E-Journal of Humanities, Arts and Social Sciences (EHASS)
ISSN – Online 2720-7722 | Print 2821-8949
Volume 5 Issue 6 June 2024 pp 835-847
Available online at: https://noyam.org/journals/ehass/
DOI: https://doi.org/10.38159/ehass.2024564

Engaging First-year Accounting Pre-service Teachers in Learning through Social Media Groups

Jabulisile Ngwenya [1] & Nomsa Zaly [1]
[1] University of KwaZulu-Natal, College of Humanities, Durban, South Africa.

ABSTRACT
This article sought to explore the experiences of Accounting Education pre-service teachers' learning through social media groups. The study adopted a qualitative case study of twenty first-year pre-service Accounting teachers who were selected purposively. Data was generated using semi-structured individual telephonic and WhatsApp-based focus group interviews. The study employed thematic data analysis to analyse pre-service teachers' learning expriences. What emerged from the findings is that WhatsApp groups allowed communal construction and sharing of knowledge and skills. Meeting in small WhatsApp groups nurtured a continuous supportive environment that provided a variety of perspectives and solutions. The study revealed that constraints due to the nature of financial problems and scenarios placed restrictions on the quality of interaction and the type of learning that took place through WhatsApp groups. The findings of the study have shown that Moodle as a learning site is not proficient in offering pre-service teachers all Accounting teaching and learning materials; there is, therefore, a need to supplement it with social media platforms, since students are acquainted with them. It is envisaged that this paper will make timeous theoretical contributions to the scholarship of teaching and learning to enhance the integration of social media in teaching and learning.

Correspondence
Jabulisile Ngwenya
Email:
ngwenyaj@ukzn.ac.za

Publication History
Received: 20th February, 2024
Accepted: 21st May, 2024
Published online:
7th June, 2024

Keywords: *Accounting, pre-service teachers, social media, student teachers, WhatsApp groups.*

INTRODUCTION
The Accounting curriculum is plagued by changes due to developments in the profession of Accounting caused by changes in international Accounting standards and worldwide marketing.[1] The process of analysing, interpreting and reporting on financial statements is viewed as the utmost purpose of the accounting process to enable future planning.[2] Therefore, the aim of accounting as a discipline is to instil in students the skills they need to think creatively and critically to solve accounting problems to make informed decisions. This requires students to engage with financial information to comprehend and analyse financial problems. Accounting teachers are, therefore, required to use teaching strategies that will assist learners in developing analytical, problem-solving and communication skills that are pertinent

[1] Jean Ingersoll Abbott and Barry R. Palatnik, "Students' Perceptions of Their First Accounting Class: Implications for Instructors," *Accounting Education* 27, no. 1 (January 2, 2018): 72–93, https://doi.org/10.1080/09639284.2017.1381032; Liphie Pereira and Burman Musa Sithole, "Learner-Centred Pedagogy in Accounting: Understanding Its Meaning from a Bernsteinian Perspective.," *African Educational Research Journal* 8, no. 1 (2020): 20–30..
[2] Hermann Frick, Jacqueline Birt, and Jenny Waters, "Enhancing Student Engagement in Large Management Accounting Lectures," *Accounting & Finance* 60, no. 1 (March 8, 2020): 271–98, https://doi.org/10.1111/acfi.12318.

to analysing and interpreting financial information.[3] Accounting teachers should not limit their teaching to formulas and figures only since the teaching of accounting necessitates the use of more scenarios and open-ended questions that require learners to be engaged in discussions while being challenged to think creatively.[4] This implies that student-teachers need to be equipped with reasoning abilities as well as the ability to reflect on financial accounting information, with the capacity to think critically and creatively and learn how to integrate these skills into their classroom practice.[5] Acquisition and development of knowledge and skills essential in learning Accounting require the total involvement of student-teachers in the learning process to enable them to understand theoretical knowledge and allow intensive application of basic principles. This is in agreement with teaching in the 21st century, which involves encouraging collaborative, creative, communication and critical thinking skills through active involvement of students in the learning process.[6] Hence, there is a need for the use of appropriate teaching and learning techniques that allow students to engage in learning through interaction with peers.

The background stated above inspired Accounting lecturers at the university where the study was conducted to introduce hybrid teaching and learning strategies to first-year students with the aim of strengthening the learning and understanding of unique concepts in Accounting. Group work was one of the strategies that was introduced to provide an opportunity for student-teachers to engage with learning material while interacting with and learning from one another to reinforce active learning. Pre-service teachers were expected to do their work in groups to allow further opportunities to learn collaboratively and creatively while networking with their peers. Hence the utilisation of WhatsApp in teaching and learning was motivated to enhance students' learning experiences. Therefore, student-teachers were required to do online group quizzes which were accessed through the Modular Object-Oriented and Dynamic Learning Environment (Moodle) learning management system (LMS) before and after each lecture. Online tutorials based on financial problems and solutions were uploaded on Moodle. They were given group presentations and debates that required them to do an online search for information. Group discussions were conducted outside of lectures.

