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Facebook Instructional Strategy and Knowledge Retention in Business Education: Evidence from Southwestern Nigerian Colleges of Education

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ABSTRACT: This study examined whether a structured Facebook instructional strategy can improve delayed retention in Business Education Practicum among students in Nigerian colleges of education. A quasi-experimental pretest-posttest-delayed posttest design with non-randomised control groups was used. Two intact NCE II Business Education classes (N = 182) participated: an experimental group taught through a closed Facebook learning environment (n = 50) and a control group taught through the lecture method (n = 132). Data were collected with the Business Education Practicum Achievement Test (BEPAT), a 50-item multiple-choice instrument with a KR-20 reliability coefficient of .827. Retention was measured through a delayed posttest administered two weeks after the immediate posttest. The mean scores addressed the research questions, and analysis of covariance tested the hypotheses. Students exposed to Facebook-supported instruction recorded higher delayed posttest scores than those taught through lecture. Gender and the treatment-by-gender interaction were not statistically significant. The findings suggest that a low-cost, familiar social media platform can serve as a structured supplementary learning environment, extending interaction beyond class and strengthening retention in teacher education.

KEYWORDS: Business education; Facebook instructional strategy; knowledge retention; Nigerian colleges of education; social media; teacher education

1 INTRODUCTION

Business Education Practicum requires students to do more than reproduce information during a test. They are expected to remember and apply concepts related to workplace behaviour, personal effectiveness, human relations, and time and stress management in authentic professional settings. In this sense, retention is a central indicator of meaningful learning because instruction has limited value if students cannot recall and apply what they have learned after formal instruction ends (Bandura, 2017; Dale, 1946; Steinmayr et al., 2015).

In many Nigerian colleges of education, the lecture method remains the dominant mode of instruction in business-related courses. Although lectures can efficiently cover content, they often provide limited opportunities for sustained interaction, peer exchange, and repeated engagement with course materials. For practicum-oriented courses, these limits are important because students need opportunities to revisit ideas, discuss examples, and connect abstract concepts to practice. Prior work in Nigeria has similarly shown that more participatory methods can improve achievement and retention when compared with conventional lecture-based instruction (Eze et al., 2016).

At the same time, social media platforms have widened the range of instructional tools available to lecturers. Facebook, in particular, offers discussion spaces, file sharing, asynchronous interaction, and persistent access to posts and comments. These features make it possible for students to continue engaging with course materials beyond class meetings, and they give instructors a relatively familiar platform through which to facilitate discussion, clarification, and peer support (Kaplan & Haenlein, 2010; Madge et al., 2009; Barczyk & Duncan, 2013; Scheg, 2015). In African higher education settings, social media has also become an increasingly visible part of students' learning ecologies, even when platforms are adopted primarily for communication rather than for formal instruction (Chukwuere & Chukwuere, 2020).

The educational value of Facebook should not be assumed simply because students use it socially. Its instructional benefit depends on how deliberately it is integrated into teaching. When lecturers structure activity around guided discussion, resource sharing, questioning, and feedback, Facebook can support continuity of learning and repeated exposure to content. These are conditions that matter for retention. This logic aligns with both Connectivism, which emphasises learning through networks and distributed digital connections (Siemens, 2004), and Astin's Student Involvement Theory, which links learning outcomes to the quality and quantity of students' academic engagement (Astin, 1984).

A further reason for examining Facebook in this context is that much of the available literature has focused more strongly on immediate achievement, participation, or perceptions of connectedness than on delayed retention. Studies have reported positive effects of Facebook-supported learning on participation, classroom community, and academic performance (Chen, 2014; Barczyk & Duncan, 2014; Hurt et al., 2012). However, evidence on whether those short-term gains translate into better retention over time remains comparatively limited, especially in Business

Education and in Nigerian colleges of education. The role of gender also remains worth testing, as earlier studies in technology-mediated instruction have not always reached the same conclusion regarding whether males and females benefit differently (Hegadi & Angadi, 2015; Etim et al., 2016).

This study addresses that gap by examining whether a structured Facebook instructional strategy improves delayed retention in the Business Education Practicum more than the lecture method. The study makes three practical contributions. First, it extends the conversation from immediate achievement to retention measured through a delayed posttest. Second, it provides evidence from an underrepresented context—colleges of education in South-West Nigeria—where low-cost digital platforms may be especially attractive for instructional support. Third, it tests whether the relationship between instructional strategy and retention varies by gender.

