
Phenomenological Study of Cloud-Based Accounting Skills in Senior High School Curriculum

Victorino Paloma Pinawin, 0000-0002-3664-6837

Department of Education – Division of Quezon, Gumaca National High School,
Gumaca, Quezon, Philippines, victorino.pinawin@deped.gov.ph

Abstract - This study examines the impact of integrating cloud-based accounting skills (CBAS) into the senior high school (SHS) curriculum to enhance the academic and professional preparation of graduates. The analysis focuses on acquiring CBAS considering significant advancements in accounting technology, transforming access to real-time financial data and empowering businesses to make informed decisions based on up-to-date information. The study employs applicable theories to analyse the subjective experiences of participants, including factors such as prior knowledge and experiences, social learning processes, cognitive load, and acceptance and use of the software. Phenomenological research design is employed, utilizing a self-made open-ended questionnaire implemented through Google Forms. Participants are selected using purposive sampling, specifically targeting ABM graduates from the years 2018 to 2022, ensuring the relevance and richness of the data. Ethical guidelines are followed, and informed consent is obtained from all participants. To comprehensively analyse the data, a natural language processing application is utilized, enabling the identification, categorization, and extraction of meaningful codes, patterns, and themes. The interpretation of data involves exploring both textual and non-numerical data to uncover underlying meanings, themes, and patterns associated with CBAS. The findings highlight the importance of technical and soft skills as essential requirements for developing skilled and prepared graduates capable of meeting the evolving demands of the modern workplace. Integrating CBAS into the SHS curriculum necessitates focusing on three key aspects: professional development, technology investment, and collaboration and support. By prioritizing these aspects, students become more engaged and make the learning process guarantee their future careers.

Keywords - accounting system, collaboration, cloud-based, curriculum, senior high school

Introduction

As the use of technology in accounting continues to grow, and has revolutionized the way businesses manage their finances, it is becoming increasingly important for high school graduates to have the necessary skills to succeed in the field. Cloud-based accounting systems are becoming increasingly popular among businesses of all sizes. These systems allow for real-time access to financial data, enabling businesses to make informed decisions based on up-to-date information. Cloud-based accounting also allows for remote collaboration, improved efficiency, and enhanced security making it easier for team members to work together regardless of their location. Xero, QuickBooks, and other cloud-based accounting software offer businesses a range of features such as automated bookkeeping, invoicing, and financial reporting. These tools allow for easy collaboration between accountants and clients, and the ability to access financial data from anywhere with an internet connection. They are cost-effective, timesaving, and can improve the overall accuracy and efficiency of financial management (Holmes, 2023).

One study found that 67% of accountants and bookkeepers believe that cloud-based accounting has had a positive impact on their workflow efficiency, and 58% believe it has improved their client relationships (Flexi, 2021). Another benefit of cloud-based accounting is that it can be more secure than traditional systems, as cloud providers typically have stronger security protocols in place.

The implementation of the K-12 program in the Philippines aimed to the improvement of the employability of Senior High School (SHS) graduates particularly Accountancy, Business, and Management (ABM) graduates, as the subject of this study. The program has provided SHS students with specialized tracks, such as ABM, that equip them with the necessary skills and knowledge needed in their chosen field (Almerino et al., 2020). According to the Department of Education (DepEd) in the Philippines, there were 5.5 million students enrolled in SHS in 2019 (DepEd, 2019). Of these students, the majority were enrolled in the ABM strand, which includes accounting subjects and is designed for students who plan to pursue business and accounting-related courses in college (DepEd, 2019). According to a report by JobStreet Philippines, Business Administration and Accountancy are among the top 10 most in-demand courses by

employers in the country. Moreover, a survey by the Philippine Statistics Authority revealed that Business and Management graduates have a high employment rate of 93.4% and an average monthly salary of Php 26,238 (Mapa, 2022). These statistics indicate that there is a strong demand for these skills in the job market, making these degrees a viable option for students looking to secure stable and well-paying jobs after graduation.