Although pre-service teachers used WhatsApp groups while on campus, its use was extended for group discussions and to access learning materials while learning remotely off campus. As a result, WhatsApp was used intensively as a learning platform. During remote learning, it was mandatory for pre-service teachers to join WhatsApp groups that were administered by the team leaders to reinforce and support learning in Accounting. In this way, WhatsApp was used to build an online community and is regarded as a platform for sharing learning materials, communication and seeking support among the pre-service teachers.

The literature supporting WhatsApp's valuable role in the academic programme has been thoroughly exhausted by local and international scholars at higher education institutions. However, there is a dearth of research on how student teachers learn in groups through social media, particularly WhatsApp, in Accounting. Notwithstanding the abundance of literature on the utilisation of social media in learning, the extent to which first-year pre-service Accounting teachers learn in groups through social media in Accounting remains unclear and this paper aims to contribute knowledge in this regard.

The study thus seeks to answer the following research question: How do pre-service Accounting teachers learn through WhatsApp groups in one higher-education institution? The remainder of the article presents a literature review of pertinent concepts, followed by a theory that frames the study and the explanation of the context. The section also presents the research design and methodology, findings and discussion of findings, as well as the conclusion.

[3] Kufre P Akpan and A Ezinne, "Effectiveness of Whatsapp as a Collaborative Tool for Learning among Undergraduate Students in University of Uyo, Akwa Ibom State," *International Journal of Advanced Education and Research* 2, no. 5 (2017): 43–46.
[4] Akpan and Ezinne, "Effectiveness of Whatsapp as a Collaborative Tool for Learning among Undergraduate Students in University of Uyo, Akwa Ibom State."
[5] Frick, Birt, and Waters, "Enhancing Student Engagement in Large Management Accounting Lectures."
[6] Thomson and Washington, "Critical thinking skills and teaching accounting: A comparative study".

LITERATURE REVIEW

Learning through Social Media

Social media has become very popular as the primary means of communication among university students.[7] Social media refers to web-based applications and tools that enable users to connect, create, share and exchange content or media.[8] Social media sites such as WhatsApp, Facebook, X (formerly Twitter), instant messaging, Instagram and live chat, as well as wikis and blogs, provide students with new avenues for communication, curriculum delivery and learning.[9] The immeasurable increase in the utilisation of social media among students has been influenced by the need to use several social media platforms for learning purposes during the lockdown due to Covid-19. Studies have shown that students generally use social networking sites (SNS) to share teaching and learning materials, such as lecture notes, assignment papers, homework, and instructional videos.[10]

One of the social networking applications with instant messaging apps that has become a popular mobile app among students in South Africa is WhatsApp.[11] WhatsApp application is one of the prevalent social networking applications that is designed to run both on contemporary mobile devices and laptops.[12] The WhatsApp Messenger application expedites the creation of groups to enhance collaboration in learning since it gives students occasions for online teamwork and sharing of knowledge and information that is useful in reinforcing learning.[13] It also has a distinctive feature of creating a specific group that allows its users to share ideas, comments and learning resources and supports online discussions through social interaction on WhatsApp group chats.[14] The WhatsApp group is useful in nurturing students' learning experiences, stimulating collaboration, and strengthening motivation to participate actively in learning.[15] This is confirmed by Kufre and Abe, who conducted a study on the use of WhatsApp in Accounting and found that using WhatsApp groups improved communication, creativity, critical thinking, and problem-solving skills among Accounting students.[16]

However, various researchers have cited the shortcomings of WhatsApp groups.[17][18] Sholikah and Harsono caution that WhatsApp communication, if not well managed, can distract students from learning. While learning through WhatsApp is meant to be interactive, students may find themselves checking their messages frequently and engaging in other activities instead of completing their work, which can result in divided attention. A study by Alubthane and Alyoussef found that some students raised concerns that they could not control the inundation of messages because some students were sending messages while attending lectures or focusing on other activities, leading to reduced productivity. This was also confirmed

[7] Stewart Waters and Matt Hensley, "Measuring Rural P-12 Teachers' Attitudes, Perceptions, and Utilizations of Social Media," *Research in Social Sciences and Technology* 5, no. 3 (November 1, 2020): 25–54, https://doi.org/10.46303/ressat.05.03.2.

[8] Miao Chen and Xin Xiao, "The Effect of Social Media on the Development of Students' Affective Variables," *Frontiers in Psychology* 13 (September 15, 2022), https://doi.org/10.3389/fpsyg.2022.1010766.

[9] Fawzia Alubthane and Ibrahim ALYoussef, "Pre-Service Teachers' Views about Effective Use of the Whatsapp Application in Online Classrooms.," *Turkish Online Journal of Educational Technology-TOJET* 20, no. 1 (2021): 44–52; Raja Muhammad Ishtiaq Khan and Tribhuwan Kumar, "Interaction Analysis of WhatsApp Application Integration in M-Learning," *Webology* 19, no. 1 (January 20, 2022): 795–806, https://doi.org/10.14704/WEB/V19I1/WEB19056.

