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The Influence of Motivation on Computer-Aided Learning (CAL) Adoption: Exploring Accounting Teachers' Perspectives

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ABSTRACT

Despite the widespread use of electronic accounting systems in professional practice, South African accounting education often lags, with teachers frequently prioritising manual accounting skills over the integration of Computer-Aided Learning (CAL). This reliance on traditional methods, potentially shaped by a complex combination of internal and external motivational factors, can leave accounting learners underexposed to essential software and digital skills. This qualitative case study explored motivational factors affecting CAL adoption among six Gauteng private school teachers. Using Self-Determination Theory (SDT), the study examined the range of motivational orientations impacting CAL integration, from a-motivation to intrinsic motivation. Findings revealed limited CAL use, primarily driven by extrinsic factors like compliance and efficiency. A-motivation, rooted in feelings of incompetence and negative experiences, hindered adoption significantly. Motivational congruence, aligning personal values with CAL, was crucial for engagement. SDT's psychological needs -autonomy, competence, and relatedness -were vital for effective CAL integration. The study recommends targeted professional development focusing on pedagogical CAL strategies, robust technical support, and access to relevant software resources. By fostering a supportive motivational climate that addresses these needs, accounting education can effectively equip learners with the digital skills essential for the modern accounting profession, preparing them for a lifetime of technological integration.

Keywords: *Computer-Aided Learning (CAL); Teacher Motivation; Self-Determination Theory (SDT); Accounting Education; Technology Integration; Extrinsic Motivation; A-motivation*

INTRODUCTION

The rapid digitalization of the accounting profession necessitates a corresponding shift in accounting education (Arek-Bawa & Reddy, 2024; Wolcott & Sargent, 2021). Modern accountants require higher-level critical thinking skills, developed through exposure to relevant technologies, to thrive in this evolving landscape (Wolcott & Sargent, 2021). However, despite the acknowledged benefits of technology in education (Aditya & Suranto, 2024; Kannan, Akila, & Zhia, 2024), its potential remains underutilized when teachers are hesitant to embrace it, particularly in rapidly evolving fields like accounting. This hesitancy can be attributed, in part, to a complex combination of motivational factors. Arek-Bawa & Reddy (2024) highlighted the gap between possessing technological pedagogical content knowledge (TPACK) and actual classroom practice, with many academics still relying on traditional print textbooks in online learning, resulting in a "weak form" of digital transformation.

This hesitancy is particularly concerning in contexts where skills gaps have been identified. Although earlier studies, such as Wessels (2004), identified competency gaps in South Africa, current research stresses the importance of skills beyond technical proficiency. For example, Chomunorwa, Mashonganyika, & Marevesa (2022) pointed out the scarcity of research focusing on educators' perspectives and challenges regarding technology integration, particularly in underprivileged South African communities. They, and others (Ali, 2023; Aditya & Suranto, 2024), highlighted barriers such as the digital divide, time constraints related to training, and varying levels of technology understanding among lecturers. When curricula only mention technology without mandating its use and providing support, teachers may continue relying on traditional methods. This is often driven by inadequate infrastructure and insufficient teacher training in integrating

computer-assisted learning (Department of Basic Education, 2011). As a result, Arek-Bawa & Reddy (2024) contended that teaching practices, more than the technology itself, are crucial in education. Training should therefore concentrate on pedagogical approaches using technology, rather than simply on technical proficiency.

To effectively address this challenge, a deeper understanding of teacher motivation is essential. Merely providing access to technology is insufficient; we must identify the factors that influence teachers' willingness to integrate Computer-Aided Learning (CAL) to bridge the gap between current practices and the digital demands of the accounting profession. Therefore, this study aims to explore the motivational factors that shape accounting teachers' attitudes toward and integration of CAL in private schools within the Tshwane District of Gauteng, South Africa. Specifically, guided by Self-Determination Theory (Ryan & Deci, 2024) and the Self-Determination Continuum, this study investigates how teachers' experiences of autonomy, competence, and relatedness influence their motivation to integrate CAL into their teaching practices. By understanding these influences, this research seeks to develop targeted strategies for enhancing CAL integration, ultimately empowering learners to excel in the digitally driven accounting profession.

LITERATURE REVIEW

This literature review examines the digital transformation of accounting education, the potential and challenges of Computer-Aided Learning (CAL), and the central role of teacher motivation, particularly through the lens of Self-Determination Theory (SDT). It concludes by identifying key research gaps that this study aims to address.

