



The state of implementation of Computer Application Technology curriculum in selected rural secondary schools in South Africa

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ABSTRACT

This study examined the state of implementation of the Computer Applications Technology (CAT) curriculum in selected rural secondary schools in the Gauteng North district of South Africa. This study aims to fill the gap in understanding how social and contextual factors mediate the use of technological tools in classroom environments, particularly in rural settings where resources are limited. The participants included three CAT teachers, three members of the School Management Team, three ICT coordinators, and six learners from three secondary schools, using a qualitative case study design. Data were collected through semi-structured interviews and open-ended questionnaires and analyzed using thematic analysis. It was found that while teachers acknowledged the existence of the CAT curriculum, there was significant inconsistency in its implementation, with some teachers relying on textbooks instead. The study revealed a divide in teacher competencies, with novice teachers feeling inadequately prepared to teach CAT effectively. It is recommended that comprehensive professional development programs be established to enhance teachers' understanding and implementation of the CAT curriculum, ensuring equitable educational opportunities for all learners. This study contributes to scholarship by providing in-depth qualitative insights into the implementation of the CAT curriculum in rural secondary schools, highlighting teachers' challenges and successes in this context.

Keywords: Computer Applications Technology (CAT), Curriculum Implementation, Teacher Competence, Professional Development, Rural Secondary Schools

INTRODUCTION

In many educational institutions around the world, information and communication technology (ICT) is incorporated into teaching and learning. As a result, how teachers present, plan, and organize their lessons has changed due to the use of ICT.¹ Teachers must have technical skills and knowledge to use ICT resources in the classroom.² In South African secondary schools, the Computer Application Technology (CAT) subject is designed to equip learners with the technological skills needed in today's

¹ Carol Ann Tomlinson and Marcia B Imbeau, *Leading and Managing a Differentiated Classroom* (Ascd, 2023).

² Emmanuel Ayisi Abedi, "Tensions between Technology Integration Practices of Teachers and ICT in Education Policy Expectations: Implications for Change in Teacher Knowledge, Beliefs and Teaching Practices," *Journal of Computers in Education* 11, no. 4 (2024): 1215–34.

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world. However, the challenges encountered in this study were that many secondary schools in rural areas of the Gauteng North district in South Africa have not yet fully benefited from the CAT curriculum. This is because computers and their applications were used solely for administrative purposes; few schools in rural areas offer CAT subjects, and in some of the secondary schools where CAT is presented, teacher implementation has not yet reached the maturity level. This is because ICT is not the teachers' field of specialization, and they have never attended professional development to enhance their CAT teaching skills.

The South African CAT Curriculum, as detailed in the Curriculum and Assessment Policy Statement (CAPS), aims to equip learners in secondary schools, Grades 10 to 12, with essential knowledge and practical skills for effectively utilizing ICTs to address real-world challenges.³ The CAT is an elective subject that learners can select in the Further Education and Training phase.⁴

This curriculum seamlessly integrates theoretical concepts with practical applications across six key topic areas relating to solution development, systems technologies, network technologies, Internet technologies, information management, and social implications. Its primary objectives include fostering learners' proficiency in end-user software such as word processing, spreadsheets, and databases while enhancing their ability to ethically find, evaluate, and communicate information.⁵ Moreover, the curriculum promotes awareness of the legal, social, and environmental implications of ICT usage. The authors argue that the CAT curriculum aims to emphasize problem-solving, responsible digital citizenship, and learners' preparedness for higher education and the modern workforce. This curriculum also prepares learners to navigate and contribute to an increasingly digital world. However, the challenges remain with how teachers in rural secondary schools in the Gauteng North district implement this. While previous studies have investigated the challenges associated with implementing the CAT curriculum in South African secondary schools, they have predominantly concentrated on practical and infrastructural issues, such as resource shortages, insufficient teacher training, learner perceptions, and unequal access to technology.⁶ However, there is a notable lack of research that employs theoretical frameworks, such as activity theory, to delve into the intricate, systemic interactions that influence CAT curriculum implementation.

To investigate this phenomenon, Engeström's activity theory was used to understand the status of implementing the CAT curriculum.⁷ The application of activity theory in this study was motivated by the fact that few studies have explored how contradictions among the elements of the activity system, such as policies (rules), teacher roles (division of labour), and school culture (community), affect teachers' pedagogical choices and learners' engagement.⁸ This gap hinders the complete understanding of how social and contextual factors mediate the use of technological tools in actual classroom environments. Therefore, Razak et al. contended that more research should leverage activity theory to investigate how these interconnected components either promote or impede effective CAT curriculum delivery across diverse educational contexts.⁹ For these reasons, the researchers investigate the state of implementation of the CAT curriculum in rural secondary schools in the Gauteng North district, South Africa. The research question posed in this study is: To what extent do teachers implement the CAT curriculum in selected rural secondary schools in the Gauteng North district, South Africa?

³ DBE. Department of Basic Education, "Curriculum and Assessment Policy Statement (CAPS): Computer Applications Technology Grades 10–12" (Government Printing, 2011).

⁴ J. H. Stoltz, Byron Bunt, and Sukie van Zyl, "Leveling up Learning: Enhancing Self-Directed Learning in Computer Applications Technology with Classcraft," *Education Sciences* 15, no. 2 (February 4, 2025): 180, <https://doi.org/10.3390/educsci15020180>.

⁵ Department of Basic Education, "Curriculum and Assessment Policy Statement (CAPS): Computer Applications Technology Grades 10–12."

⁶ Amelia Smit, *Grade 10 Computer Applications Technology Learners' Experience of the Blended Learning Approach* (University of Johannesburg (South Africa), 2025); Abueng Rachael Molotsi, "The Use of ICT Resources to Transform Teaching at Secondary Schools in the Bojanala District, Northwest Province," *South African Journal of Education* 42, no. si1 (2022): 1–10.

⁷ Yrjö Engeström, "Expansive Visibilization of Work: An Activity-Theoretical Perspective," *Computer Supported Cooperative Work (CSCW)* 8, no. 1–2 (March 1999): 63–93, <https://doi.org/10.1023/A:1008648532192>.

⁸ N. Asiah Razak et al., "Successful Implementation of Information and Communication Technology Integration in Malaysian Public Schools: An Activity Systems Analysis Approach," *Studies in Educational Evaluation* 58 (2018): 17–29.

⁹ Razak et al., "Successful Implementation of Information and Communication Technology Integration in Malaysian Public Schools: An Activity Systems Analysis Approach."