[10] Chen and Xiao, "The Effect of Social Media on the Development of Students' Affective Variables."

[11] Cedric Bheki Mpungose, "Lecturers' Reflections on Use of Zoom Video Conferencing Technology for e-Learning at a South African University in the Context of Coronavirus," *African Identities* 21, no. 2 (2023): 266–82.

[12] Shakeel Iqbal and Zeeshan Ahmed Bhatti, "A Qualitative Exploration of Teachers' Perspective on Smartphones Usage in Higher Education in Developing Countries," *International Journal of Educational Technology in Higher Education* 17, no. 1 (2020): 29.

[13] Mpungose, "Lecturers' Reflections on Use of Zoom Video Conferencing Technology for e-Learning at a South African University in the Context of Coronavirus."

[14] Daniel Ofori-Kusi and Simon Adjei Tachie, "Learning Mathematics through WhatsApp Groups in University Preparatory Program during the COVID-19 Pandemic," *Research in Social Sciences and Technology* 7, no. 1 (March 7, 2022): 56–68, https://doi.org/10.46303/ressat.2022.1.

[15] Orna Farrell and James Brunton, "A Balancing Act: A Window into Online Student Engagement Experiences," *International Journal of Educational Technology in Higher Education* 17, no. 1 (December 29, 2020): 25, https://doi.org/10.1186/s41239-020-00199-x; Suzanne Stone and Anna Logan, "Exploring Students' Use of the Social Networking Site WhatsApp to Foster Connectedness in the Online Learning Experience," *Irish Journal of Technology Enhanced Learning* 3, no. 1 (April 17, 2018): 44–57, https://doi.org/10.22554/ijtel.v3i1.28.

[16] Akpan and Ezinne, "Effectiveness of Whatsapp as a Collaborative Tool for Learning among Undergraduate Students in University of Uyo, Akwa Ibom State."

[17] Alubthane and Alyoussef, "Pre-service teachers' views about effective use of the WhatsApp application in online classrooms"; Chen and Xiao, "The Effect of Social Media on the Development of Students' Affective Variables"; Ofori-Kusi and Tachie, "Learning Mathematics through WhatsApp Groups in University Preparatory Program during the COVID-19 Pandemic".

[18] Alubthane and ALYoussef, "Pre-Service Teachers' Views about Effective Use of the Whatsapp Application in Online Classrooms"; Ofori-Kusi and Tachie, "Learning Mathematics through WhatsApp Groups in University Preparatory Program during the COVID-19 Pandemic."

by scholars like Chen and Xiao, who state that students complained that the incoming messages from WhatsApp took up most of their concentration span and study time, which further led to a lack of concentration during lectures. Juliana found that students raised concerns that they found it difficult to rest because of constant alerts and notifications from WhatsApp groups. Because they had groups for different modules, they constantly checked their screens for notifications and this affected their concentration and focus.[19] This had a negative impact on the academic performance of these students.

While a WhatsApp group was used for learning, in Sholikah and Harsono's study, students stated that there were cases where the group was used for leisure rather than for academic purposes. As a result, the WhatsApp group became a chat group and lost its focus on information sharing. Students were complaining about poor time management and procrastination because they often found themselves indulging in irrelevant chats and messages, spending excessive time reading and replying to messages.[20]

In their study, Naidoo and Kopung discovered that WhatsApp instant messaging had a limited number of characters and symbols that students could use to express themselves mathematically. In addition, Ofori-Kusie and Tachie revealed that while WhatsApp instant messaging can help students learn new mathematics knowledge through interaction with their peers, it does not have a feature where students can type mathematics symbols. This may hinder students' participation in the teaching and learning process on the WhatsApp platform.

Students' Engagement in Social Media Groups

According to Dunn and Kennedy, student engagement happens when students make attempts to participate actively during the learning process. Learning engagement is demonstrated by how student-teachers participate in discussions and collaborate in building knowledge.[21] Farrell and Brunton posit that students' engagement in WhatsApp groups is particularly motivated by a sense of belonging, which has a remarkable impact on the learning experiences. Collaboration and social presence can be encouraged through the use of learning strategies that promote active communication between students.[22]

Allowing student-teachers to do work in small groups is more beneficial to them than large group discussions as it promotes participation, expression of thoughts, interdependence, interaction, collaborative inquiry, understanding, and application of new knowledge.[23] Engaging students in group work gives them a platform to work collaboratively on set tasks, allowing them to explore varied viewpoints and take possession of the learning process.[24] Scholars warn that there is a need for capable leaders within groups who actively coordinate members' activities and contributions toward the attainment of group objectives.[25] Annamalai emphasises that negative social interactions tend to develop when group members do not participate or offer valued information and insights to support the learning of all group members. Hence the majority of scholars are of the view that integrating technology in teaching and learning can promote active learning, thereby enhancing the academic performance of students.[26]