The integration of cloud-based accounting software skills in SHS curriculum is a relatively new development in the Philippines, one way to ensure that students are adequately prepared for the workforce and there is a need to explore its effectiveness from the perspectives of graduates. This study aims to explore graduates' perceptions of the integration of cloud-based accounting software skills into the senior high school curriculum. The need for this study is urgent given the rapid pace of technological advancement and the changing demands of the accounting profession. According to Machera & Machera, 2017, there is an increasing need for accountants who are proficient in technology and able to use it to solve complex accounting problems.

Materials and Methods

This study seeks to explore the effectiveness of integrating cloud-based accounting software skills into the high school curriculum by examining its impact on graduates' academic and professional preparation and readiness. The study will draw upon several relevant theories to analyse the data collected, namely Phenomenology, Constructivism, Social learning theory, cognitive load theory, and the technology acceptance model. The study will use the combination of phenomenological qualitative research design with a self-made open-ended questionnaire collected online with ABM graduates who have completed their high school studies and document analysis. Purposive sampling will be used to select participants who are graduates of ABM strand from school year 2017-2018 to school year 2021-2022. The use of purposive sampling in this study is justified as it will allow the researcher to select participants who are most likely to provide rich and relevant data. According to Campbell et al., (2020), purposive sampling is commonly used in qualitative research when the goal is to select participants who have specific characteristics or experiences relevant to the study's research questions. Participants will be contacted via online means and asked to provide informed consent to participate in the study.

Semi-structured questions will be conducted with participants to collect data on their experiences, sentiments, perceptions with cloud-based accounting software not being included in their high school curriculum. The data collected from the respondents will be transcribed verbatim for analysis. In addition to the semi-structured questionnaire, document analysis will also be conducted to supplement and validate the data collected through the questionnaires. Relevant documents, such as school reports, curricular materials, and instructional plans will be analysed to provide a more comprehensive understanding of the integration of cloud-based accounting software into the high school curriculum.

The collected responses will be transcribed verbatim using a professional transcription service. The transcriptions will be reviewed and edited by the researcher for accuracy and completeness before analysis. The collected responses will be transcribed verbatim, and data will be analysed thematically using a combination of deductive and inductive approaches. The transcripts will be stored in a secure location and identified using unique participant identifiers to ensure confidentiality and anonymity.

The study will adhere to ethical guidelines for research involving human participants. Informed consent will be obtained from all participants before the start of the study, and they will be informed of their right to withdraw at any time without penalty. Participants' identities will be kept confidential, and their personal information will be anonymized to protect their privacy. The study will also be reviewed and approved by school authorities or the research ethics board before data collection begins.

Results and Discussions

In this qualitative research study, the primary focus is on analyzing the responses about cloud-based accounting software skills of 11 respondents who are graduates of GNHS from ABM strands between the years 2018 and 2022. This targeted group ensures a specific representation of individuals with relevant educational backgrounds. To facilitate a comprehensive analysis, MAXQDA, a natural language processing application, is utilized as a robust tool for data analysis. By employing MAXQDA, the researcher aims to identify, categorize, and extract meaningful codes, patterns, and themes from the rich responses provided by the participants. The interpretation of qualitative data plays

a crucial role in this study, as it involves exploring and comprehending non-numerical information gathered through textual data. Through meticulous analysis and rigorous approaches, the researchers seek to uncover the profound meanings, underlying themes, and intricate behavioral patterns that can offer valuable insights into the experiences, perceptions, and behaviors of individuals in relation to cloud-based accounting software skills.

Early exposure and adaptability, varying levels of preparedness, and the advantages of proper training in cloud-based accounting software.