LITERATURE REVIEW

ICT Policy

The literature on ICT policy in South Africa highlights the national framework designed to integrate technology into schools, aiming to leverage the information economy and enhance educational outcomes.¹⁰ Thamaga and Mapiye et al. emphasize the importance of aligning ICT initiatives with educational goals to ensure effective implementation.¹¹ Notable initiatives, such as NEPAD's e-schools, are intended to equip teachers and school managers with essential ICT tools and skills, as highlighted by Alda et al.¹² However, significant challenges, including low community literacy, insufficient awareness, and inadequate infrastructure, which impede effective policy implementation, persist.¹³ Moreover, treating ICT as a standalone subject rather than an integrated component of the curriculum complicates its adoption and diminishes its potential impact on learning outcomes.¹⁴ The South African Schools Act provides a foundational framework for ICT integration; however, inconsistencies in implementation arise from provincial authorities' autonomy, particularly affecting rural communities that remain underserved.¹⁵

Ankiewicz indicates that despite the introduction of ICT, a lack of readiness and a shared vision among stakeholders significantly hampers effective integration.¹⁶ This sentiment is echoed by Nkosi, who argues that without a coherent strategy and alignment among stakeholders, the potential of ICT to enhance educational quality may remain unfulfilled.¹⁷ Furthermore, the role of teacher training and professional development in fostering ICT integration has been highlighted by authors such as Chigona and Tunjera, who assert that ongoing support and training are critical for successful implementation.¹⁸ This study aims to investigate the limited implementation of the CAT curriculum at a rural Gauteng North District school, emphasizing the need for a coherent strategy and stakeholder alignment to realize the educational potential of ICT. By situating our findings within this broader context, we aim to contribute to the ongoing discourse on ICT policy and its implications for educational practice in South Africa.

CAT Curriculum

The CAT curriculum aims to equip learners with proficiency in software applications and ICT concepts to address real-world problems,¹⁹ integrating both practical and theoretical knowledge. However, Stoltz et al. note that the theoretical component, which constitutes about fifty percent of the curriculum, often disengages students when delivered through traditional methods.²⁰

¹⁰ Department of Basic Education, "Curriculum and Assessment Policy Statement (CAPS): Computer Applications Technology Grades 10–12."

¹¹ T. Thamaga, "Challenges Teachers and Learners Face in Computer Application Technology at Selected Rural Public Schools at Circuit One in Gauteng North District." (Tshwane University of Technology, n.d.); Obvious Mapiye et al., "Information and Communication Technologies (ICTs): The Potential for Enhancing the Dissemination of Agricultural Information and Services to Smallholder Farmers in Sub-Saharan Africa," *Information Development* 39, no. 3 (2023): 638–58.

¹² Whisky Ricaza Alda, Gregorio Cyrus Elejorde, and Rivika Coronado Alda, "Techmentoring Program: A School-Based ICT Initiative for Teachers," *Journal of Research, Policy & Practice of Teachers & Teacher Education* 12, no. 2 (November 24, 2022): 82–97, <https://doi.org/10.37134/jrpptte.vol12.2.6.2022>.

¹³ Rashidi François Kassongo, "The Effect of Government Facilitated ICT Access Interventions on the Well-Being of Marginalised Communities in the Overberg District, South Africa," 2022.

¹⁴ Maisa Mielikäinen, "Towards Blended Learning: Stakeholders' Perspectives on a Project-Based Integrated Curriculum in ICT Engineering Education," *Industry and Higher Education* 36, no. 1 (2022): 74–85.

¹⁵ Cecilia Frans and Shaun Pather, "Determinants of ICT Adoption and Uptake at a Rural Public-Access ICT Centre: A South African Case Study," *African Journal of Science, Technology, Innovation and Development* 14, no. 6 (2022): 1575–90.

¹⁶ Piet Ankiewicz, "Technology Education in South Africa since the New Dispensation in 1994: An Analysis of Curriculum Documents and a Meta-Synthesis of Scholarly Work," *International Journal of Technology and Design Education* 31, no. 5 (November 28, 2021): 939–63, <https://doi.org/10.1007/s10798-020-09589-8>.

¹⁷ Sthando Nkosi, *E-Learning for Improved Skills Development in the National School of Government* (University of Johannesburg (South Africa), 2024).

¹⁸ Agnes Chigona and Nyarai Tunjera, "Teacher Educators' Need for Support for Effective Technology Integration into Pedagogy," in *Innovate Learning Summit* (Association for the Advancement of Computing in Education (AACE), 2020), 439–49.

¹⁹ Department of Basic Education, "Curriculum and Assessment Policy Statement (CAPS): Computer Applications Technology Grades 10–12."

²⁰ Stoltz, Bunt, and van Zyl, "Leveling up Learning: Enhancing Self-Directed Learning in Computer Applications Technology with Classcraft."

This disengagement is further exacerbated by implementation challenges stemming from inadequate infrastructure and insufficient teacher preparedness.²¹ Razak et al. emphasize the importance of teacher competence in enhancing learners' problem-solving skills. They suggest that effective training programs are essential for developing the pedagogical approaches needed.²² Smit advocates for ongoing evaluation and refinement of the curriculum to keep pace with technological advancements, highlighting the need for curricula to be dynamic and responsive to the evolving digital landscape.²³ Haug and Mork emphasize the need to align with 21st-century ICT competencies, arguing that curricula should not only focus on technical skills but also on critical thinking, creativity, and collaboration.²⁴ Despite well-intentioned policies, disparities in resource access and the need for contextual adaptability hinder effective CAT teaching.²⁵

Chigona and Tunjera indicate that successful implementation requires teachers to have both technical skills and pedagogical qualities to foster critical thinking and problem-solving, which are essential for navigating the digital landscape.²⁶ The integration of project-based learning and real-world applications into the curriculum has been shown to improve student engagement and learning outcomes.²⁷ Additionally, the role of community involvement and support in the successful implementation of the CAT curriculum cannot be overlooked, as Nkosi argues that collaboration among schools, parents, and local businesses can provide the necessary resources and support for effective teaching.²⁸ This study aims to investigate the limited implementation of the CAT curriculum at a rural Gauteng North District school, emphasising the need for a coherent strategy and stakeholder alignment to realise the educational potential of ICT. By situating the findings within this broader context, this study aims to contribute to the ongoing debates on the CAT curriculum and its implications for educational practice in South Africa.