[19] Khan and Kumar, "Interaction Analysis of WhatsApp Application Integration in M-Learning."
[20] Mar'atus Sholikah and Dwi Harsono, "Enhancing Student Involvement Based on Adoption Mobile Learning Innovation as Interactive Multimedia," *International Journal of Interactive Mobile Technologies (IJIM)* 15, no. 08 (April 23, 2021): 101, https://doi.org/10.3991/ijim.v15i08.19777.
[21] T.J. Dunn and M. Kennedy, "Technology Enhanced Learning in Higher Education; Motivations, Engagement and Academic Achievement," *Computers & Education* 137 (August 2019): 104–13, https://doi.org/10.1016/j.compedu.2019.04.004.
[22] Ibrahim Youssef Alyoussef, "Factors Influencing Students' Acceptance of M-Learning in Higher Education: An Application and Extension of the UTAUT Model," *Electronics* 10, no. 24 (December 20, 2021): 3171, https://doi.org/10.3390/electronics10243171.
[23] Lynda Baloche and Celeste M Brody, "Cooperative Learning: Exploring Challenges, Crafting Innovations," *Journal of Education for Teaching* (Taylor & Francis, 2017).
[24] Renée Crawford and Louise Jenkins, "Making Pedagogy Tangible: Developing Skills and Knowledge Using a Team Teaching and Blended Learning Approach," *Australian Journal of Teacher Education* 43, no. 1 (January 2018): 127–42, https://doi.org/10.14221/ajte.2018v43n1.8.
[25] Karin Forslund Frykedal and Eva Hammar Chiriac, "Student Collaboration in Group Work: Inclusion as Participation," *International Journal of Disability, Development and Education* 65, no. 2 (March 4, 2018): 183–98, https://doi.org/10.1080/1034912X.2017.1363381.
[26] Nagaletchimee Annamalai, "Using WhatsApp to Extend Learning in a Blended Classroom Environment," *Teaching English with Technology* 19, no. 1 (2019): 3–20.

THEORETICAL FRAMEWORK

The Social Interdependent Theory (SIT) was adopted to understand how student-teachers learn together or collaboratively where there is group dynamism.[27] SIT is premised on the idea that groups are dynamic and the need to attain a desired goal creates an interdependence that unites members.[28] The principle of interdependence emphasises community members working together for the benefit of the community as a whole. According to this theory, group members develop a degree of interdependence when working together, enhancing the probability of achieving their communal goals.[29]

Social interdependence includes positive (cooperation) and negative (competition) interdependence.[30] According to Johnson and Johnson, positive interdependence exists when individuals work cooperatively to achieve their goals by believing that they can attain their goals only if the other individuals within the group also reach their goals. They, therefore, promote each other's efforts to achieve their goals. Negative interdependence exists when individuals perceive that they can obtain their goals if and only if the other individuals with whom they are competitively linked fail to obtain their goals.[31] In this study, the use of SIT provides a foundation for cooperative learning. Four elements are necessary to improve the collaborative potential of groups: individual accountability, promotive interaction, group processing and the appropriate use of interpersonal and small-group skills.

Individual accountability occurs when group members are held accountable for their unit of the task at hand and willingly assist other members when the need arises.[32] Group and individual accountability promotes feelings of responsibility, which increases a person's motivation to perform well in a group. A key aspect of individual accountability is teammates reviewing members' work to provide feedback that will enhance the final output.[33] Students were required to engage in discussions to provide solutions to tutorials after the scheduled lecture periods to facilitate individual accountability.

Johnson and Johnson state that face-to-face promotive interaction occurs when members motivate and enable each other's efforts to achieve the goals of a group. Individuals focus both on being productive and on encouraging the productivity of their groupmates. In this study, student teachers were required to provide explanations of how to solve problems to foster promotive interaction.

Group processing happens when members reflect on group functioning and evaluate their work process to decide on actions required to maintain the working relationships while attaining desired objectives.[34] The purpose of group processing is to improve the effectiveness of the members in contributing to the shared efforts to accomplish the group's goals. Interpersonal and small group skills enhance the degree of trust among group members and improve their communication skills and ability to resolve conflicts when disagreements arise.[35]

METHODOLOGY

This inquiry followed a qualitative case study research approach within the interpretive paradigm in order to engage with the pre-service Accounting teachers' experiences of learning through mobile learning groups while learning remotely off campus.[36] As a case study, the study was bounded in that it focused only on first-year Accounting pre-service teachers. A qualitative case study approach allowed the researchers to interact with the pre-service teachers by talking directly to them with the aim of understanding their real world.[37]