The Digital Transformation of Accounting Education

The accounting profession is undergoing a rapid digital transformation, driven by advancements in technology and the increasing reliance on digital tools in the workplace. This necessitates a corresponding shift in accounting education to equip learners with the skills and competencies needed to thrive in this evolving landscape (Arek-Bawa & Reddy, 2024; Wolcott & Sargent, 2021). As Wolcott & Sargent (2021) argued, higher-level critical thinking skills, developed through exposure to relevant technologies, are essential for tomorrow's accountants to contribute effectively and ensure the profession's continued relevance. Arek-Bawa & Reddy (2024) observed that despite educators demonstrating technological pedagogical content knowledge (TPACK), the persistence of traditional print resources in online settings restricts the effective implementation of digital transformation, leading to a diminished impact on student learning.

While the digital transformation of accounting education faces challenges, a key tool in achieving this transformation is Computer-Aided Learning (CAL). Therefore, it is important to understand both the promise and the perils of CAL in an educational setting.

The Potential and Challenges of CAL: A Global and South African Perspective

Computer-Aided Learning (CAL) holds immense potential to revolutionize education, enhancing educational quality, expanding access, and optimizing curriculum delivery (Chomunorwa, Mashonganyika & Marevesa, 2022). In the digital era, educational transformation through CAL can enrich learning experiences, equipping learners with crucial digital skills demanded by the modern job market (Aditya & Suranto, 2024). Research consistently demonstrates a positive correlation between ICT adoption and academic performance, including heightened student engagement (Kannan, Akila, & Zhia, 2024). Furthermore, technology can foster deeper student understanding, promote collaborative learning, and facilitate improved teacher access to information (Ertmer et al., 2012; Nicholas et al., 2024). However, it is crucial to acknowledge that teacher perceptions of technology are complex, encompassing both positive and negative aspects (Abel, Tondeur, & Sang, 2022).

Despite these promising benefits, the implementation of CAL encounters significant challenges, both globally and particularly within the South African context. Research underscores the scarcity of studies examining educators' perspectives and challenges, especially within underprivileged communities (Chomunorwa, Mashonganyika & Marevesa, 2022). The persistent digital divide, time constraints associated with teacher training, and limitations in technological infrastructure pose substantial barriers (Ali, 2023; Chomunorwa, Mashonganyika & Marevesa, 2022). Moreover, varying levels of technological understanding among educators, the necessity for student digital competency development, and the critical importance of robust institutional support are pivotal considerations (Aditya & Suranto, 2024). Common obstacles to technology adoption include teacher resistance, low self-efficacy, increased workload, policy issues, and a lack of readiness (Ali, 2024).

While CAL integration is gaining global traction, implementation varies considerably. In South Africa, the digital divide and resource disparities present formidable challenges to achieving equitable CAL adoption (Chomunorwa, Mashonganyika & Marevesa, 2022). Tailored approaches to ICT adoption are imperative, taking into account the specific needs of diverse educational levels and institutional contexts (Kannan, Akila, & Zhia, 2024). Student preferences for course delivery modes, particularly in blended learning environments, must also be considered (Hu et al., 2024). Guzmán Mena (2020) highlighted a significant disconnect between faculty technology usage and student demands, emphasizing the importance of understanding faculty beliefs about learners. This disconnect highlights the necessity for a more complex and context-sensitive approach to CAL integration, one that fully considers both the potential benefits and the inherent challenges, especially within the unique educational landscape of South Africa. Given the challenges inherent in CAL implementation, it becomes evident that teacher motivation plays a crucial role in its success.

Teacher Motivation and CAL: A Critical Driver

Successful technology integration, especially CAL in accounting, depends heavily on teacher motivation. Providing access to technology is insufficient; teachers' beliefs, attitudes, and motivations are crucial (Chomunorwa, Mashonganyika & Marevesa, 2022; Kannan, Akila & Zhia, 2024). Educators need intrinsic motivation, along with technical skills and knowledge, to use technology effectively (Kafyulilo et al., 2016). Teachers who have access, believe in the benefits of technology, and possess the necessary skills are more likely to adopt it (Cantrell & Visser, 2011). Interactive, user-friendly technology is also more readily adopted (Opoku et al., 2020; Taherdoost, 2018). While technology use can be driven by trends and social influence, sustainable adoption requires intrinsic motivation (Chomunorwa, Mashonganyika, & Marevesa, 2022). Educators play a crucial role in student empowerment and motivation, particularly in challenging fields like accounting (Razak et al., 2020). To better understand the complexities of teacher motivation in this context, this study utilizes Self-Determination Theory (SDT) as its theoretical lens.