THEORETICAL FRAMEWORK

The implementation of the CAT curriculum in secondary schools can be effectively analyzed through activity theory.²⁹ This theory emphasizes the interactions among teachers, learners, technology, and the broader social context, including education policies. This framework reveals how systemic tensions such as inadequate digital infrastructure, limited teacher ICT training, and socio-economic disparities hinder effective curriculum delivery, particularly in rural schools. Van der Westhuizen and Basson highlight that policy implementation failures often arise from contradictions between national objectives and on-the-ground realities, evident in the gap between the intended CAT curriculum and actual classroom practices.³⁰ Engeström's theory emphasises the need for collaborative problem-solving and mediated learning environments, where teachers, learners, and communities co-construct solutions to these barriers. It advocates for professional development initiatives that empower teachers as active agents within a socio-technical system, fostering innovation through shared reflection and

²¹ Tinuade Adekunbi Ojo and Refentse Mathabathe, "An Investigation into the Effectiveness of the Curriculum and Assessment Policy Statement (CAPS) in South African Schools," *International Journal on Integrating Technology in Education* 10, no. 2 (June 30, 2021): 23–38, <https://doi.org/10.5121/ijite.2021.10203>.

²² Razak et al., "Successful Implementation of Information and Communication Technology Integration in Malaysian Public Schools: An Activity Systems Analysis Approach."

²³ Smit, *Grade 10 Computer Applications Technology Learners' Experience of the Blended Learning Approach*.

²⁴ Berit S. Haug and Sonja M. Mork, "Taking 21st Century Skills from Vision to Classroom: What Teachers Highlight as Supportive Professional Development in the Light of New Demands from Educational Reforms," *Teaching and Teacher Education* 100 (April 2021): 103286, <https://doi.org/10.1016/j.tate.2021.103286>.

²⁵ Stoltz, Bunt, and van Zyl, "Leveling up Learning: Enhancing Self-Directed Learning in Computer Applications Technology with Classcraft"; Oluwatoyin Ayodele Ajani, "Curriculum and Assessment Policy Statement (Caps) Document: The Challenges and Limitations to Its Effectiveness in South African Schools," *African Journal of Development Studies* 11, no. 3 (2021).

²⁶ Chigona and Tunjera, "Teacher Educators' Need for Support for Effective Technology Integration into Pedagogy."

²⁷ Lebogang Puree Bopape and Mohohlo Samuel Tsoeu, "Design Thinking and Project-Problem-Based Engineering Teaching and Learning in South Africa," in *2024 World Engineering Education Forum-Global Engineering Deans Council (WEEF-GEDC)* (IEEE, 2024), 1–5.

²⁸ Nkosi, *E-Learning for Improved Skills Development in the National School of Government*.

²⁹ Engeström, "Expansive Visibilization of Work: An Activity-Theoretical Perspective."

³⁰ Gert J van der Westhuizen and Ray Basson, "Evaluation, Activity Theory and the First Steps of Policy Implementation," *Administratio Publica* 19, no. 4 (2011): 27–42.

adaptive use of digital tools.³¹ However, contradictions frequently emerge between policy expectations and classroom realities, as well as between available resources and the intended use of technology.³² Razak et al. further illustrate these tensions, showing how financial limitations prevent teachers from achieving educational objectives.³³ Thus, applying activity theory in this study emphasizes that CAT curriculum implementation should be viewed as a socially mediated activity system influenced by tools, rules, and community structures, rather than merely a technical process.

METHODOLOGY

To address the research question, the interpretivism paradigm was employed, utilizing a qualitative case study design. In this study, a case study design was adopted, as it allows for an in-depth examination of a phenomenon within its real-life context.³⁴ The case study focused on generating explanatory data regarding the implementation of the CAT curriculum in rural public schools. Data were collected through semi-structured interviews and were analyzed using thematic analysis with manual coding. The study received approval from the University of Technology to proceed.

Data was collected through semi-structured interviews with a purposive sample of teachers and school administrators, ensuring that participants had relevant experience and knowledge regarding the CAT curriculum. The semi-structured format allowed for flexibility in exploring participants' perspectives while maintaining a consistent focus on key themes.³⁵ Interviews were conducted in a comfortable environment to encourage open dialogue, and each session was audio-recorded with participants' consent for accuracy. Thematic analysis was employed to analyze the data, using a manual coding process as outlined by Saldaña.³⁶ This involved several stages, including familiarization with the data, generating initial codes, searching for themes, reviewing themes, and defining and naming themes.³⁷ This iterative process ensured that the analysis was thorough and reflective of the participants' voices. The study received ethical approval from the University of Technology, ensuring that all research activities adhered to ethical standards and that participants' confidentiality and rights were protected throughout the research process.

Participants

Purposive sampling was used to select 15 participants from three rural secondary schools in Circuit One of the Gauteng North District, Gauteng Province, South Africa. The participant group comprised three CAT teachers, three members of the School Management Team (SMT), three ICT coordinators, and six learners, with each secondary school contributing one staff member from each category. The learners were from Grades 10, 11, and 12, with two participants from each grade. The group included two female and two male learners from each school. It is important to note that biographical data for the staff members were not collected. The decision not to collect this data was primarily based on the fact that while biographical data can provide valuable context, the researchers prioritized the depth of understanding of curriculum implementation over participants' personal backgrounds, which we believed would not significantly contribute to the core findings of our research.

³¹ Douglas Andrews, Elizabeth Walton, and Ruksana Osman, "Constraints to the Implementation of Inclusive Teaching: A Cultural Historical Activity Theory Approach," *International Journal of Inclusive Education* 25, no. 13 (November 10, 2021): 1508–23, <https://doi.org/10.1080/13603116.2019.1620880>.

³² Mable Kelebogile Kgosi, Moses Makgato, and Nhlelehle Meskien Skosana, "Teachers' Views on the Application of Educational Technologies in the Classroom: A Case of Selected Tshwane West Secondary Schools in Gauteng," *Journal of Curriculum Studies Research* 5, no. 2 (2023): 151–66.

³³ Razak et al., "Successful Implementation of Information and Communication Technology Integration in Malaysian Public Schools: An Activity Systems Analysis Approach."

³⁴ Chinedu Okeke and Micheal Van Wyk, *Educational Research: An African Approach* (Oxford University Press Southern Africa, 2016).

³⁵ John Creswell, *Research Design: Qualitative, Quantitative and Mixed Methods* (Sage Publications., 2003).

³⁶ Johnny Saldaña, "An Introduction to Themeing the Data," in *Expanding Approaches to Thematic Analysis* (Routledge, 2024), 11–26.

³⁷ Saldaña, "An Introduction to Themeing the Data."

Data Collection Sources

Data from the staff members were collected using one-on-one semi-structured interviews. Learners' data were gathered using an open-ended questionnaire.

