isolation, without the steady build-up needed to bridge the two phases. This resonates David (2023) point that vocational curriculum in South Africa is often disjointed, making it hard for learners to carry skills forward to the next phase. In line with the research question, teachers believe the transition from GET to FET is poorly structured, leaving learners unprepared for the demands of the Electrical Technology FET syllabus.

Teachers G, H and I elaborated by emphasizing that, while the GET syllabus contains fundamental topics, it does not demonstrate how they translate into advanced competencies in FET specializations. In addition, Teacher H stated that "Learners memorize terms in Grade 9 to progress, but in Grade 10, they suddenly face complex wiring diagrams without knowing the logic behind them." Teachers J and K, on the other hand, suggested that the Department's limited teacher support and unclear progression guidelines contributed to the problem. Their views support David (2023) claim that Vocational Education (VOC) must openly scaffold knowledge across levels so that learners can gradually develop cognitive and practical competencies required in the FET phase and in the electrical industries. Hence, it was significant for this study to to explore how the GET curriculum supports or fails to support smooth curriculum transition in Electrical Technology.

On the similar vein, Teacher D further added, "There's no continuity in how the topics evolve, it feels like two separate courses with no relationship linking the two." Such misalignment limits learners' ability to internalize key concepts over time and reduces the effectiveness of skill acquisition, a concern also raised by Farran & Nunez (2025), who advocate for integrated learning routes in Vocational Education (VOC). This points to a real weakness in how the curriculum is structured, where learners do not get a chance to gradually build on what they have learned. As Reiser (2023) explains, successful vocational learning depends on clear scaffolding that connects knowledge across grades, so learners are not left to figure out difficult concepts on their own. Felder & Brent (2024) also warn that when the curriculum is split, learners struggle to develop and apply practical skills effectively. In line with these concerns, Electrical Technology teachers feel that the GET and FET syllabi are divided and do not provide the smooth progression learners need from the GET to the FET phase. Furthermore, teachers noted that in Grade 10, they often have to reteach basic skills, which wastes time for more advanced work. "Learners can feel lost and frustrated when concepts suddenly become harder without proper preparation", added teacher E. Overall, this shows that the lack of coherence between GET and FET makes the transition much harder for learners than it should be.

From the document analysis, it was clear that while the GET syllabus outlines foundational content, it does not intentionally prepare learners for the complexity of tasks in the FET phase. For instance, Digital Logic circuits, a major topic in Digital Electronics, are absent in Grades 8 and 9, yet are heavily emphasised in Grade 10. Teacher D mentioned, "Learners are just expected to pick it up as they go. But without a base, they get lost." This lack of pedagogic sequencing undermines the cognitive and technical scaffolding required for success in technical fields. Rintala & Nokelainen (2020) point out that in Vocational Education (VOC), cumulative learning is vital, each phase must support the next. Without coherent alignment, even the most competent learners struggle to make sense of the progression. Moreover, many teachers felt that inadequate support structures, such as teaching aids, instructional resources and subject-specific teacher development, compounded the lack of consistency. As Teacher F observed, "We're supposed to guide learners across phases, but the system does not equip us with the materials or training to do that properly." In relation to Research Question 2, these insights show that teachers perceive a clear break in coherence between the GET and FET syllabi. Instead of a smooth transition, learners face gaps that undermine their ability to build on prior knowledge. Electrical Technology teachers also stressed that without proper resources and training, they struggle to bridge this gap themselves. This means the progression is disjointed, leaving learners underprepared for advanced Electrical Technology specialisations in the FET band.

The collective responses of Teachers A-K paint a clear picture of how a lack of curriculum consistency affects both teaching and learning in the Electrical Technology subject in Gauteng technical schools. Their reflections reveal that, despite different school environments and teaching experiences, they all face the challenge of connecting to an Electrical Technology curriculum framework. As a result, these findings emphasise the need for a revised Electrical Technology syllabus which involves vertical progression, emphasises practical readiness for FET specialisations, and supports teacher professional development to ensure consistent content delivery. This aligns with Young & Hordern (2022), who advocate curriculum coherence as critical for long-term Vocational Education (VOC) success.