Self-Determination Theory (SDT)

SDT provides a framework for understanding motivation along a continuum, emphasizing the importance of three fundamental psychological needs – autonomy, competence, and relatedness – in fostering self-determined behaviour. Intrinsic motivation involves engaging in an activity for its inherent satisfaction (Razak et al., 2020; Deci & Ryan, 2008). SDT's focus on these psychological needs is particularly relevant to understanding teacher motivation for CAL integration, as it allows us to explore how teachers' experiences of control, mastery, and connection influence their engagement with technology. Different forms of extrinsic motivation vary in their autonomy (Ryan & Deci, 2024). Intrinsic motivation is essential for well-being, while identified regulation is important for performance (Van den Broeck et al., 2021). Contextual factors, such as culture, also influence motivation. Applying the principles of SDT, it becomes clear that various factors impact teachers' experiences of autonomy, competence, and relatedness, thus influencing their motivation.

Factors Influencing Teacher Motivation in CAL Integration

Various studies identify a range of factors that influence teachers' motivation to integrate technology, and these are particularly relevant when considering Computer-Aided Learning (CAL) in accounting education.

Intrinsic Factors: Intrinsic motivation, stemming from internal sources, is crucial for CAL integration. Teachers who perceive the pedagogical benefits of CAL for accounting concepts, feel confident in their ability to use accounting-specific software, and believe in the value of digital tools for developing students' practical accounting skills, are more likely to be intrinsically motivated (Aditya & Suranto, 2024; Ali, 2024; Kannan, Akila & Zhia, 2024). Cultivating student interest in CAL-based activities is also essential (Lázaro-Gutiérrez, et al., 2017; Razak et al., 2020).

Extrinsic Factors: Extrinsic motivation, arising from external sources, also plays a role. Teachers are more likely to adopt CAL when they receive administrative support for integrating accounting software, have access to professional development focused on CAL-specific strategies, and perceive that CAL does not significantly increase their workload related to accounting tasks (Ali, 2024; Kannan, Akila & Zhia, 2024).

Contextual Factors: Contextual factors, such as a school culture that values innovation in accounting education, access to up-to-date accounting software and hardware, and reliable technical support for CAL implementation, are also vital. Schools with a supportive environment are more likely to develop teacher motivation for CAL integration (Ali, 2023; Kannan, Akila & Zhia, 2024). The satisfaction of teachers' psychological needs within the accounting department context (Orsini et al., 2020) and student access to necessary technology for accounting-related CAL activities (Zweekhorst & Maas, 2015) are also crucial. While these factors provide a general understanding of technology integration, their specific application to CAL in accounting education requires further investigation, highlighting a significant research gap.

Teacher Motivation and CAL: Addressing the Research Gap

While the literature on teacher motivation and technology integration is extensive, a notable gap exists regarding the specific relationship between teacher motivation and CAL integration within accounting education. This study seeks to address this gap by focusing specifically on the motivational drivers that influence accounting teachers' decisions and practices related to CAL.

However, due to the distinct demands of accounting education, these general findings require further exploration within the specific context of CAL. For instance, the perceived relevance of CAL to accounting pedagogy, the availability of subject-specific digital resources, and the level of support provided for integrating accounting-specific software become particularly important factors. Therefore, by examining these *CAL specific* factors through the lens of Self-Determination Theory (SDT), this study aims to provide a deeper understanding of how accounting teachers' experiences of autonomy, competence, and relatedness directly influence their motivation to integrate CAL into their accounting classrooms. This research will contribute to the development of targeted interventions and support systems that promote self-determined motivation and enhance the effective integration of CAL in accounting education, ultimately better preparing learners for the digital demands of the accounting profession.

METHODOLOGY

This study employed a qualitative research approach to explore the complex motivational factors influencing accounting teachers' attitudes toward and integration of Computer-Aided Learning (CAL). A qualitative approach is particularly well-suited for this research aim as it allows for in-depth exploration of individual experiences, beliefs, and perspectives, providing rich insights into the "why" behind teachers' decisions regarding CAL adoption. Quantitative methods, while valuable for

measuring the extent of CAL use, would not provide the same depth of understanding regarding the motivational drivers behind teachers' choices. This aligns with the interpretive paradigm, which emphasizes understanding the social world through the meanings that individuals construct (Creswell & Poth, 2016).