Semi-Structured Interviews

One-on-one semi-structured interviews were conducted to collect data from the staff members. This interview format was chosen because it allows rich, detailed, and comparable data by allowing participants to respond to questions in their own words. This approach was particularly suitable for this study, as it aimed to gather comprehensive insights into the implementation of the CAT curriculum in rural secondary schools. The interview consisted of five key questions, which included (1) Do teachers implement the CAT policy in the classroom? Please respond with "yes," "no," or "sometimes," and elaborate. (2) Is there a CAT curriculum in place at the school? Please respond with "yes," "no," or "sometimes," and elaborate. (3) Do teachers understand the CAT curriculum? Please respond with "yes," "no," or "sometimes," and elaborate. (4) Are teachers complying with the rules and regulations associated with CAT? Please respond with "yes," "no," or "sometimes," and elaborate. (5) What are the teacher's competencies for teaching CAT?

Learners Open-Ended Questionnaire

In this study, an open-ended questionnaire was employed to collect data manually from learners, aiming to gather a rich and comprehensive understanding of the implementation of the CAT curriculum in rural secondary schools. The questionnaire included three questions, such as (1) Do teachers implement the CAT policy in the classroom? Please respond with "yes," "no," or "sometimes," and elaborate. (2) Do teachers understand the CAT curriculum? Please respond with "yes," "no," or "sometimes," and elaborate. (3) Are teachers complying with the rules and regulations that govern the CAT curriculum? Please respond with "yes," "no," or "sometimes," and elaborate.

Data Analysis

To ensure the quality of this research, trustworthiness with the principles of credibility, transferability, confirmability, and dependability was employed to ensure that the research findings can be trusted from the data collected from the participants using one-on-one semi-structured interviews and learners' open-ended questionnaires. One of the authors conducted interviews and captured the data using a cell phone. The recorded data were transcribed and captured in a Microsoft Word document. The learners' data from the open-ended questionnaires were also captured in Microsoft Word documents. The data were coded and produced five themes relating to implementation of the CAT curriculum, access to the CAT curriculum, comprehension of the CAT curriculum, complying with CAT rules and regulations, and teacher competence to teach CAT.

PRESENTATION OF FINDINGS

Implementation of the CAT Curriculum

The theme, implementation of the CAT curriculum in the classroom, emerged from the staff interview and learner open-ended question 1: *Do teachers implement the CAT policy in the classroom? Please respond with "yes," "no," or "sometimes," and elaborate.* This theme was based on data obtained from the staff's semi-structured interviews and the learners' open-ended questionnaire. It was revealed that most teachers in two schools used and followed the CAT curriculum to teach. In this regard, Teacher 2 from School B replied, *"Yes, we do have a curriculum for CAT."* Teacher 3 from School C stated, *"Yes, the school has a CAT curriculum because we use it to guide what to teach."* Even though most teachers in the same district acknowledged having a CAT curriculum, they did not appear to be following it. Teacher 1 from School A declared, *"No, we do not all have copies of the CAT curriculum."*

The findings revealed that many learners believed that teachers had an adequate understanding of the value of the CAT curriculum, as they used to teach in the classroom. Learner 3 from School B highlighted, *"Yes, the teacher uses the CAT curriculum to teach us."* Learner 5 from School C said, *"Yes, the CAT teacher always refers to the curriculum to teach us because he uses examples that help*

us understand the concepts in different application software.” Learner 6 from School C indicated, *“I think the teacher sticks to the CAT curriculum as we understand various concepts, and we are able to practice on the computers.”* However, some learners expressed the view that teachers were not adequately informed about CAT, while others were unsure. Learner 1 from School A mentioned, *“I do not think the teacher follows the curriculum because in class he always reads the book, and we find it challenging to understand.”* Learner 2 from School A uttered, *“I am not sure; the subject is confusing.”* The findings suggest that most teachers in the two schools acknowledged the existence of a CAT curriculum, indicating a general awareness of its importance. Despite the acknowledgment of the CAT curriculum, there is a notable inconsistency in its implementation.

Access to the CAT Curriculum

The theme, access to the CAT curriculum, was developed from staff interviews. Question 2: Is there a CAT curriculum in place at the school? Please respond with "yes," "no," or "sometimes," and elaborate. The findings showed that all the staff members have access to the CAT curriculum and have implemented it in their school. SMT member 5 from School B concurred, *“Yes, we do have a CAT curriculum at our school. We asked the copy to the school principal to make sure that teacher followed the curriculum stipulated by the DBE.”* SMT member 6 from School C stated, *“Yes, the school has a CAT curriculum; at the beginning of the year in the SMT meeting, we ensure that all the subjects have a relevant curriculum for each subject.”* The ICT coordinator 9 from School C responded, *“Yes, our school has a CAT curriculum, and the teachers use it.”* It was found that in one of the schools, even though the CAT curriculum is there and the teachers have access, they do not follow it when they teach. The ICT coordinator 7 from School A responded, *“Yes, we have a CAT curriculum at our school; however, the ICT teacher does not use it; they rely on the textbook.”*

All staff members reportedly have access to the CAT curriculum, indicating that the schools have made the necessary resources available. SMT members and ICT coordinators confirmed the existence of the CAT curriculum and its intended use in teaching. This acknowledgment reflects a commitment to adhering to the curriculum as stipulated by the DBE.

Comprehension of the CAT curriculum

The theme, comprehension of the CAT curriculum, was fashioned from the staff interviews, Question 3, and learners' open-ended Question 2: *Do teachers understand the CAT curriculum?* Please respond with "yes," "no," or "sometimes," and elaborate. The study found that most teachers in two schools were aware of and understood the curriculum, as it guided them on the learning outcomes and the timeframe of implementing the concepts and the assessment procedures. Teacher 2 from School B shared, *“Yes, I understand the CAT curriculum, and I use it as the guide on what to teach in every term.”* Teacher 3 from School C stated, *“Yes, I understand the curriculum, and I prepare my lessons using it, and it provides the guide on the assessments to conduct every term and the guideline for examination.”* It was discovered that even though the school had a CAT curriculum, the teachers did not understand it because it was not their field of specialization and they used the textbooks. This novice teacher indicated the requirement for professional development in the subject Teacher 1 from School. As stated, *“No, honestly, I do not understand the CAT curriculum. ICT is not my field of specialization. I rely heavily on the textbook. As a new teacher, I still need training on how to teach ICT.”*

The findings showed that the SMT members and ICT coordinators felt that teachers who teach CAT in their schools understand the curriculum, as they are guided by it, and the department heads monitor. SMT member 6 from School C claimed, *“Yes, CAT teachers understand the curriculum, as they are guided by it to prepare their lessons, which are submitted to the department heads.”* SMT member 5 from School B stated, *“Yes, I believe CAT teachers understand the curriculum, as it serves as the guide on what and when to teach.”* ICT coordinator 8 from School B commented, *“Yes, I think CAT teachers understand the curriculum, as they constantly ask for support when they encounter technical challenges in the computer lab.”* It was discovered that not all the teachers know how the CAT curriculum works. ICT coordinator 7 from School A indicated, *“Yes, I am not sure if teachers*

understand the CAT curriculum, as one of the ICT teachers indicated that the subject is out of her scope of field.”