In summary, the findings for Research Question 2 confirm a troubling disconnect between the GET and FET syllabi regarding content progression and skill development. While the GET phase introduces basic concepts, it does so in isolation, with limited effort to support learners in applying these ideas to real-world contexts or to the more complex work in the FET phase. This weak rationality undermines the role of Vocational Education (VOC) in South Africa as a meaningful route to employment and further study.

CONCLUSION

This study concludes that while the GET Electrical Technology syllabus in South African technical schools attempts to lay a foundation for Further Education and Training (FET) specialisations, it falls significantly short in doing so. The findings revealed that the curriculum lacks both depth and coherence to prepare learners for advanced technical content in subjects such as Digital Electronics, Power Systems, and Electronics. Teachers consistently emphasised the lack of structured progression, inadequate practical learning, and weak content alignment between the GET and FET phases. These gaps limit learners' ability to transfer knowledge into hands-on tasks and result in a shaky transition into the FET phase, where higher-order thinking and practical problem-solving are critical.

Moreover, the study found that the foundational concepts taught in Grades 8 and 9 are not only overly theoretical but also disconnected from the skills required in Grade 10, creating a pedagogical divide that teachers must bridge. In light of Bernstein's theory of pedagogic discourse, this lack of vertical curriculum alignment hinders learners' access to systematic knowledge and restricts their progression into higher levels of vocational understanding. From a broader perspective, these findings speak to a pressing issue in curriculum studies when Vocational Education (VOC) is treated as a loosely connected series of phases rather than a coherent learning journey; learners and systems both lose.

In the global and Inovasi Teknologi Pendidikan Journal context, where Vocational Education (VOC) is increasingly viewed as a driver of inclusive growth and social transformation, South

Africa's experience highlights the need for curriculum design that is not only internally aligned but also responsive to changing technological and workplace demands. Therefore, this study argues for an urgent re-evaluation of the General Education and Training (GET) Electrical Technology syllabus to ensure stronger progression, improved practical integration and better preparedness for specialisation. Doing so would not only improve learner outcomes locally but also contribute to the international conversation on how Vocational Education (VOC) systems can be designed to equip learners for meaningful futures.

Based on these findings, educational officials in the Gauteng Department of Education (GDE) and throughout South Africa should further develop curriculum reform by adopting a competency-based approach that integrates knowledge, abilities, and attitudes aligned with workplace realities. Such a model should prioritise problem-solving, innovation, and adaptability competencies that enable learners to participate effectively in the global economy (Alainati, 2021). Correspondingly, competency-based frameworks would enable learners to understand technical theory and apply it in a variety of contexts using modern electrical tools and technologies. This policy orientation would also necessitate investments in teacher professional development, industry partnerships, and resource allocation to create authentic learning environments. This will further help post-matric learners to serve the local and global needs of the Electrical Engineering industry as a whole.

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REFERENCES

Adedoyin, O. B. (2020). *Qualitative research methods*. Near East University. https://www.researchgate.net/publication/340594471

Alainati, S. J. (2021). Towards an effective competency-based education and training model. *IOSR Journal of Business and Management (IOSR-JBM)*, *23*(11), 31–40. https://doi.org/10.9790/487X-2311013140

Andreassen, U. S., & Kjelaas, I. (2025). Teachers' dialect use and the newly arrived learner in a technical VET programme in Norway. *Nordic Journal of Vocational Education and Training*, *15*(2), 23–52. https://doi.org/10.3384/njvet.2242-458X.2515223

Bailey, C. (2021). *Exploring lived experience*. Springer International Publishing. https://doi.org/10.1007/978-3-030-78694-6_3

Bernstein, B. (2000). *Pedagogy, symbolic control, and identity*. Rowman & Littlefield Publishers. https://doi.org/10.5771/9781461636205

Bertram, C. A., Mthiyane, C. C. N., & Naidoo, J. (2021). The tension between curriculum coverage and quality learning: The experiences of South African teachers. *International Journal of Educational Development*, *81*, 102353. https://doi.org/10.1016/j.ijedudev.2021.102353

Bolton-King, R. S. (2022). Student mentoring to enhance graduates' employability potential. *Science & Justice*, *62*(6), 785–794. https://doi.org/10.1016/j.scijus.2022.04.010