A multiple case study design was adopted, allowing for the identification of patterns and variations in CAL adoption practices and motivational factors across different school contexts. While a single case study could provide rich detail about one particular context, the multiple case study design enabled a comparative analysis across cases, potentially revealing how different school environments or teacher characteristics influence motivation. This comparative element strengthens the study by providing a broader understanding of the factors at play. The "cases" in this study are individual teachers within their respective school settings.

Grounded in an interpretivist perspective, this study acknowledges the subjective nature of reality and seeks to understand how teachers' individual experiences, beliefs, and contextual factors shape their attitudes toward CAL. Interpretivism emphasizes meaning-making and the importance of understanding the world from the participants' perspectives. The focus is on interpreting the meanings teachers ascribe to their experiences with CAL, and how these meanings influence their motivation and subsequent actions. This interpretive lens is particularly relevant to SDT, as it recognizes the importance of individual perceptions and interpretations in shaping motivation (Deci & Ryan, 2000).

A purposeful sample of six accounting teachers from private schools in the Tshwane District was selected. Private schools were chosen due to their generally better resources and potential for CAL adoption, making them a relevant context for exploring the factors influencing technology integration. Participants were selected based on several criteria: (1) they were currently teaching Further Education and Training (FET) accounting; (2) they had access to computers, accounting software, and subject-specific digital resources in their classrooms; (3) they represented a range of teaching experience (from novice to experienced teachers); and (4) they varied in their reported levels of technology integration in their teaching practices. The reported levels of technology integration were initially identified through informal conversations with school administrators and preliminary discussions with potential participants, where teachers' general approaches to using technology in their classrooms were discussed. These criteria were chosen to capture a diversity of perspectives and experiences related to CAL adoption within a context where technology access was not a limiting factor.

Two data collection methods were employed to ensure data triangulation and a more comprehensive understanding of the phenomenon under study:

Semi-structured Interviews: In-depth, semi-structured interviews were conducted with each participant, with an average duration of 45 minutes. The interview protocol was designed to explore teachers' beliefs about the benefits and challenges of CAL, their experiences with technology integration (including specific examples of how they use or have tried to use CAL), their perceptions of their own competence in using CAL, their sense of autonomy in making decisions about technology use in their classrooms, and their feelings of relatedness with colleagues and administrators regarding technology integration. The interview questions were explicitly linked to the constructs of Self-Determination Theory (autonomy, competence, relatedness) to explore how these needs were being met (or not met) in the context of CAL adoption. The interviews were conducted face-to-face, recorded digitally, and transcribed verbatim. The interview protocol was pilot tested with two accounting teachers not included in the final sample to ensure clarity and relevance of the questions.

Questionnaires: A brief questionnaire was administered immediately after each interview. The questionnaire complemented the interviews by gathering demographic data (such as, years of teaching experience, highest qualification), information about access to technology resources, and

closed-ended questions using a 5-point Likert scale related to teachers' overall attitudes toward CAL. The questionnaire also included some open-ended questions to allow for additional comments or reflections on their experiences with CAL. The closed-ended questions were designed to provide supplementary data related to the SDT constructs, allowing for comparison with the interview data. The questionnaire was developed by the researcher, informed by existing questionnaires on technology adoption and motivation, and reviewed by two experts in educational technology for content validity.

The collected data (interview transcripts and questionnaire responses) were analysed using Thematic Analysis (TA), (Braun & Clarke, 2006). Thematic analysis was chosen for its flexibility and its ability to identify recurring patterns and themes within qualitative data. The analysis process involved several stages: (1) familiarization with the data (reading and re-reading transcripts); (2) coding the data (identifying key concepts and themes); (3) searching for themes (grouping codes into broader themes); (4) reviewing themes (refining and defining the themes); (5) defining and naming themes (producing a thematic map); and (6) writing the report (presenting the findings). The data structure used for the analysis was explicitly aligned with the Self-Determination Continuum (a-motivation, extrinsic motivation, intrinsic motivation) to facilitate the classification of teachers' motivational orientations toward CAL. This alignment allowed for a systematic analysis of how different motivational drivers relate to teachers' experiences and beliefs about CAL integration. The data analysis was conducted using QDA Miner software. To ensure rigor, inter-coder reliability was established by having a second researcher independently code a subset of the transcripts, and member checking was conducted by sharing the preliminary findings with the participants for their feedback.