The findings revealed that some learners agreed that teachers understood the CAT curriculum clearly, as they often passed the subject with high marks. Learner 4 from School B said, *“I think my teacher understands the CAT curriculum because most of us in class pass the subject very well.”* Learner 6 from School 6 stated, *“I think the CAT teacher understands the curriculum because we are able to practice alone in the computer lab following the instructions he gave us, and most of us achieve higher marks during tests.”* It was found that some of the learners expressed a lack of knowledge about CAT and its relation to real life. Learner 1 in School A uttered, *“Even though most of us pass the subject, we do not understand it; we learn to pass, and we forget easily after the test, as we cannot relate it to our daily life.”* The findings from the study on the comprehension of the CAT curriculum indicate a complex landscape of understanding among teachers and learners. While many teachers reported a clear understanding of the curriculum, using it as a guide for lesson planning and assessments, there remains a significant portion of teachers, particularly novice teachers, who feel unprepared and reliant on textbooks due to a lack of specialization in the subject.

Complying with CAT Rules and Regulations

The theme, complying with CAT rules and regulations, was developed from the staff interview. Question 4 and learners’ open-ended Question 3: *Are teachers complying with the rules and regulations associated with CAT? Please respond with "yes," "no," or "sometimes," and elaborate.* It was found that most teachers in two schools adhere to the CAT guidelines because learners excel in this subject. Teacher 2 from School B highlighted, *“Yes, we do follow the rules and regulations of the CAT curriculum because I often get a 100% pass rate.”* Teacher 3 from School C responded, *“Yes, all the rules and regulations are being followed all the time because we are monitored by the department head.”* The findings revealed that the other teachers did not adhere to the CAT rules and regulations because they never attended any training in the subject and preferred to use textbooks. Teacher 1 from School A responded, *“No, I do not follow all the rules and regulations of CAT because I do not have the curriculum.”*

The findings demonstrated that SMT members and ICT coordinators were complying with the rules and regulations of CAT. SMT member 5 from School B stated, *“Yes, most teachers are following the rules and regulations; hence, we receive excellent results from this subject.”* SMT member 6 from School C confirmed, *“Yes, when we do a class visit, we find teachers following the rules and regulations as they adhere to the lesson plan developed with the guidance of the curriculum.”* The ICT coordinator 5 from School B concurred, *“Yes, they are being followed all the time.”* ICT coordinator 6 from School C stated, *“Yes, I think rules and regulations of CAT are being followed all the time by the teachers.”* It was found that the other school did not comply with CAT's rules and regulations. In this regard, the ICT coordinator 4 from School A indicated, *“No, the rules and regulations are not being followed as they should be by the CAT teachers; learners struggle to operate the computers.”*

The findings indicate that learners perceived most teachers to be competent in teaching CAT; this implies that they are guided by the curriculum when they teach the subject. Learner 3 from School B uttered, *“I think teachers do comply with the CAT rules and regulations because we are able to execute the task, and I sometimes use my mom’s laptop at home to practice.”* Learner 6 from School C highlighted, *“Teachers do comply with CAT rules and regulations because we understand them very well, and we score high marks. This is one of my favorite subjects.”* The findings from the interviews and open-ended questions reveal mixed adherence to the CAT rules and regulations among teachers across different schools. While a significant number of teachers in Schools B and C demonstrate compliance, as evidenced by high pass rates and positive monitoring feedback, there are notable exceptions in School A, where some teachers lack the necessary training and resources, leading to non-compliance.

Teacher Competencies to Teach CAT

The theme, teachers' competencies to teach CAT, was created from staff interviews. Question 5: *What are the teacher's competencies for teaching CAT?* The findings show that most teachers indicate that their competence is good in teaching CAT because they attend workshops to improve themselves and are committed. Teacher 2 from School B stated, *"Good, we are very competent in teaching CAT, and we also attend workshops."* Teacher 3 from School C declared, *"Good, we are very competent and dedicated to teaching CAT."* It was found that a novice teacher indicated poor competence, which is below the required level because of a lack of content knowledge and attendance of CAT-related professional development to know more about the subject. Teacher 1 from School A stated, *"Bad, I feel I am not competent. ICT is not my field of specialization. This is a new subject; I think the school should arrange ICT and CAT-related workshops. Moreover, I was not provided with the CAT curriculum. I used a textbook."*

It was discovered that the SMTs and ICT coordinators felt that CAT teachers in their school are competent because they are committed, as their pass rate is high. SMT member 5 from School B stated, *"Good, teachers are very committed to learning about CAT."* An SMT member from School C responded, *"The competency in teaching CAT is good, as the pass rate is always high across all the grades."* The ICT coordinator 8 from School B stated, *"Good, they are very competent and dedicated to teaching CAT."* ICT coordinator 7 from School A contended, *"On average, it's too bad; the teachers are not competent, as they are sometimes not clued up about other concepts, and they rely on him for support, and they never attended workshops."* The ICT coordinator 9 from School C noted, *"On average, teachers are competent in teaching CAT as a subject; they follow the curriculum and use textbooks and other resources to enhance the subject."* The findings regarding teachers' competencies in teaching CAT reveal a significant divide in proficiency levels, largely influenced by professional development opportunities and individual commitment.

DISCUSSION

In this study, the implementation of the CAT curriculum in rural secondary schools reveals a complex interplay among teacher awareness, access to resources, and pedagogical practices. The findings indicate that while most teachers acknowledge the existence of the CAT curriculum, there is a significant gap in its effective implementation. For instance, many teachers reported having access to the curriculum but did not consistently follow it in their teaching practices. This inconsistency can lead to varied learning experiences for students, as some teachers may not fully understand the curriculum or how to apply it effectively. Kong emphasizes the importance of integrating information technology into the curriculum to foster information literacy among learners. Furthermore, Kong argues that a well-structured curriculum should not only focus on technical skills but also on developing critical thinking and problem-solving abilities.³⁸ This aligns with the findings that suggest teachers need professional development to enhance their understanding and implementation of the CAT curriculum.³⁹

Sithole discusses the need for ongoing professional development and resource allocation to improve ICT implementation in rural schools, which resonates with the current study's findings regarding the need for teacher training and support.⁴⁰ Harverson also highlights the role of teacher competence in the successful delivery of technology-based curricula.⁴¹ The findings from this study echo this sentiment, emphasizing that teachers' lack of training and support significantly hampers their ability to implement the CAT curriculum effectively. Furthermore, the study suggests that ongoing evaluation and adaptation of the curriculum are necessary to meet the evolving technological landscape

³⁸ Siu Cheung Kong, "A Curriculum Framework for Implementing Information Technology in School Education to Foster Information Literacy," *Computers & Education* 51, no. 1 (2008): 129–41.