Branson, N., & Whitelaw, E. (2025). *Post-school education and training policies in South Africa: from 1994 to now*. ERSA Working Paper Series. https://doi.org/10.71587/93qn2656

Carlsson, S., & Willermark, S. (2025). Who's account(able)? Making sense of Instagram in vocational teaching practices. *Nordic Journal of Vocational Education and Training*, *15*(2), 1–22. https://doi.org/10.3384/njvet.2242-458X.251521

Chumchuen, N., & Akatimagool, S. (2024). Enhancing learning activities using innovation based problem-solving process in promoting practical skills of electrical technology.*Towards a Hybrid, Flexible and Socially Engaged Higher Education (ICL 2023I)*, *901*, 132-142. https://doi.org/10.1007/978-3-031-53022-7_14

David, W. A. (2023). *Synergising the creation of knowledge processes in a technical and vocational education and training college with industry demands for sustainable lecturer learning environments* [Dissertation, University of the Free State]. University of the Free State. https://scholar.ufs.ac.za/items/78262593-1aa9-4438-bc89-9fca12a78594

Elliott, N. , & Higgins, A. (2023). Surviving grounded theory research method in an academic world: Proposal writing and theoretical frameworks. *Grounded Theory Review an International Journal*, *22*(1), 164–176. https://groundedtheoryreview.org/index.php/gtr/article/view/113

Farran, I., & Nunez, I. (2025). Converging pathways: New approaches to integrate vocational education training and higher education. *Journal of Vocational Education & Training*, *77*(4), 1147–1165. https://doi.org/10.1080/13636820.2024.2428769

Felder, R. M., & Brent, R. (2016). *Teaching and learning STEM: A practical guide*. John Wiley & Sons. https://books.google.co.id

Gonczi, A. (2020). The new professional and vocational education. In *Dimensions of Adult Learning* (pp. 19–34). Routledge. https://doi.org/10.4324/9781003115366-3

Gumede, L. P. (2023). *Informal science education practices and views of further education and training (FET) teachers: A Unizulu Science Centre Case Study* [Theses, University of South Africa]. UNISA Institutional Repository. https://hdl.handle.net/10500/30799

Karatsareas, P. (2022). Semi-structured interviews. In *Research Methods in Language Attitudes* (pp. 99–113). Cambridge University Press. https://doi.org/10.1017/9781108867788.010

Khethwa, N. R. (2020). *Education transformation and curriculum change: Case studies of South African history curriculum FET Phase in Four Gauteng schools* [Theses, University of Johannesburg]. UJContent. https://hdl.handle.net/10210/486548

Lim, W. M. (2025). What is qualitative research? An overview and guidelines. *Australasian Marketing Journal*, *33*(2), 199–229. https://doi.org/10.1177/14413582241264619

Mahajan, P. (2025). *The silent erosion: Global generational cognitive decline in the age of AI and the future of human intellectual agency*. Zenodo. https://doi.org/10.5281/zenodo.16793108

Majola, E. (2024). Vocational education and the relentless struggles of TVET graduates in the Eastern Cape, South Africa: A Freirean Approach. *Journal of Vocational Education & Training*, *77*(5), 1596. https://doi.org/10.1080/13636820.2025.2550220

Marczuk, A. (2021). *Is higher education really higher and secondary education merely secondary? The transition from higher and vocational education to work from an international perspective* [Dissertation, Leibniz Universität Hannover]. TIB Leibniz Information Centre for Science and Technology University Library. https://doi.org/10.15488/11340

Mncube, D. W., Ajani, O. A., Ngema, T., & Mkhasibe, R. G. (2023). Exploring the problems of limited school resources in rural schools and curriculum management. *UMT Education Review*, *6*(2), 1–31. https://doi.org/10.32350/UER.62.01

McGrath, S., & Yamada, S. (2023). Skills for development and vocational education and training: Current and emergent trends. *International Journal of Educational Development*, *102*, 1-9. https://doi.org/10.1016/j.ijedudev.2023.102853

Motloung, M. (2025). *Teachers' experiences of the integration of educational technologies in the teaching and learning of economics in the FET phase in Tshwane South District* [Theses, University of South Africa]. Proquest. https://www.proquest.com