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[27] David W. Johnson and Roger T. Johnson, "The Use of Cooperative Procedures in Teacher Education and Professional Development," *Journal of Education for Teaching* 43, no. 3 (May 27, 2017): 284–95, https://doi.org/10.1080/02607476.2017.1328023.
[28] David W Johnson and Roger T Johnson, "Learning Together and Alone: Overview and Meta-analysis," *Asia Pacific Journal of Education* 22, no. 1 (2002): 95–105.
[29] Forslund Frykedal and Hammar Chiriac, "Student Collaboration in Group Work: Inclusion as Participation."
[30] Johnson and Johnson, "The Use of Cooperative Procedures in Teacher Education and Professional Development."
[31] Johnson and Johnson, "Learning Together and Alone: Overview and Meta-analysis."
[32] David W Johnson, Roger T Johnson, and Karl A Smith, "Cooperative Learning: Improving University Instruction by Basing Practice on Validated Theory," *Journal on Excellence in University Teaching* 25, no. 4 (2014): 1–26.
[33] Johnson and Johnson, "The Use of Cooperative Procedures in Teacher Education and Professional Development."
[34] Johnson and Johnson, "Learning Together and Alone: Overview and Meta-analysis."
[35] Forslund Frykedal and Hammar Chiriac, "Student Collaboration in Group Work: Inclusion as Participation."
[36] J.W. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches,* 3rd ed. (United States of America: SAGE Publications, Inc., 2009).
[37] Robert K Yin, *Case Study Research and Applications Design and Methods* (Thousand Oaks, CA: Sage, 2018).

Sampling

The study sample consisted of twenty purposively selected first-year pre-service Accounting teachers registered for a four-year Bachelor of Education programme from one South African higher-education institution in KwaZulu-Natal. These participants were doing Accounting Level 1 (EDAC113), the first module in the Accounting Education specialisation. The use of purposive sampling afforded the opportunity to sample pre-service Accounting teachers who could easily be accessible for inclusion in the data-generation process.[38]

Data Generation Methods

Given the fact that the research was conducted during lockdown due to Covid-19 pandemic restrictions, this study employed one-on-one telephonic semi-structured interviews as a main source of soliciting qualitative data. This was followed by WhatsApp-based focus group interviews (FGIs). The twenty Accounting teachers were individually interviewed telephonically, after which they were put into four different groups of five for the purpose of the WhatsApp-based FGIs. The duration for each one-on-one telephonic interview was 40 to 45 minutes. WhatsApp-based focus group interviews lasted approximately 30 minutes each. All interviews were audio-recorded.

Data analysis

The data was analysed using thematic analysis since it is an appropriate method when the researcher seeks to understand experiences, thoughts, or behaviours across data sets.[39] The audio data from the individual interviews and the focus group interviews was transcribed to textual data and confirmed by the participants for credibility and trustworthiness and member checking purposes. A process of open coding was used, and categories were established, reviewed and clustered into specific themes. The findings were arranged according to different themes that emerged from the analysis and these were used to present and report the findings. The themes that emerged from the individual interviews were used to analyse focus group interviews.

Ethical issues

The ethical code of conduct was adhered to by securing permission to conduct the research from the university at which the authors are based. Other ethical procedures, which included informed consent, confidentiality, anonymity and voluntary participation, were explained to the participants and adhered to throughout the duration of the study. To ensure confidentiality and anonymity, pseudonyms were used to refer to the participants.

PRESENTATION OF FINDINGS

The findings of the study were merged into the following themes: Communal construction and sharing of knowledge and skills; nurturing a continuous supportive environment; a variety of perspectives and solutions; and constraints in learning through WhatsApp groups. Verbatim quotes will be used to support the data presented.

Communal construction and sharing of knowledge and skills

Participants asserted that they were required to do their work in groups. They regularly met through WhatsApp to do tutorials and assignments, review what had been done in class, and share learning materials. They added that engaging in group tutorials that were smaller than usual classes was beneficial as it gave them ample time to pay more attention to important abstract concepts that involved detailed explanations and areas where they needed more clarity. Most participants asserted that using mobile phones helped them be more attentive and focused on activities, and this promoted interaction since they shared their ideas and thoughts instantly. This enabled them to get prompt and constant feedback at all times. In this way, smartphones were used as repositories of information that could later be retrieved and used to review new knowledge and solutions to tutorials to reinforce their comprehension of concepts. One of the participants from FGI 4 also said:

[38] Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*.
[39] Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*.

Using a mobile phone gave me a chance to post my answers very quickly at any time. Sometimes I would post a question and find that group members have posted answers to my question even before we meet as a group, I know that because my phone is always with me, I can read my work at any time. (Thando)

Findings from the study showed that engaging in tutorials helped participants to gain procedural knowledge and skills, which were vital in analysing financial information. Student-teacher engagement in WhatsApp groups motivated information exchange, which ensured increased participation and enhanced learning and understanding of new concepts.