1.1 Research questions

1. What is the difference in the retention scores of students taught Business Education Practicum using Facebook Instructional Strategy and those taught using the lecture method?
2. What is the difference in the retention mean scores of male and female students taught Business Education Practicum using Facebook Instructional Strategy?
3. What is the difference in the retention mean scores of male and female students taught Business Education Practicum using the lecture method?
4. What is the interaction effect of treatment and gender on students' retention in Business Education Practicum?

1.2 Hypotheses

1. There is no significant difference between the retention scores of students taught using the Facebook Instructional Strategy and those taught using the lecture method.
2. There is no significant difference between the retention scores of male and female students taught using the Facebook Instructional Strategy.
3. There is no significant difference between the retention scores of male and female students taught using the lecture method.
4. There is no significant interaction effect of treatment and gender on students' retention.

2 THEORETICAL BACKGROUND AND RELATED LITERATURE

2.1 Facebook as a technology-supported learning environment

Facebook was not originally designed as a learning management system, yet its affordances have made it attractive for instructional use in higher education. Users can create closed groups, share documents and links, post prompts, comment on peers' ideas, and revisit prior discussions. These features help create an enduring record of interaction rather than a one-time classroom event. Research on Facebook in higher education has therefore emphasised its capacity to support communication, informal learning, and classroom community (Madge et al., 2009; Goodwin et al., 2010; Jacob, 2013; Barczyk & Duncan, 2013). More recent reviews confirm that social media remains an active area of higher-education research and that Facebook continues to be one of the most frequently examined platforms for communication, collaboration, and resource sharing when it is deliberately integrated into pedagogy (Perez et al., 2023).

For practicum-based courses, this persistence matters. Students can return to examples, read clarifications posted by their lecturer, and continue dialogue after face-to-face teaching has ended. In contrast to classroom talk that disappears when a lesson ends, Facebook-based exchanges remain available for review. This can be useful in Business Education Practicum, where concepts are often connected to workplace scenarios and benefit from repeated reflection. Recent evidence also suggests that students often perceive familiar social platforms as practical supplementary learning spaces, especially when formal systems feel distant or cumbersome (Mlambo, 2026).

2.2 Retention in technology-supported learning

Retention refers to the extent to which learned information can be recalled after a period of time. The quality of instruction influences it, as do the opportunities learners have to rehearse and revisit content and the degree to which learning activities require active engagement rather than passive reception (Bandura, 2017; Dale, 1946). Technology-supported instruction can improve retention by increasing access to materials, supporting interaction, and giving learners multiple chances to process ideas. From this perspective, a platform such as Facebook may contribute to retention not because of its social character alone, but because it can extend exposure to content and encourage repeated cognitive engagement. Recent reviews of educational technology likewise stress that digital tools are most effective when they support structure, interaction, active learning, and sustained engagement rather than merely transferring content to an online space (Balalle, 2024; Godsk & Møller, 2025).

Retention is especially important in the Business Education Practicum because students are being prepared for later professional performance. Concepts in the course are not meant to remain theoretical; they are intended to inform conduct, communication, planning, and judgment in educational and workplace settings. Accordingly, instructional approaches that support delayed recall have clear pedagogical value in this domain.

2.3 Theoretical framing

The study draws on Connectivism and Student Involvement Theory. Connectivism explains learning as a process of creating and navigating networks of information, people, and digital tools (Siemens, 2004). On this view, learners do not rely only on what is stored internally; they also learn through access to distributed resources and through ongoing participation in digital environments. A closed Facebook group is consistent with this perspective because it allows students to connect with content, peers, and instructor prompts within a continuing network of interaction.

Astin's (1984) Student Involvement Theory complements this position by arguing that learning is linked to the amount of physical and psychological energy students invest in the educational experience. Facebook can strengthen such involvement when students read posts, contribute comments, ask questions, respond to peers, and revisit resources outside scheduled class time. These activities increase exposure to content and may reinforce memory traces over time. Together, the two theories provide a rationale for expecting Facebook-supported instruction to enhance retention.