Ethical considerations were paramount throughout the research process. Ethical clearance was obtained from the University of Pretoria’s ethics committee. All participants were provided with information about the study's purpose, procedures, and their right to withdraw at any time. Written informed consent was obtained from each participant before data collection commenced. Anonymity and confidentiality were ensured by using pseudonyms for all participants and securely storing all data.

FINDINGS

The findings of this study, presented below, are organised around the principals of the Self Determination Theory (SDT). This allows for a clear view of how different levels of motivation impact teachers' integration of CAL into their accounting classes.

A-motivation: Barriers to CAL Integration

A-motivation, the lowest level of self-determination, was characterized by a lack of intention to integrate Computer-Aided Learning (CAL) into teaching practices. This study revealed that feelings of incompetence, negative past experiences, and a perceived lack of value in CAL were interconnected factors contributing to a-motivation among accounting teachers.

Feelings of Incompetence: A significant barrier to CAL integration was teachers' perceived lack of competence. As Teacher 1 expressed:

> *“You know then you feel like such an idiot having to go ask again…It makes you feel incompetent…”*

This view highlights the vulnerability teachers felt when struggling with technology, particularly when they perceived a lack of support. This feeling of inadequacy was compounded by insufficient training and inadequate technical assistance. For instance, Teacher 1 lamented:

> *"...there’s not much support, so I try to load another… then the IT guy is like oh well, just try it again, like there’s not much support…”*

This underscores the importance of readily available and responsive technical support to empower teachers and alleviate anxieties about using CAL. Without this support, teachers were often overwhelmed and disengaged from technology integration. This directly correlates to the SDT construct of competence, as teachers who feel incompetent are unlikely to engage in a task.

Negative Past Experiences: Negative past experiences with CAL, particularly technical difficulties and perceived failures, significantly shaped teachers' attitudes and contributed to a-motivation. Teacher 1's experience with the Pastel program exemplifies this:

> *"...we used to do Pastel…A few years ago, the problem with it was that the actual Pastel programme didn't open up on the computer and when we actually did the exams, it didn't record all the marks…so then they learnt off by heart where the errors were, so they couldn't actually work Pastel they just knew to do the tests it's in this order….Very much parrot work and it took a lot of time…"*

This experience, coupled with the perceived ineffectiveness of the program, led to frustration and a negative association with CAL, making teachers hesitant to invest in future CAL initiatives.

Perceived Lack of Value: A-motivation also stemmed from a perceived lack of value in CAL. While explicit views expressed by the participants were limited, the reliance on traditional methods and the lack of engagement with advanced CAL tools suggested that some teachers did not fully appreciate CAL's potential to enhance learning outcomes. This aligns with the SDT principle that individuals are less likely to be motivated if they do not see the relevance or value of an activity.

Interconnectedness and Mitigation Strategies: These factors were interconnected. A lack of competence could lead to negative experiences, reinforcing feelings of inadequacy and a perception that CAL was not valuable. Addressing a-motivation required a holistic approach. Providing adequate training and support could boost competence, while showcasing successful CAL implementations and highlighting pedagogical benefits could address concerns about value. Creating a supportive environment was essential for overcoming these barriers and fostering a more motivated approach to CAL integration.

Extrinsic Motivation: External Pressures and Internalized Demands

Extrinsic motivation, characterized by engaging in activities for separate outcomes rather than inherent enjoyment, played a significant role in teachers' CAL adoption. However, these external drivers often did not translate into deep pedagogical integration.

External Regulation: The most controlled form of extrinsic motivation, external regulation, was evident in teachers' compliance with administrative requests and institutional policies. Teacher 3 stated:

> *"…I would like to say it was my own initiative but it's more actually our school that decided that we want to implement it as a whole…"*

This highlights how external pressure, in this case from school administration, initiated CAL adoption. While compliance led to CAL use, it did not necessarily reflect a genuine belief in its pedagogical value. Teachers complied to meet requirements, not to enhance teaching and learning. This is a direct example of external regulation, where behaviour is driven by external rewards and punishments.

Introjected Regulation: Beyond external compliance, a more internalized form of extrinsic motivation, known as introjected regulation, significantly influenced accounting teachers' CAL adoption. This type of motivation is characterized by individuals engaging in behaviours to maintain a sense of self-worth, avoid feelings of guilt or shame, or seek approval. In this study, introjected

regulation manifested in teachers' efforts to uphold a positive self-image, manage internalized pressures related to workload, and seek external validation.