During group discussions, every group member would share their ideas on challenging calculations and scenarios, and get assistance from the rest of the group. Knowledgeable members would then expand on problematic sections of the new topics. Reviewing what they had been learning together helped them gain a new perspective on Accounting concepts. One of the participants reported that learning in mobile groups motivated him to participate continuously in group discussions because while others were posting and explaining how they worked out solutions, he was able to reflect on areas that needed more revision*:*

We use WhatsApp groups to do tutorials and revise together. It is very effective because answers are posted on the group and we all see them and add to them. Small groups allow everyone to participate and we also ask questions if you do not understand. (Member of Focus Group 2)

Participants indicated that when given assignments and presentations, they were required to conduct research on new topics through WhatsApp discussions doing work in small groups. They explained that they used their mobile devices to search for information and share it with the rest of the group members on a WhatsApp chat group. Participants felt that discussing their work collaboratively and devising presentation strategies in groups enhanced learning of new content. They were assigned roles within the group so that they could share work according to each member's strengths. This allowed them to work on given tasks as peers while learning from each other.

Nurturing a continuous supportive environment

What emerged from the data is that participants perceived that learning together and listening to peers using a platform they were familiar with provided a more user-friendly environment. They believed that peers provided more colloquial opportunities to clarify problematic Accounting concepts. The participants also emphasised that they were more engaged even when learning complex Accounting topics as a group, especially those that demand the application of multiple concepts such as problem solving. Complex Accounting topics require logical connections among different topics, but the participants indicated that their peers were patient when responding to their questions, and even had time to take their peers step-by-step from the familiar to new and unfamiliar concepts.

Research participants expressed that group work was effective in researching and sharing information on new concepts. Most participants preferred to do tutorials in small groups outside the lectures because some felt scared to ask questions during virtual lectures. Some of them were shy and nervous to contribute during the process of learning and teaching because they were not familiar with the learning space. However, when doing work in groups outside the class they felt more confident to share their thoughts or ask questions. Doing work collaboratively through WhatsApp created opportunities for participants to build self-confidence because they felt comfortable participating in discussions and contributing ideas without fear of being ridiculed by other student-teachers. This was confirmed by Vuyani:

Group work helped me so much because I was shy and scared to answer or ask questions during online classes. I was worried because attending classes on Zoom was new. I was afraid that other student-teachers would laugh at my answers. However, working as a group using WhatsApp gave me a little bit of confidence to even ask my peers to explain if there is something that I do not understand.

Engaging in WhatsApp chat groups allowed social interaction among group members while they were learning together. These groups made the process of learning easier and more effective through

personal support from peers as they were more able to interact with peers in small groups. Participants were content to do their work through WhatsApp groups because they supported each other in a friendly manner. Based on the participants' responses, meeting with classmates worked well for them because it encouraged everyone to participate and helped them understand better.

> *Even if you ask more questions, they respond to your questions. You do not feel that you are learning because we have been chatting using WhatsApp. Doing tutorials in small groups encouraged each other, especially because we were comfortable to add to answers. My group members would clarify every concept to make sure everyone benefited from the group discussion and this makes you think of other methods to approach the scenarios.* (Elvis)

Participants indicated that they were excited to know that they communicated with their peers on a regular basis. Participants indicated that they experienced a sense of belonging to their groups as they were engaging in a very casual and informal environment. They believed that flexibility in learning enhanced social connections between pre-service teachers and gave them a chance to reinforce their existing relationships and form new relationships. This was confirmed by Busi:

> *Mobile learning helped me learn in a relaxed way with other student-teachers. We were learning together, helping each other, supporting each other, and getting to know each other very well. I was able to socialise with my classmates many times while also learning. I also made new friends in the group.*

Luthuli added that there were instances where they conducted tutorials through WhatsApp video calls. In such tutorials, there were engagements in which participants had to interact visually as if they were physically in one place.

> *I never felt alone because I was able to stay connected with my peers all the time. I always had problems with Zoom classes, but my peers posted all the learning materials and I was able to meet via video calls and communicate with them about lectures and ask questions if there was anything that I did not understand. We socialised with my classmates several times while also learning. I felt I was part of the group and the Accounting class.*

Another important experience that emerged from the findings during focus group interviews was the notion of cohesion among the group members. The participants learnt to respect other participants' views and also be able to communicate without offending others. The participants within the group had to work in harmony and develop effective communication skills.

Variety of perspectives and solutions

The participants acknowledge the fact that during tutorial discussions, group members posted diverse perspectives and solutions to tutorials, which enriched the learning experience for all members of the groups. Small group tutorial discussions created an environment for learning that supported all participants. The variety of detailed explanations from other student-teachers elucidated how certain Accounting processes and procedures occurred. This provided the participants with opportunities to learn the diverse skills required in Accounting in the 21st century, such as the use of information communication technologies to download and upload learning materials. The variety of explanations allowed the use of varied methods in solving financial problems. This is what Portia said:

> *Well, I have gained a lot from small tutorial groups as they allow us to ask questions and seek clarifications. This has helped me in because you end up getting many explanations from other members. I had challenges in downloading and uploading Accounting learning materials but thanks to tutorials, I grasped the concepts.* (Member of Focus Group 1).