The analysis of data for the first objective of the study provides valuable insights into the relevance and impact of cloud-based accounting software training on graduates' preparedness for their post-high school academic and professional pursuits. The responses reveal the significance of training in enhancing graduates' skills and knowledge in digital data management, which is increasingly important in today's work field. One respondent states, "If the graduates have been exposed to cloud-based accounting software, it is easier for them to adjust on how the basic accounting works using cloud-based software, and handle even the simplest form in making documents thru different platforms such as formulating formulas in Excel sheets." This early exposure enables graduates to handle tasks with ease and confidence, as another respondent mentions, "Simply, cloud-based accounting software-exposed graduates do have an awareness of the ideas and the concept of new stuff. We can easily adapt the usage, functions, and technically the application of the said matter, so that we can operate various transactions well." Well-trained graduates exhibit a high level of preparedness, enabling them to tackle more technical and complex operations in professional and non-professional settings. However, it is evident that graduates with average or limited training still have room for improvement. Another respondent states, "I think those who've been exposed are more aware and can easily adapt to probably a more advanced set up of work like what we have now, especially in urban areas and in Manila, compared to those who haven't yet experienced it." The data also highlights the relevance and usefulness of cloud-based accounting software skills in various industries and job roles. Graduates who have received proper training feel better prepared for their post-high school academic and professional pursuits. One respondent points out, "Cloud-based accounting software skills can be relevant and useful in a variety of industries and job roles, specifically in accounting and finance, business management, and information and technology." Accordingly, theme made from responses found associations in several literatures, as stated by Jain, A. (2022) using accounting software effectively has evolved into a fundamentally necessary ability in the accounting industry. Additionally, cloud-based accounting software is becoming more and more common, and it can give graduates a more relevant and realistic learning experience while also assisting them in honing the skills necessary to succeed in the job. Moreover, Tien, L. (2023) lists cloud-based accounting software as one of the six accounting talents that are most in demand right now. Cloud-based accounting software training can also improve other skills, including digital data management, fundamental accounting knowledge, and budgeting and forecasting abilities. Furthermore, success in the accounting industry also depends on soft skills like communication and problem-solving.

Students need to develop enthusiasm, networking skills, and a range of soft skills such as communication, collaboration, critical thinking, adaptability, and attention to detail to effectively use cloud-based accounting software.

The analysis of data for the second objective reveals valuable insights into the skills and concepts required for students to effectively use cloud-based accounting software. According to one respondent, "Enthusiasm and networking skills are the basic skills that students need to develop in using cloud-based accounting software." This highlights the importance of an enthusiastic approach and networking skills in embracing new challenges and establishing connections with professionals, peers, and mentors for guidance and support. Effective communication is another crucial skill for students utilizing cloud-based accounting software. As one respondent stated, "Effective communication enables students to convey information clearly and collaborate efficiently with team members, clients, and external stakeholders." Clear communication enhances collaboration and facilitates efficient teamwork. Critical thinking is emphasized as an essential skill in analysing complex financial data and identifying potential errors. It allows students to devise alternative solutions, as one respondent mentioned, "Critical thinking helps students analyse complex financial data, identify potential errors, and devise alternative solutions." Adaptability is crucial in navigating software updates and changes, ensuring students remain competent in an ever-evolving technological landscape. One respondent highlighted this by stating, "Adaptability empowers students to navigate software updates and changes, ensuring they remain competent in an ever-evolving technological landscape." Creativity is also important, encouraging students to think outside the box and find innovative ways to leverage the software's capabilities. This enhances efficiency and problem-solving abilities, as mentioned by one respondent, "Creativity encourages students

to think outside the box and find innovative ways to leverage the software's capabilities, enhancing efficiency and problem-solving abilities." Teamwork is emphasized as a skill that promotes collaborative efforts and harnesses the collective intelligence of individuals. It leads to enhanced decision-making and successful outcomes, as one respondent stated, "Teamwork promotes collaborative efforts and harnesses the collective intelligence of individuals, leading to enhanced decision-making and successful outcomes." In addition to these soft skills, technical proficiency is necessary for effective use of cloud-based accounting software. According to a respondent, "The technical skills in Information and Communication Technology are essential in obtaining mastery for the effective use of cloud-based accounting software." Responses found similarities to recent studies, to use cloud-based accounting software efficiently, it's crucial to enthusiasm, networking skills, and soft skills such as communication, collaboration, critical thinking, adaptability, and attention to detail. These abilities can assist both professionals and students succeed in the accounting field and guarantee the quality of financial data (Chanthinok & Sangboon, 2021; Tawfik & Elmaasrawy, 2022).