2.4 Empirical studies and research gap

Empirical studies generally indicate that Facebook can support academic engagement, communication, and classroom community. Chen (2014) reported better outcomes for students taught through a Facebook-based learning environment than for those taught through other digital systems. Barczyk and Duncan (2014) found that Facebook contributed to students' sense of learning and connectedness, while Hurt et al. (2012) linked Facebook-mediated discussion to participation and critical engagement. Ractham et al. (2012) similarly showed that Facebook can support collaborative learning from a social-constructivist perspective. More recent work continues to point in the same direction. Perez et al. (2023), in a systematic review of higher-education research, concluded that social media can support teaching and learning, but that its pedagogical value depends on theoretically grounded design. In a more platform-specific study, Afroze (2024) found that Facebook-supported collaborative learning in a Bangladeshi college enhanced perceived learning outcomes while also revealing implementation challenges that required lecturer guidance and clear expectations.

Evidence that links interactive instruction to retention is also relevant. Veselinovskaa (2011) found that more interactive teaching methods led to greater retention than lecture-based approaches. In a Nigerian context, Eze et al. (2016) reported that a problem-based method improved both achievement and retention in financial accounting. More recent syntheses suggest that social media-supported learning can sustain engagement over time and thereby support durable learning outcomes (Alshuaibi et al., 2021; Davis & Fuchs, 2022). At the same time, recent research in higher education shows that the effects of social media are context dependent. Shafiq and Parveen (2023) associated social media use with academic performance and engagement under supportive learning conditions, whereas Martin et al. (2025), Gong et al. (2025), and Zhao (2023) underscore how distraction, multitasking, and poorly regulated use can weaken academic performance. Taken together, the newer literature suggests that social-media-based instruction is most defensible when it is structured, purposeful, and aligned with course tasks.

Even so, two gaps remain clear. First, relatively few studies directly measure delayed retention rather than immediate academic performance. Cost sensitivity is limited evidence from the Business Education Practicum in Nigerian colleges of education, where instructional technology must often be practical, familiar, and cost-sensitive. The present study addresses these gaps by testing the effect of a structured Facebook instructional strategy on delayed retention and examining whether that effect varies by gender.

3 METHOD

3.1 Research design

The study adopted a quasi-experimental pretest-posttest-delayed posttest design with non-randomised control groups. Two intact NCE II Business Education classes were assigned to treatment conditions. The experimental group received instruction via Facebook Instructional Strategy (FIS). In contrast, the control group was taught using the Lecture Teaching Method (LTM)—with a delayed posttest administered two weeks after the immediate posttest, which served as the retention measure. The design was appropriate because it allowed the researcher to compare retention outcomes under naturally occurring classroom conditions without disrupting existing class structures.

3.2 Context and participants

The study was conducted in colleges of education in South-West Nigeria. The population comprised 2,916 NCE II Business Education students across 18 accredited colleges of education in the region. NCE II students were selected because they had already adjusted to the academic environment, had the prerequisite background for Business Education Practicum, and were not yet on teaching practice.

A sample of 182 students was selected from two colleges using purposive and simple random procedures. Selection considered accessibility, the availability of intact Business Education classes, willingness to participate, and the presence of a sufficiently stable internet environment for Facebook-based activities. Adeyemi College of Education, Ondo, served as the experimental site, while Federal College of Education (Special), Oyo, served as the control site. The experimental group comprised 50 students (25 males and 25 females), and the control group comprised 132 students (35 males and 97 females). Students in the experimental group were screened to ensure active Facebook use and access to internet-enabled devices.

3.3 Instrument

Data were collected with the Business Education Practicum Achievement Test (BEPAT), a researcher-developed 50-item multiple-choice instrument based on the practicum topics taught during the intervention. Each item had four response options and covered knowledge, comprehension, and application levels of Bloom's taxonomy. The same instrument was used for the pretest, posttest, and delayed posttest, although the item order was reshuffled across administrations to reduce familiarity effects.

Three experts in Business Education, Computer Science Education, and Measurement and Evaluation validated the instrument for clarity, relevance, content coverage, and alignment with the table of specifications. Reliability was established with 10 NCE II Business Education students from a college outside the study sample. The KR-20 coefficient was .827, indicating good internal consistency for the study.