³⁹ Kgosi, Makgato, and Skosana, "Teachers' Views on the Application of Educational Technologies in the Classroom: A Case of Selected Tshwane West Secondary Schools in Gauteng."

⁴⁰ Nosihle Veronica Sithole, "Social Issues That Negatively Impact Information and Communication Technology Integration in South African Township Schools," *Artha Journal of Social Sciences* 24, no. 2 (2025): 37.

⁴¹ J. Harverson, "The Implications of Service-Learning for Technology Studies," in *Information and IT Literacy: Enabling Learning in the 21st Century* (London: Facet Publishing, 2025), 45–52.

and the needs of learners. This inconsistency aligns with findings from previous studies, which suggest that effective implementation is often hindered by inadequate training and resources.⁴²

The inconsistency in implementation corroborates findings from previous studies, which indicate that effective curriculum delivery is often obstructed by insufficient training and resources.⁴³ Activity theory provides a useful framework for understanding these dynamics, as it emphasizes the importance of social context in learning and teaching. The interaction between teachers, learners, and the curriculum is mediated by tools and resources, which can either facilitate or hinder the learning process.⁴⁴ Di Pietro and Muñoz note that educational technology can play a crucial role in bridging gaps in learning, particularly in disadvantaged contexts.⁴⁵ In rural areas, where access to resources may be limited, the effectiveness of the CAT curriculum is likely to be compromised, necessitating a more integrated approach to teacher training and resource allocation.

The findings showed that the theme of access to the CAT curriculum reveals that while all staff members reportedly have access to the curriculum, there are significant discrepancies in its actual implementation in the classroom. In this case, Kong emphasizes the necessity of integrating technology into educational curricula to foster information literacy.⁴⁶ The findings indicate that although teachers acknowledge the CAT curriculum, some do not use it effectively in their teaching practices. For instance, while one school confirmed having the curriculum accessible, some teachers opted to rely on textbooks instead, which raises concerns about the fidelity of curriculum implementation. Their reliance on traditional textbooks may hinder students' ability to engage with the curriculum's intended learning outcomes.

This situation reflects broader issues in educational policy implementation, where access does not guarantee effective use. Kong emphasizes that access to a well-structured curriculum is essential for developing learners' competencies in using technology effectively.⁴⁷ The findings from this study highlight that even with access to the CAT curriculum, teachers' lack of training and understanding can lead to inconsistent implementation. This sentiment is echoed by Harverson, who indicated the importance of teacher training and support in the successful delivery of technology-based curricula.⁴⁸ This inconsistency can result in varied learning experiences for learners, depending on their teachers' adherence to the curriculum.

Sithole discusses the critical role of professional development in enhancing teachers' capabilities to implement technology effectively in the classroom, which aligns with the current study's findings regarding the need for comprehensive training.⁴⁹ In activity theory, the effectiveness of curriculum implementation is mediated by the tools and resources available to teachers.⁵⁰ In this case, while teachers have access to the CAT curriculum, the lack of training and reliance on traditional textbooks may limit their ability to use the curriculum effectively. Cheung and Shi further emphasize that educational technology can catalyze improving teaching practices, particularly in under-resourced environments.⁵¹ This highlights the need for a more integrated approach to professional development and resource allocation, ensuring that teachers are equipped to engage with the curriculum in a

⁴² F M Mwaniki, F K Nyamu, and M M Waititu, "An Exploration of the Integration of Ict in Mathematics Lessons in Secondary Schools, Garissa County, Kenya," *Journal of Education* 4, no. 1 (2024): 12–22.

⁴³ Mwaniki, Nyamu, and Waititu, "An Exploration of the Integration of Ict in Mathematics Lessons in Secondary Schools, Garissa County, Kenya."

⁴⁴ Engeström, "Expansive Visibilization of Work: An Activity-Theoretical Perspective."

⁴⁵ Giorgio Di Pietro and Jonatan Castaño Muñoz, "A Meta-Analysis on the Effect of Technology on the Achievement of Less Advantaged Students," *Computers & Education* 226 (March 2025): 105197, <https://doi.org/10.1016/j.compedu.2024.105197>.

⁴⁶ Kong, "A Curriculum Framework for Implementing Information Technology in School Education to Foster Information Literacy."

⁴⁷ Kong, "A Curriculum Framework for Implementing Information Technology in School Education to Foster Information Literacy."

⁴⁸ Harverson, "The Implications of Service-Learning for Technology Studies."

⁴⁹ Sithole, "Social Issues That Negatively Impact Information and Communication Technology Integration in South African Township Schools."

⁵⁰ Engeström, "Expansive Visibilization of Work: An Activity-Theoretical Perspective."

⁵¹ Alan C.K. Cheung and Jieping Shi, "Effectiveness of Educational Technology Applications for Struggling Readers in Secondary Grades: A Meta-Analysis," *Educational Research Review* 50 (February 2026): 100764, <https://doi.org/10.1016/j.edurev.2026.100764>.

meaningful way. Di Pietro and Muñoz also note that the integration of technology in education must be accompanied by adequate support and training to maximize its potential benefits for learners.⁵²

It may be seen that the theme of comprehension of the CAT curriculum reveals a complex landscape of understanding among teachers and learners. While many teachers reported a clear understanding of the curriculum, using it as a guide for lesson planning and assessments, there remains a significant number of teachers, particularly novice teachers, who feel unprepared and rely heavily on textbooks due to a lack of specialization in the subject. This gap in understanding emphasizes the need for targeted professional development, as effective teaching of CAT requires not only knowledge of the curriculum but also the ability to integrate it into pedagogical practices.⁵³ For instance, Kong argues that teachers must have a deep understanding of the curriculum to effectively guide learners in developing these competencies.⁵⁴

It was revealed that while some teachers feel confident in their understanding of the CAT curriculum, others express uncertainty, particularly those who are new to the field. The findings revealed that teachers' varying levels of comprehension of the CAT curriculum can significantly impact learners' learning experiences. This was revealed by some of the learners, who perceive their teachers as knowledgeable, evidenced by their high marks, while others express a disconnect between the curriculum and its practical application in real life, suggesting that academic success does not equate to true comprehension.