Equitable access, effective teaching, teacher support, student engagement, and integrated cloud-based accounting software enhance education.

The analysis of data for the third objective reveals several patterns, themes, and codes related to teaching and learning cloud-based accounting software in high schools. The data emphasizes the importance of Empowerment Technology as a subject that equips students with the basic skills necessary for working with cloud-based accounting software. The overarching theme that emerges is the need for hands-on, practical learning experiences that engage and motivate students. According to the data, one prominent pattern that emerges is the emphasis on access and resources. The data highlights the importance of ensuring equitable access to computers, software, and a reliable internet connection. Schools should invest in computer laboratories and provide students with access to the necessary technology. Efforts should also be made to ensure that students who do not have access to computers at home are provided with opportunities to use the software during school hours. As one response states, "Ensuring safer use, software capacity access, and efficient speed's quality would lead to effective and quality experience. This technical factor would motivate all the learners to show their willingness to learn." The theme of teaching methods and practices also emerges from the data. The data highlights the effectiveness of hands-on learning, real-world applications, and collaboration in teaching cloud-based accounting software. Practical exercises, group projects, and interactive learning experiences are recommended to engage students and make the learning process more relevant and enjoyable. A quote from the dataset suggests, "Make the atmosphere upon learning be friendly. The software shouldn't overwhelm the student. The approach should be in a funny yet educating-enough way." Furthermore, the data emphasizes the importance of teacher training and support. Teachers need to have sufficient knowledge and expertise in cloud-based accounting software to effectively teach their students. The dataset suggests investing in faculty training and providing teachers with resources to enhance their skills. One response state, "High schools should invest in faculty training with regards to cloud-based accounting software for them to have sufficient knowledge and experience that will enable them to teach students effectively and efficiently." Another significant pattern that emerges is the focus on student engagement and motivation. The data highlights the importance of creating a friendly and stimulating learning atmosphere, where students can explore and interact with the software firsthand. The integration of cloud-based accounting software with other subjects, such as entrepreneurship, is recommended to provide practical applications and context. A response suggests, "Showing students the effects of learning those skills by presentation or videos. They can also show some proof of graduate students who succeeded in their careers." According to Chanthinok & Sangboon, (2021), Dimitriu, O., & Matei, M. (2015), and Tawfik & Elmaasrawy, (2022) equitable access, effective teaching, teacher support, student engagement, and integrated cloud-based accounting software can enhance education. Equitable access to technology is integral for opportunities to learn, and effective teaching and teacher support can help students develop the skills and knowledge they need to succeed in their careers. Student engagement is important for academic performance, and integrated cloud-based accounting software can help students and professionals manage their finances more efficiently and effectively.

Integration of cloud-based accounting software skills in high school curricula emphasizes communication, information literacy, industry collaboration, digital literacy, and practical career readiness in the 21st-century workforce.

The analysis of data for the fourth objective reveals several prominent patterns, themes, and codes related to the integration of cloud-based accounting software skills into high school curricula and the importance of preparing students for the demands of the 21st-century workforce. The need for students to develop effective communication