Pre-service teachers believed that learning as a group created spaces for them to develop different analytical approaches to the problems. The advantage of discussing the tasks with peers was that they gained new and different viewpoints on how to analyse financial problems. Understanding such complex questions required the participants to make sense of tutorial questions together and to formulate and share diverse solutions. Doing tutorials in a group enabled student-teachers to approach financial problems and

challenging calculations from the perspectives of others. Although these scenarios were challenging, the various student-teachers s came up with different solutions from their experiences and justifications to defend their solutions. While they were discussing and negotiating how to approach the problems, they were obliged to listen to other student-teachers' ideas. They appreciated the input and perspectives of peers since this allowed them to approach the given task differently, as some of the methods formulated by other members were innovative and novel. They believed that their ideas influenced one another's thinking, which assisted in acquiring critical thinking skills. This is what Thandi said:

> *What I have noticed is that we have different approaches to solving problems in Accounting. Those people who are good in numbers, come with good methods to do calculations and others are quick in solving Accounting problems if we are given scenarios. We have many methods of doing calculations. Some of them I did not even think of.*

Some student-teachers had different methods of analysing questions. Doing tutorials in groups was beneficial to other student-teachers because they got the opportunity to interpret scenarios and formulate diverse solutions to problems.

Constraints in learning through WhatsApp groups

During group discussions, different students came up with different solutions to the problems. However, given the nature of scenarios and financial problem-solving activities in Accounting, requiring pre-service teachers to provide multiple and diverse solutions, the conditions during WhatsApp discussions made it impossible for pre-service teachers to write down all the different options when group members provided solutions. These circumstances, therefore, forced them to scan and post solutions in the group, where participants had an opportunity to read them during their own time. They appreciated the input and perspectives of peers since this allowed them to approach the given tasks differently.

> *What I have noticed is that we have different approaches to solving problems in Accounting but it is not easy to write all the solutions on the phone. The screen is small and it is not easy to type every solution. There are those who come up with good solutions to problems that I did not even think of. They send us scanned answers.*

Although meeting in small groups was not as interactive as it would have been in physical meetings, participants acknowledged the benefits of using WhatsApp groups in facilitating their learning.

The participants stated that group members could even provide step-by-step details on how certain Accounting statements were prepared. However, they were concerned that they could not write the statements or long calculations on the screen while explaining. Instead, they shared scanned solutions on WhatsApp groups. All participants raised concerns that they could not write other mathematical symbols on the phone and this was confusing when sharing solutions. Thando from focus group 2 reported that learning in WhatsApp groups motivated her to learn because group members were posting and explaining how they worked out solutions. However, she felt that learning long statements and calculations was not enough because she could not see all the statements. This is what she said:

> *We use WhatsApp groups to do tutorials and writing and posting answers. Sometimes it is difficult to just listen to others explaining because there is no board to write on. We are not on campus. But they send us screen grabs and we have to read through the answers and agree on them. However, it was difficult to read long statements because scrolling on the phone was not easy. (*Member of Focus Group 2)

It was evident from the participants that although learning Accounting through WhatsApp posed its own challenges, learning did take place.

DISCUSSION OF FINDINGS

The pre-service teachers constantly articulated how WhatsApp chat groups facilitated collaborative learning that allowed students to share ideas in their groups.[40] Doing work in WhatsApp groups formed a

[40] Frykedal and Chiriac, "Student Collaboration in Group Work: Inclusion as Participation."

shared entity in which pre-service teachers were inspired to learn together. Johnson and Johnson call this 'promotive interaction', which occurs when members motivate and enable each other's efforts to achieve the goals of the group. What arose from the findings is that the participants regarded group tutorials as a critical learning strategy that was essential in developing efficiency and accuracy in challenging procedures and financial problems. The notion of students collaborating to seek solutions is also confirmed by Kufre and Abe, who indicated that more group tutorials created opportunities for them to explore different methods of solving financial calculations and this reinforced learning and ensured understanding.[41]

Findings also demonstrated that participants appreciated the interpersonal relationships and attachment among the students that were developed through WhatsApp group chats and videos. Although they were learning remotely from each other, most said they never felt alone since they were constantly connected. This finding is confirmed by the majority of scholars, who indicated that improved social integration that nurtures a sense of belonging may stem result from social interaction and constant conversation with peers.[42]

According to Johnson and Johnson, positive interdependence culminates in individuals motivating each other's productivity and achievement in a group. The pre-service teachers acknowledge the effect of WhatsApp group chats in creating a supportive nurturing social atmosphere that permits all to participate in learning with respect for each other in a more relaxed way, which may have made it easier for more introverted members to participate. As confirmed by the literature, there were obvious benefits of communal support which seemed to have made it easier for less assertive members to engage in discussion.[43] Doing work collaboratively in groups created opportunities for the participants to build self-confidence because they voiced their thoughts in a space that they were comfortable with. It offered students who found it uncomfortable to engage in a live Zoom lecture room to voice their ideas because their voices and experiences were respected in this safe space and this built self-confidence.