Activity theory points out that the interaction between teachers, learners, and the curriculum is mediated by the tools and resources available, which can either facilitate or hinder the learning process.⁵⁵ In this context, the varying levels of teacher comprehension can create disparities in learner learning experiences. Teachers who lack a comprehensive understanding of the CAT curriculum may struggle to connect theoretical knowledge with practical applications, leading to superficial engagement with the material. Furthermore, the findings suggest that the disconnect between academic performance and genuine comprehension may stem from a lack of opportunities for learners to engage with the curriculum in meaningful ways. As Razak et al. point out, professional development programs should focus on equipping teachers with the skills necessary to foster critical thinking and real-world application of the curriculum.⁵⁶ Sithole emphasizes the importance of ongoing professional development to enhance teachers' understanding and effective implementation of technology in the classroom.⁵⁷ By enhancing teachers' understanding and pedagogical strategies, teachers can create more cohesive learning experiences that bridge the gap between theoretical knowledge and practical application. Cheung and Shi further support this by highlighting that educational technology can catalyze improving teaching practices, particularly in under-resourced environments.⁵⁸ Di Pietro and Muñoz also note that the integration of technology in education must be accompanied by adequate support and training to maximize its potential benefits for learners.⁵⁹

It was found that the theme of complying with CAT rules and regulations indicates mixed adherence among teachers across different schools. The findings reveal that most teachers in Schools B and C adhere to the CAT guidelines, as evidenced by high pass rates and positive monitoring feedback from SMTs and teachers. This finding was supported by Teacher 2 from School B, which highlights the correlation between compliance and learner success. This sentiment is supported by Kong, who indicated that when teachers are well-informed about the curriculum and its regulations,

⁵² Di Pietro and Castaño Muñoz, "A Meta-Analysis on the Effect of Technology on the Achievement of Less Advantaged Students."

⁵³ Razak et al., "Successful Implementation of Information and Communication Technology Integration in Malaysian Public Schools: An Activity Systems Analysis Approach."

⁵⁴ Kong, "A Curriculum Framework for Implementing Information Technology in School Education to Foster Information Literacy."

⁵⁵ Engeström, "Expansive Visibilization of Work: An Activity-Theoretical Perspective."

⁵⁶ Razak et al., "Successful Implementation of Information and Communication Technology Integration in Malaysian Public Schools: An Activity Systems Analysis Approach."

⁵⁷ Sithole, "Social Issues That Negatively Impact Information and Communication Technology Integration in South African Township Schools."

⁵⁸ Cheung and Shi, "Effectiveness of Educational Technology Applications for Struggling Readers in Secondary Grades: A Meta-Analysis."

⁵⁹ Di Pietro and Castaño Muñoz, "A Meta-Analysis on the Effect of Technology on the Achievement of Less Advantaged Students."

they are more likely to implement it successfully.⁶⁰ However, there are notable exceptions, particularly in School A, where some teachers reported non-compliance due to a lack of training and resources. To eradicate this challenge, Kong emphasizes the importance of a structured curriculum that provides clear guidelines for teachers, which is essential for fostering an effective learning environment.⁶¹ Without such support, teachers may struggle to adhere to the curriculum, leading to inconsistencies in implementation and ultimately affecting student learning experiences.

The findings also suggest that ongoing evaluation and adaptation of the curriculum are necessary to keep pace with the evolving technological landscape and the diverse needs of learners. This perspective is supported by activity theory, which posits that the effectiveness of educational practices is mediated by the tools and resources available to teachers.⁶² In this context, the varying levels of compliance among schools can be understood as a reflection of the differing support systems in place. Schools that provide adequate training and resources enable teachers to align their practices with the CAT guidelines, thereby enhancing student engagement and outcomes.

Moreover, the findings indicate that while some schools demonstrate compliance with CAT regulations, a more cohesive approach is needed to ensure that all teachers are equipped to meet curriculum standards. This systemic support is crucial for fostering an equitable educational environment where all learners can thrive in CAT. By investing in professional development and resource allocation, educational Authorities can help bridge the gap between compliance and effective implementation, ultimately enhancing learner engagement and success in the CAT curriculum. Sithole emphasizes the need for comprehensive training and resources to support teachers in adhering to curriculum standards.⁶³ Cheung and Shi further support this by highlighting that effective implementation of educational technology requires ongoing professional development and support for teachers.⁶⁴ Di Pietro and Muñoz also note that the integration of technology in education must be accompanied by adequate support and training to maximize its potential benefits for learners.⁶⁵

The theme of teacher competencies to teach CAT reveals a significant divide in proficiency levels among teachers, largely influenced by professional development opportunities and individual commitment. The findings indicate that most teachers express confidence in their abilities, attributing their competence to participation in workshops and a strong dedication to the subject. Literature supports these findings, emphasizing the critical role of teacher competence in fostering learners' problem-solving abilities through technology.⁶⁶ Razak et al. argue that effective teaching in CAT requires not only technical skills but also pedagogical knowledge to engage learners meaningfully.⁶⁷ However, the presence of novice teachers who feel inadequately prepared highlights a critical gap in support and training. This disparity suggests that while some teachers thrive and contribute positively to student outcomes, others may struggle without proper training and curriculum materials.

The findings also reveal that while some SMTs and ICT coordinators generally perceive CAT teachers as competent, particularly when high pass rates are reported, mixed perceptions among teachers and SMTs in other schools regarding competence highlight the need for targeted professional development to ensure all teachers are equipped to meet the curriculum standards. Recent literature supports these findings, emphasizing the critical role of teacher competence in fostering learners' problem-solving abilities through technology. Furthermore, Smit identifies opportunities for CAT

⁶⁰ Kong, "A Curriculum Framework for Implementing Information Technology in School Education to Foster Information Literacy."

⁶¹ Kong, "A Curriculum Framework for Implementing Information Technology in School Education to Foster Information Literacy."

⁶² Engeström, "Expansive Visibilization of Work: An Activity-Theoretical Perspective."

⁶³ Sithole, "Social Issues That Negatively Impact Information and Communication Technology Integration in South African Township Schools."

⁶⁴ Cheung and Shi, "Effectiveness of Educational Technology Applications for Struggling Readers in Secondary Grades: A Meta-Analysis."