skills and the ability to navigate and evaluate information in digital formats is highly emphasized. One respondent noted, "Communication Skills and Information Literacy Skills are crucial for students to thrive in the modern work environment." This theme highlights the recognition that communication in the professional realm is increasingly shifting towards digital platforms, reinforcing the importance of digital communication skills for students. The data consistently emphasizes the integration of cloud-based accounting software into high school curricula as a prominent theme. This integration is regarded as essential for guiding students towards a quality career path. As one respondent stated, "The integration of cloud-based accounting software could be the main foundation and serve as a backbone that will guide every aspirant to go with the right and quality path of their careers' destination." The data highlights the belief that exposure to cloud-based accounting software enables students to develop essential skills, adapt to technological advancements, and enhances their competitiveness in the job market. The data reveals a significant theme emphasizing the importance of industry partnerships and collaboration with higher education institutions in shaping high school curricula. These partnerships are recognized as essential for keeping the curriculum up-to-date and relevant to industry standards and trends. As one respondent pointed out, "Industry and higher education institutions can provide insights and expertise to help develop high school curricula that align with industry standards and trends." The data highlights the value of workshops, training sessions, and real-world examples provided by industry experts to enhance students' practical knowledge and understanding of cloud-based accounting software, thus bridging the gap between classroom learning and real-world application. The theme of digital literacy and technological adaptation is pervasive in the data, underscoring the imperative for high school students to develop robust digital literacy skills and adapt to technological innovations. It emphasizes the need for students to acquire the ability to effectively use digital tools, collaborate online, and leverage cloud-based software, particularly in the realm of accounting. As one respondent highlighted, "With the increasing prevalence of technology in every aspect of life, digital literacy has become an essential skill for the 21st-century workforce." This theme highlights the crucial role of technology in the modern workplace, emphasizing that students must be equipped with the necessary skills to navigate and utilize technological advancements. Furthermore, the data emphasizes the significance of specific skills such as computer literacy, technical and professional writing, and information technology applicable in different fields. Respondents highlight the importance of integrating these skills into the curriculum to support students' readiness for the demands of the 21st-century workforce. As one respondent noted, "High school curriculums now teach a wide array of skills and knowledge. What we need is a curriculum that can help students adapt to the innovations in technology." This perspective further emphasizes the need to prioritize digital literacy skills and technological adaptation in high school curricula. The data also highlights the role of partnerships between industry and higher education institutions in facilitating the integration of cloud-based accounting software skills. Respondents stress the importance of industry professionals and experts providing guidance and leading workshops and training sessions for high school teachers and students. These sessions provide practical, hands-on experience with cloud-based accounting software, exposing students to real-world applications and insights into the skills required for careers in accounting and related fields. One respondent emphasized, "Partnerships with industry and higher education institutions can provide high schools with access to cloud-based accounting software, which can be used to teach students the skills they need to be successful." The study by Chanthinok, K., & Sangboon, K. (2021), discusses the development of digital accounting systems on cloud computing. The study emphasizes the benefits of digital accounting using cloud computing, such as information management and accessibility. The article by Peek, S. (2019), also highlights the benefits of online accounting software, including the automation of tasks and the ability to enter data automatically. Integrated cloud-based accounting software can help students and professionals manage their finances more efficiently and effectively.

Educator professional development, technology resources, funding and support, internet connectivity challenges, and collaborative educator efforts.

The analysis of data for the fifth objective reveals several patterns, themes, and codes related to the integration of cloud-based accounting software skills in high school curricula. The data underscores the importance of professional development opportunities for educators, the need for adequate technology infrastructure and resources, the role of funding and support, and the challenges and potential solutions associated with implementing cloud-based accounting software skills. These findings shed light on the key considerations and insights for effectively integrating this important skill set into high school education. One prominent theme that emerges is the importance of professional development for educators. The data indicates that educators should be provided with comprehensive training, seminars, workshops, and online courses to enhance their knowledge and skills in teaching cloud-based accounting software. This suggests a recognition of the need to empower educators and equip them with the necessary tools to effectively teach these skills. As one respondent stated, "Educators can be trained upon conducting a training also for