Msezane, S. B. (2020). An analysis of the changes in the coverage, teaching and examination of environmental impact topics. *Southern African Journal of Environmental Education*, *33*(1), 39-51. https://doi.org/10.4314/sajee.v.33i1.4

Msimango, S. M., Mtshali, T. I., & Khoza, S. D. (2024). Equipping civil technology teachers with hands-on skills and educational resources for effective teaching of practical lessons. *Research in Social Sciences and Technology*, *9*(2), 341–358. https://doi.org/10.46303/ressat.2024.40

Mushwana, B. N., Laseinde, O. T., & Mashinini, P. M. (2024). Exploring factors influencing dropout among TVET college students: A relationship-based study. *2024 World Engineering Education Forum-Global Engineering Deans Council (WEEF-GEDC)*, Australia, pp. 1–6. https://doi.org/10.1109/WEEF-GEDC63419.2024.10854943

Ndimbira-Rosner, M. J. (2024). *How do holistic afterschool programs improve the readiness of poor black learners in Urban Namibia and South Africa to enter tertiary education? Case studies examining two successful afterschool programs operating in the post-apartheid context* [Dissertation, Rutgers University]. Rutgers University Libraries. https://rucore.libraries.rutgers.edu/rutgers-lib/73267/

Ntholeng, M. G. (2024). *The effect of career guidance in secondary schools on skills development and sustained economic participation: Meaningful employment* [Theses, Faculty of Commerce, Graduate School of Business (GSB)]. OpenUCT. http://hdl.handle.net/11427/40966

Ogbuanya, T. C., & Shodipe, T. O. (2022). Workplace learning for pre – service teachers' practice and quality teaching and learning in technical vocational education and training: Key to professional development. *Journal of Workplace Learning*, *34*(4), 327–351. https://doi.org/10.1108/JWL-02-2021-0015

Rintala, H., & Nokelainen, P. (2020). Vocational education and learners' experienced workplace curriculum. *Vocations and Learning*, *13*(1), 113–130. https://doi.org/10.1007/s12186-019-09229-w

Reiser, B. J. (2023). *Why scaffolding should sometimes make tasks more difficult for learners.* In Computer support for collaborative learning. Routledge. https://www.taylorfrancis.com/chapters/edit/10.4324/9781315045467-37/scaffolding-sometimes-make-tasks-difficult-learners-brian-reiser

Salmona, M., & Kaczynski, D. (2024). Qualitative data analysis strategies. In *How to Conduct Qualitative Research in Finance* (pp. 80–96). Edward Elgar Publishing. https://doi.org/10.4337/9781803927008.00012

Singh, A. K., Meshram, S. A., Khandelwal, V., Tiwari, P., & Singh, P. (2024). Implementation of industry-based perspective in technical education. In *Industrial and Manufacturing Designs* (pp. 321–346). Wiley. https://doi.org/10.1002/9781394212668.ch11

Suci, D. N., Basthomi, Y., Cahyono, B. Y., Anugerahwati, M., Masuara, F., & Anggraini, M. P. (2022). Reading English texts through Telegram App: Indonesian vocational students' perceptions. *HERMES - Journal of Language and Communication in Business*, (62), 127–139. https://doi.org/10.7146/hjlcb.vi62.128116

Western Cape Education Department. (2021). *The three-stream model for technical and vocational education in South Africa*. Basic Education Republic of South Africa. https://wcedeportal.co.za/the-three-stream-model

Yarberry, S., & Sims, C. (2021). The impact of COVID-19-prompted virtual/remote work environments on employees' career development: Social learning theory, belongingness, and self-empowerment. *Advances in Developing Human Resources*, *23*(3), 237–252. https://doi.org/10.1177/15234223211017850

Yeboah, C. C. (2024). *Artisanal skill acquisition and employment creation in the informal sector: A case study of Tema, Ghana* [Dissertation, University of Ghana]. UGSpace https://ugspace.ug.edu.gh/handle/123456789/43750

Yin, R. K. (2018). *Case study research and applications: Design and Methods*. Sage. https://uk.sagepub.com/en-gb/eur/case-study-research-and-applications/book250150

Young, M., & Hordern, J. (2022). Does the vocational curriculum have a future? *Journal of Vocational Education & Training*, *74*(1), 68–88. https://doi.org/10.1080/13636820.2020.1833078