Teachers demonstrated a concern for how their CAL integration practices reflected on their professional identity. For example, some expressed a desire to appear competent and up-to-date with technological advancements, fearing that a lack of CAL integration would be perceived as professional inadequacy. This drive to maintain a positive self-perception created an internal pressure to use CAL, even if the teachers did not inherently value its pedagogical benefits.

Self-Control and Workload Pressures: The pressure to manage workload and cover curriculum emerged as a significant factor. Teacher 4 described feeling overwhelmed:

> *"I thought I actually needed motivation. I was so...I was in tears at the beginning of the year. You know why? Because our books wouldn't download and I've got to start working and I know the curriculum. So there were hiccups at the beginning of the year. So because of these hiccups the teachers were so demotivated…And then you're so exhausted because you've got a hundred things to do and then they say this afternoon it's meeting...you're busy with IT training and it goes in one ear and out the other and then you're demotivated."*

This illustrates how external demands, such as curriculum requirements and administrative tasks, created internal pressure and feelings of being overwhelmed. Technical difficulties exacerbated these feelings, hindering effective CAL integration. This demonstrates how internalized pressures, a form of introjected regulation, can negatively impact motivation.

*Ego-Involvement and External Validation***:** The desire to maintain a positive self-image and gain external validation also influenced teachers' motivation. Teacher 2 commented:

> *"…I suppose I thought I am at a good private school, I want to present a good image…the desire to be at your fore".*

This suggests that some teachers used CAL, at least in part, to project a certain image or gain recognition. While ego-involvement can be a motivator, it does not necessarily reflect a genuine commitment to pedagogical improvement. This highlights the role of ego-involvement, another form of introjected regulation, in driving extrinsic motivation.

A Stepping Stone to Autonomy: Extrinsic motivation is not inherently negative. It can be a starting point for CAL engagement. However, in this study, compliance and internalized pressures were the primary drivers. This highlights the need for interventions that go beyond mandating CAL use and focus on creating a motivational climate that supports autonomy, competence, and relatedness. By fostering these psychological needs aligned with SDT, teachers may shift towards more self-determined motivation, moving from external regulation to identified and integrated regulation.

Intrinsic Motivation: Seeds of Internal Satisfaction

Intrinsic motivation, the most self-determined form of motivation, involves engaging in activities for inherent satisfaction and enjoyment. In this study, while elements of intrinsic motivation were present, they were less prominent than extrinsic drivers.

Practical Benefits and Efficiency: Identified regulation, a more autonomous form of extrinsic motivation, involves consciously valuing a behaviour. Some teachers expressed valuing CAL, but primarily for practical benefits rather than inherent pedagogical value.

Teacher 2 explained:

> *"Because it's easier than cleaning the board every… after every lesson…it just makes it easier…Laziness. Just wanting things to be easy and streamlined and wanting to look professional so…"*

This illustrates how some teachers valued CAL for efficiency and convenience. While recognizing these advantages is a step towards more autonomous motivation, it did not reflect a deep intrinsic interest in CAL's pedagogical potential. Similarly, other teachers mentioned time-saving and task streamlining as key benefits. These findings suggest that while teachers identified value in CAL, it was often tied to extrinsic outcomes, aligning with identified regulation, rather than the inherent enjoyment of using technology for teaching and learning.

Personal and Professional Development: Integrated regulation, the most autonomous form of extrinsic motivation, occurs when identified regulations are fully integrated with the self. Glimpses of integrated regulation were observed in teachers who viewed CAL as a tool for personal and professional growth.

Teacher 4 shared:

> *"As well. You've got...the thing is why you should be motivated is because it's personal development."*

This suggests that for some teachers, CAL integration was about aligning actions with personal values and goals for professional growth. This internalization of CAL's value, characteristic of integrated regulation, indicates a more self-determined approach to technology integration, moving closer to intrinsic motivation.

Enjoyment and Engagement: Intrinsic regulation, the purest form of intrinsic motivation, involves engaging in an activity for inherent enjoyment and satisfaction. While some teachers reported enjoying teaching with CAL, inherent satisfaction was not a dominant theme.

Teacher 6 stated:

> *"I enjoy it; they enjoy it, and everything else that comes with it just fits into place."*

This view suggests genuine enjoyment, a key indicator of intrinsic motivation. However, this level of intrinsic engagement was not widely reported. While some teachers found aspects of CAL use enjoyable, this enjoyment did not appear to be the primary driver of their technology integration.