them with regards to cloud-based accounting software skills." Another significant theme centre around technology infrastructure requirements. It becomes evident from the data that high schools need access to well-equipped computer labs or personal computers, reliable internet connections, and appropriate software licenses to facilitate the integration of cloud-based accounting software skills. The availability and functionality of these resources play a crucial role in students' ability to engage with the software and develop their skills effectively. A respondent emphasized the necessity of such resources, stating, "Having a well-functioning computer laboratory that is regularly maintained and the latest accounting software from the top accounting software providers is necessary to effectively integrate cloud-based accounting software skills into high school curricula." Funding and resources emerge as a key code within the data set. The analysis reveals the necessity for governments to allocate specific budgets for software licenses, technology infrastructure, and professional development programs. Adequate funding enables high schools to acquire necessary resources, provide training and seminars for educators, and improve overall implementation. A respondent highlighted the importance of funding, saying, "Governments can provide funding to schools to purchase the necessary technology infrastructure and software licenses required for teaching cloud-based accounting software skills." The challenges associated with internet connectivity are also highlighted in the data. Some participants mention limited access to a reliable internet connection, particularly in remote areas. This poses a significant hurdle to the successful integration of cloud-based accounting software skills. It becomes apparent that efforts should be made to address this issue and ensure equal opportunities for all students, regardless of their geographical location. One respondent emphasized this concern, stating, "I think the school, with the help of the private sector in collaboration with the regional department of education could support and help to be able to make this possible. I feel like there are no issues about implementing it since we somehow have the resources, we just need to improve it." Collaboration and the exchange of ideas emerge as a theme reflecting the value of shared experiences among educators. The data suggests that platforms such as seminars, forums, and symposiums play a crucial role in fostering collaboration, enabling educators to share strategies, best practices, and challenges. Such interactions can contribute to the continuous improvement of teaching practices in the field of cloud-based accounting software skills. As one respondent mentioned, "Educators should hold seminars and forums where they can exchange ideas on how to effectively teach cloud-based accounting software skills." Professional development and training for teachers in technology integration is crucial, as highlighted in an article by Peterson, T. (2022, April 18). Technology starts with professional development and training. Webinars offer convenient options for teachers to pursue professional development. Stresses the significance of providing teachers with modern tools and technology resources for successful integration. Another study by Yurtseven Avci, Z., O'Dwyer, L. M., & Lawson, J. (2019), focuses on key factors for effective professional development to support technology integration. The U.S. Department of Education emphasizes the importance of preparing teachers to teach effectively with technology and ensuring internet access and devices for learners (U.S. Department of Education, 2017, January). Additionally, EdTech Magazine points out that professional development can aid teacher retention during staffing challenges (Flewelling, 2022).

Conclusion

The data analysis provides valuable insights, patterns, themes, and codes such as the relevance and impact of training, the skills and concepts required, related factors to teaching and learning, the importance of preparing students for the demands of the 21st-century workforce, and the importance of professional development opportunities for educators, the need for adequate technology infrastructure and resources, the role of funding and support, and the challenges and potential solutions.

1. Early exposure and adaptability, varying levels of preparedness, and the advantages of proper training in cloud-based accounting skills. It is evident that a combination of technical skills in information and communication technology (ICT) and basic accounting knowledge is essential.
2. Students need to develop enthusiasm, networking skills, and a range of soft skills such as communication, collaboration, critical thinking, adaptability, and attention to detail to effectively use cloud-based accounting skills. Soft skills such as communication, collaboration, time management, critical thinking, and attention to details are identified as fundamental.
3. Equitable access, effective teaching, teacher support, student engagement, and integrated cloud-based accounting software enhance education. Equitable access to resources and technology is crucial, employing hands-on learning enhances student engagement and teacher training and support are essential.
4. Integration of cloud-based accounting software skills in high school curricula emphasizes communication, information literacy, industry collaboration, digital literacy, and practical career readiness in the 21st-century workforce. Highlight the need to prepare SHS students for the demands of the 21st-century workforce by equipping them with the necessary skills, knowledge, and technological literacy related to CBAS.