⁶⁵ Di Pietro and Castaño Muñoz, "A Meta-Analysis on the Effect of Technology on the Achievement of Less Advantaged Students."

⁶⁶ Stoltz, Bunt, and van Zyl, "Leveling up Learning: Enhancing Self-Directed Learning in Computer Applications Technology with Classcraft."

⁶⁷ Razak et al., "Successful Implementation of Information and Communication Technology Integration in Malaysian Public Schools: An Activity Systems Analysis Approach."

curriculum benchmarking and refinement, suggesting that ongoing evaluation is necessary to adapt to the evolving technological landscape.⁶⁸

Activity theory provides a valuable framework for understanding these dynamics, as it emphasizes the role of social context and the interaction between teachers, learners, and the curriculum. The effectiveness of educational practices is mediated by the tools and resources available to teachers.⁶⁹ In this context, the varying levels of teacher competence can be seen as a reflection of the differing support systems in place. Teachers who have access to professional development opportunities and resources are better positioned to implement the CAT curriculum effectively, thereby enhancing student engagement and learning outcomes.

The findings highlight the critical need for targeted teacher training and professional development to bridge the gaps in teachers' understanding and implementation of the CAT curriculum. By focusing on tailored training programs that address specific challenges faced by teachers in rural areas, stakeholders can enhance their pedagogical skills and confidence in delivering the curriculum effectively. Furthermore, the investigation into socio-economic factors revealed that disparities between rural and urban schools significantly impact the implementation of the CAT curriculum. For instance, limited access to resources in rural areas can hinder the integration of technology in teaching practices. To address these challenges, this study proposes innovative solutions such as mentorship programs for novice teachers, which can provide ongoing support and guidance, and community engagement initiatives that foster collaboration between schools and local organizations. These interventions not only aim to enhance the relevance of the CAT curriculum to learners' lives but also empower teachers to create more inclusive and effective learning environments. Additionally, the activity theory has been engaged as a theoretical framework to analyze the interactions between teachers, learners, and the curriculum. This approach offers a novel perspective on how these dynamics influence the implementation process, revealing the intricate relationships that exist within the educational environment. By examining these interactions, key areas have been identified for improvement and strategies have been developed that foster a more cohesive and supportive learning experience for all stakeholders involved in the CAT curriculum.

RECOMMENDATIONS

It is essential to establish comprehensive professional development programs tailored specifically for CAT teachers. Schools should ensure that adequate resources, including access to computers and internet connectivity, are available to both teachers and students. SMTs should implement regular monitoring and support systems to ensure that teachers adhere to the CAT curriculum guidelines. This could include classroom observations, feedback sessions, and collaborative planning meetings. It is critical to establish mentorship programs where experienced CAT teachers can support novice teachers. This can help bridge the gap in knowledge and skills, ensuring that all teachers are equipped to deliver the curriculum effectively. Teachers should be encouraged to integrate real-world applications of CAT concepts into their lessons. Future research should consider longitudinal studies to track the progress of CAT curriculum implementation over time. Further research should investigate the specific competencies required for effective teaching of the CAT curriculum. This could include examining the relationship between teacher training, confidence, and student performance. Studies should explore how socioeconomic factors influence the implementation of the CAT curriculum in rural schools. Conduct comparative studies between rural and urban schools to identify differences in curriculum implementation and outcomes. Future research could further apply activity theory to explore the interactions between teachers, learners, and the curriculum in various educational contexts. This theoretical framework can provide deeper insights into the systemic factors affecting curriculum delivery. Future research may consider integrating such staff demographic data to provide a more comprehensive view of the factors influencing curriculum implementation.

⁶⁸ Smit, *Grade 10 Computer Applications Technology Learners' Experience of the Blended Learning Approach*.

⁶⁹ Engeström, "Expansive Visibilization of Work: An Activity-Theoretical Perspective."

CONCLUSION

This study aimed to address the gap in the literature regarding the effective implementation of the CAT curriculum in rural secondary schools within the Gauteng North district of South Africa. It was highlighted that there is a critical need to understand how various factors, including teacher competencies, access to resources, and adherence to curriculum guidelines, influence the educational outcomes of learners in this context. The findings revealed several significant perceptions in the identified themes. It may be seen that, based on the implementation of the CAT curriculum, while most teachers acknowledged the existence of the CAT curriculum, there was a notable inconsistency in its implementation. Many teachers reported using the curriculum as a guide, yet some did not follow it effectively, leading to varied learning experiences for learners. It was pointed out that all staff members reportedly had access to the CAT curriculum; however, discrepancies in its actual use were evident. Some teachers relied heavily on textbooks rather than the curriculum, which raises concerns about the fidelity of curriculum implementation and its alignment with educational outcomes. This finding emphasizes the importance of not only providing access to resources but also ensuring that teachers are equipped to use them effectively. The study found a complex landscape of understanding among teachers and learners regarding the CAT curriculum. Although many teachers felt confident in their understanding, novice teachers expressed uncertainty and reliance on textbooks. The adherence to CAT guidelines varied among schools, with some teachers demonstrating compliance while others struggled due to a lack of training and resources. The findings indicated a significant divide in teacher competencies, influenced by professional development opportunities. While some teachers expressed confidence in their abilities, others, particularly novice teachers, felt inadequately prepared. This study contributes to the body of knowledge by illuminating the multifaceted challenges and opportunities associated with the implementation of the CAT curriculum in rural secondary schools. Addressing these challenges through targeted professional development, resource allocation, and ongoing evaluation of teaching practices is essential for enhancing educational outcomes and ensuring that learners are adequately prepared for the demands of the digital world.

Limitation of the Study

The study primarily focused on the implementation of the CAT curriculum in selected rural secondary schools in the Gauteng North district of South Africa. This narrow focus may limit the generalizability of the findings to other contexts or regions. One notable limitation of this study is the absence of biographical data for the staff members involved. The decision to prioritize qualitative insights through semi-structured interviews and open-ended questionnaires over demographic details was made to maintain a concentrated focus on the curriculum's implementation. However, this choice may limit the generalizability of the findings and the ability to connect participant backgrounds to their experiences with the CAT curriculum. The study highlights that many teachers have not attended professional development programs related to CAT, which affects their ability to implement the curriculum effectively. However, it does not provide detailed data on the specific training needs or the extent of professional development available to teachers. The findings are based on self-reported data from teachers and learners, which may introduce bias. Participants may provide socially desirable responses rather than accurately reflect their experiences and practices. These limitations suggest that while the study provides valuable understanding into the implementation of the CAT curriculum, further research is needed to address these gaps and enhance understanding of effective practices across diverse educational contexts.

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