The Need for Fostering Intrinsic Motivation: The limited presence of intrinsic motivation highlights the need for interventions beyond resources and training. Creating a motivational climate that fosters intrinsic motivation requires a focus on the psychological needs of autonomy, competence, and relatedness. Teachers need to feel ownership over CAL use, develop competence, and feel connected to a supportive community. Addressing these needs, in line with SDT, is crucial for cultivating deeper intrinsic motivation for CAL integration, leading to more effective and sustainable technology use in accounting education.

DISCUSSION

This study explored the intricate relationship between accounting teachers' motivational orientations and their attitudes toward and integration of Computer-Aided Learning (CAL). The findings reveal a complex interaction of factors, highlighting that access to technology alone is insufficient for effective CAL implementation. Instead, teachers' motivational profiles, shaped by a dynamic interaction of intrinsic and extrinsic forces, significantly influence their engagement with CAL.

The prominence of a-motivation among some participants underscores the critical role of competence and support. Feelings of inadequacy stemming from a lack of training and readily available assistance create significant barriers to CAL adoption. As Teacher 1 expressed, the feeling of being "an idiot" when struggling with technology, coupled with limited support from IT personnel, can lead to frustration and avoidance. This aligns with Self-Determination Theory (SDT) (Deci & Ryan, 2000), which posits that competence is a fundamental psychological need. When this need is unmet, particularly in the context of new technologies, a-motivation can arise, hindering engagement and integration. Moreover, negative past experiences, like Teacher 1's frustrating encounters with the Pastel program, can create lasting negative associations with CAL, further reinforcing a-motivated tendencies. These findings emphasize the need for sustained, high-quality professional development that not only equips teachers with technical skills but also addresses their anxieties and builds their confidence in using CAL.

Extrinsic motivation, particularly in its controlled forms, emerged as a dominant driver of CAL adoption. Compliance with administrative directives and institutional policies, as exemplified by Teacher 3's statement about school-wide mandates, often initiated CAL use. However, this externally driven adoption did not necessarily translate into a deep internalization of CAL's value or a commitment to its effective pedagogical integration. This aligns with research indicating that while extrinsic motivators can initiate behaviour, they may not be sufficient for sustained engagement or meaningful change (Deci & Ryan, 2000). Introjected regulation, where teachers internalize external pressures, also played a role. The pressure to manage workload, as described by Teacher 4, and the desire to maintain a professional image, as suggested by Teacher 2, highlight how internalized pressures can influence CAL use. These findings suggest that while extrinsic factors can prompt the use of CAL, they may not foster the meaningful integration necessary to transform teaching and learning. This highlights the limited impact of solely focusing on external regulation, and reinforces the need to move teachers towards more autonomous forms of extrinsic motivation.

While intrinsic motivation was less prominent, it was not entirely absent. Some teachers, like Teacher 4, recognized the value of CAL for personal and professional growth, indicating a degree of integrated regulation. This internalization of CAL's value suggests a more self-determined approach, where teachers align their personal goals with technology integration. Furthermore, the enjoyment reported by some teachers, like Teacher 6, while not universally shared, points towards the potential for fostering intrinsic motivation. The limited presence of pure intrinsic motivation underscores the need for interventions that nurture teachers' autonomy, competence, and relatedness in the context of CAL. Creating opportunities for teachers to experience the inherent rewards of effective CAL integration, such as witnessing student engagement and improved learning outcomes, could be key to cultivating intrinsic motivation. This aligns directly with SDT’s core tenets, reinforcing the importance of creating learning environments that satisfy these basic psychological needs.

The impact of these motivational orientations was clearly reflected in teachers' CAL integration strategies. The prevalent use of CAL for routine tasks, such as preparing presentations and managing grades, suggests that for many teachers, technology served primarily as a tool for efficiency rather than pedagogical innovation. The limited exploration of subject-specific software and the continued reliance on traditional teaching methods, as highlighted by Teacher 3's emphasis on manual accounting, further reinforce this observation. These findings suggest that simply providing access to technology is insufficient to drive meaningful change in teaching practices. Instead, it is crucial to address the underlying motivational factors that shape teachers' approaches to CAL integration, focusing on building competence, increasing autonomy, and fostering a sense of relatedness within their learning communities.

This study has some limitations. The sample size, while providing rich qualitative data, may limit the generalisability of the findings. Future research with larger samples and diverse contexts could provide a broader understanding of the factors influencing CAL adoption. Additionally, the study

relied primarily on self-reported data, which can be subject to social desirability bias. Direct observation of classroom practices could provide a more detailed and in-depth understanding of how motivation translates into actual CAL integration. Future research could utilize mixed methods, including classroom observations and student feedback, to provide a more comprehensive picture.