Social interference theory confirms that in promotive interaction, interpersonal dynamics only occur when students promote each other's learning.[44] The findings of this study demonstrated that participants appreciated the interpersonal relationships with their peers. Differences in members in groups gave the pre-service teachers a platform for them to post and share different viewpoints on how to analyse financial problems and this resulted in diverse solutions to the problems. This finding is supported by numerous scholars, who agree that discussions through WhatsApp groups can lead to varied answers to a particular situation as inputs come from different students who will be applying their minds to the subject.[45] Students look at the questions from different viewpoints and apply deeper analysis, which helps develop critical thinking skills.

Although participants met through WhatsApp group chats, the sharing of diverse solutions and opinions was limited as they could not actively probe questions and interact. Limited storage space to save large files and a small screen to type and project long calculations and statements were constraining. The varied methods of performing calculations were not adequately elucidated during discussions. This hindered opportunities to learn the diverse skills required in Accounting.

Though smartphones were preferred because of their flexibility, participants had difficulty in writing solutions that required mathematical explanations because WhatsApp does not have mathematical symbols students need to use when performing calculations. This finding is supported by Naidoo and Kopung, who found that mathematics students had difficulty interacting with peers because WhatsApp instant messaging had a limited number of characters and symbols.[46]

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[41] Akpan and Ezinne, "Effectiveness of Whatsapp as a Collaborative Tool for Learning among Undergraduate Students in University of Uyo, Akwa Ibom State."
[42] Robyn Gillies, "Cooperative Learning: Review of Research and Practice," *Australian Journal of Teacher Education* 41, no. 3 (March 1, 2016): 39–54, https://doi.org/10.14221/ajte.2016v41n3.3.
[43] Frick, Birt, and Waters, "Enhancing Student Engagement in Large Management Accounting Lectures."
[44] Johnson and Johnson, "Learning Together and Alone: Overview and Meta-analysis."
[45] Nchindo Richardson Mbukusa, "Perceptions of Students' on the Use of WhatsApp in Teaching Methods of English as Second Language at the University of Namibia," *Journal of Curriculum and Teaching* 7, no. 2 (November 18, 2018): 112, https://doi.org/10.5430/jct.v7n2p112.
[46] Jayaluxmi Naidoo and Kabelo Joseph Kopung, "Exploring the Use of WhatsApp in Mathematics Learning: A Case Study," *Journal of Communication* 7, no. 2 (December 4, 2016): 266–73, https://doi.org/10.1080/0976691X.2016.11884907.

Furthermore, the use of WhatsApp posed challenges to students whose phones were not compatible with the application. Some students had basic cell phones that did not have the sophisticated software and applications that could help them to access learning and teaching materials on different online platforms. This finding is in line with Khan and Kumar, who observed that not all smartphones are compatible with current learning platforms as they do not support approaches that are essential for teaching procedures. Alubthane and Alyoussef suggested that experience was required in preparing special materials for WhatsApp and using alternative software systems supporting the application.

RECOMMENDATIONS

Although the university has adopted Moodle as the official learning site, the findings of the study have shown that it is not proficient in offering pre-service teachers all Accounting teaching and learning materials; therefore, there is a need to supplement it with social media platforms, since students are acquainted with them. This suggests that higher education institutions should start to think divergently to consider WhatsApp site as an official platform to supplement LMS. Findings showed that even students who had limited access to the Internet could utilise free data bundles to access their WhatsApp sites.

Above all, it was observed that students enjoyed mixing learning with social interaction. It can, therefore, safely be predicted that using WhatsApp as an official learning site would be a welcome development in learning institutions. The mere fact that some students and lecturers have already embraced the use of WhatsApp for academic purposes, though informally, makes this recommendation plausible. WhatsApp could also be included as one of the virtual platforms for staff development to encourage its utilisation by teacher educators.

Since the study focused on a level one Accounting cohort of students, interested researchers could pursue studies by extending the scope to include all three levels of Accounting cohorts. Furthermore, future studies may use a quantitative or mixed approach in investigating Accounting pre-service teachers' experiences of learning through WhatsApp groups.

CONCLUSION

In a context urged by the necessity for students to be engaged actively in learning, this article offered insights on how pre-service teachers experienced engagement in active learning through social media groups in Accounting. All the participants viewed WhatsApp as a vital component of educational technology since students found it to be a safe space to share learning activities at any time. Despite the challenges pre-service teachers encountered in learning Accounting through WhatsApp groups, they acknowledged the wide use of the WhatsApp platform as an indispensable learning platform to foster online learning by allowing a supportive social setting that produces spaces for active learning.

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ABOUT AUTHORS

Dr Jabulisile Ngwenya is a Senior Lecturer in the School of Education, University of KwaZulu-Natal, South Africa. She has published in peer-reviewed journals and presented papers at national and international conferences. Her research interests include teaching and assessment in Business Education.

Ms Nomsa Zaly is currently a PhD student at the School of Education, University of KwaZulu-Natal, South Africa. Her research focuses on strategies pre-service teachers use in learning in Accounting Education.