Despite these limitations, this study offers valuable insights into the complex relationship between motivation and CAL adoption in accounting education. The findings emphasise the need for interventions that go beyond simply providing resources and training. Instead, a focus on fostering intrinsic motivation by addressing teachers' psychological needs is essential for realizing the full potential of CAL. Creating a supportive environment that promotes autonomy, competence, and relatedness is crucial for moving teachers along the self-determination continuum, from a-motivation and controlled extrinsic motivation towards autonomous motivation and intrinsic motivation. This shift is essential for transforming accounting education and preparing students for the technologically driven world of work. Future interventions should focus on creating professional development programs that:

- **Build Competence:** Provide practical, hands-on training on CAL tools and strategies, with ongoing technical support.
- **Foster Autonomy:** Encourage teachers to experiment with CAL and adapt it to their teaching styles, allowing for flexible implementation.
- **Enhance Relatedness:** Create communities of practice where teachers can share experiences, learn from each other, and receive peer support.
- **Highlight Pedagogical Value:** Demonstrate the potential of CAL to enhance student learning and engagement, emphasizing its relevance to accounting education.

By focusing on these strategies, educational institutions can create a motivational climate that supports teachers' self-determined integration of CAL, ultimately improving accounting education and preparing students for the future.

CONCLUSION

This study has revealed the complex relationship between accounting teachers' motivational orientations and their attitudes toward and integration of Computer-Aided Learning (CAL). The findings underscore that successful CAL integration is not simply a matter of providing access to technology; it requires a deep understanding of the motivational factors that influence teachers' decisions and practices. Our research reveals that while some teachers recognize the value of CAL and demonstrate elements of self-determined motivation, extrinsic factors, particularly compliance and the pursuit of efficiency, often drive initial adoption. The persistence of a-motivation, linked to feelings of incompetence and negative past experiences, further emphasizes the critical need for targeted support and professional development.

The study's key finding - the importance of motivational congruence in CAL adoption - suggests that when teachers perceive alignment between their personal values and the use of technology, they are more likely to engage with CAL meaningfully. This aligns with Self-Determination Theory (SDT), highlighting the importance of satisfying the basic psychological needs of autonomy, competence, and relatedness. Interventions should focus not only on technical skills but also emphasize the pedagogical benefits of CAL and how it can contribute to teachers' professional goals and sense of self as effective educators. Furthermore, the limited integration of advanced CAL tools and the continued reliance on traditional teaching methods suggest that many teachers have not yet fully embraced the transformative potential of technology. This reinforces the need for sustained support and professional development that goes beyond basic training and fosters a culture of innovation and experimentation with CAL.

The implications of these findings are significant for accounting education in South Africa. Bridging the gap between current classroom practices and the digital demands of the accounting profession requires a multi-pronged approach. Firstly, addressing teachers' competence needs through ongoing, high-quality professional development is crucial. This training should focus on both technical skills and pedagogical strategies for effectively integrating CAL into accounting instruction. Secondly, creating a supportive environment that fosters teachers' autonomy and relatedness is essential. This includes providing teachers with the freedom to experiment with CAL, offering opportunities for collaboration and mentorship, and ensuring readily available technical support. Thirdly, emphasizing the congruence between CAL use and teachers' professional values can further enhance motivation. Highlighting the potential of CAL to improve student learning outcomes, enhance teaching effectiveness, and prepare students for the digital workplace can help teachers see the value in integrating technology into their classrooms.

This study contributes to the existing literature by providing an understanding of the complexities of the motivational factors that influence CAL integration in accounting education, specifically within the South African context. While the sample size limits the generalisability of the findings, the in-depth qualitative data offers valuable insights into the experiences and perspectives of accounting teachers. Future research could explore these issues with larger samples and across diverse educational settings. Additionally, longitudinal studies could examine how teachers' motivation and CAL integration practices evolve over time. Further investigation into the specific types of professional development that are most effective in promoting self-determined motivation for CAL integration would also be valuable.

Ultimately, equipping accounting learners with the digital skills they need to thrive in the modern workplace requires a concerted effort to support and motivate their teachers. By fostering a motivational climate that satisfies the basic psychological needs of autonomy, competence, and relatedness, we can empower accounting educators to not only prepare students for the technological demands of the profession but also inspire a lifelong journey of learning and innovation in a rapidly evolving digital landscape.

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