3.4 Procedure

The intervention lasted eight weeks. During the first week, both groups received orientation and completed the pretest. In Weeks 2 to 5, the experimental group participated in a closed Facebook group titled "BIZEDU PRACTICUM FORUM," moderated by the researcher. The group was used to post lesson notes, videos, links, and discussion prompts; students engaged in comment-based discussions, question-and-answer sessions, and peer interaction related to Business Education Practicum concepts. Students were encouraged to access the group at least twice weekly and to contribute meaningfully to discussions.

The control group received the same course content through the conventional lecture method. Instruction relied primarily on teacher explanation, board presentation, dictated notes, and limited interaction. In Week 6, both groups completed the posttest. In Week 8, the delayed posttest was administered to assess retention.

Several steps were taken to reduce threats to internal validity. Both groups covered the same content using a common lesson structure. Question order was reshuffled across test administrations. The two groups were located in different institutions to reduce contamination.

Attendance was monitored, and only students who completed all testing phases were retained in the final analysis. Additionally, students in the experimental group received a brief orientation to using Facebook for learning before the intervention's commencement.

3.5 Data analysis

Mean scores and standard deviations were used to answer the research questions. The null hypotheses were tested at the .05 level of significance using analysis of covariance (ANCOVA), with posttest performance treated as a covariate in the retention analysis. Least Significant Difference (LSD) post hoc comparisons were used to examine pairwise differences where appropriate.

4 RESULTS

4.1 Retention by instructional method

Table 1 presents the delayed posttest scores for students taught through the Facebook Instructional Strategy and those taught through the lecture method. The experimental group recorded a delayed posttest mean of 74.32, compared with 54.61 for the control group. The Facebook group also showed a larger gain from posttest to delayed posttest (+4.20) than the lecture group (+1.13). Descriptively, these results indicate stronger retention among students who learned through the Facebook-supported approach.

Table 1. Mean retention scores by instructional method

Instructional method	n	Posttest mean	Delayed posttest mean	Mean gain (retention)
Facebook (experimental)	50	70.12	74.32	+4.20
Lecture (control)	132	53.48	54.61	+1.13

4.2 Retention by gender within treatment conditions

Within the experimental group, female students had a slightly higher delayed posttest mean (74.96) than male students (73.68), producing a small mean difference of 1.28. Within the control group, female students also scored somewhat higher (55.46) than male students (52.26), with a mean difference of 3.20. These descriptive differences are modest and require inferential testing before concluding that there are gender effects.

Table 2. Retention scores of male and female students in the experimental group

Gender	n	Delayed posttest mean
Male	25	73.68
Female	25	74.96

Table 3. Retention scores of male and female students in the control group

Gender	n	Delayed posttest mean
Male	35	52.26
Female	97	55.46

4.3 ANCOVA and post hoc results

Table 4 presents the ANCOVA results. The treatment effect was statistically significant, $F(1, 177) = 151.45$, $p < .001$, indicating that the Facebook instructional strategy improved retention more than the lecture method after controlling for posttest scores. The gender main effect was not significant, $F(1, 177) = 0.94$, $p = .333$, and the interaction between treatment and gender was also not significant, $F(1, 177) = 0.12$, $p = .727$.

The pairwise comparisons in Table 5 clarify the direction of the treatment effect. Significant differences were observed between female students in the Facebook and lecture conditions, and between male students, both favouring Facebook-based instruction. By contrast, the gender differences within each instructional condition were not statistically significant. Overall, the inferential results show that Facebook-based instruction strengthened retention for both male and female students.

Table 4. ANCOVA summary of the effect of treatment on retention

Source	SS	df	MS	F	Sig.
Corrected model	19,471.28	4	4,867.82	128.88	.000
Intercept	7,854.87	1	7,854.87	207.96	.000
Posttest (covariate)	5,103.63	1	5,103.63	135.12	.000
Treatment	5,720.40	1	5,720.40	151.45	.000

Gender	35.66	1	35.66	.94	.333
Treatment × gender	4.62	1	4.62	.12	.727
Error	6,685.58	177	37.77		

Table 5. Pairwise comparisons of retention means by treatment and gender

Comparison	Mean difference	Sig.
Female-FB vs Female-Lecture	14.87*	.000
Male-FB vs Male-Lecture	14.12*	.000
Female-FB vs Male-FB	1.41	.437
Female-Lecture vs Male-Lecture	3.20	.431

***p* < .05**

5 DISCUSSION

5.1 Interpreting the treatment effect

The principal finding of the study is that students taught through Facebook Instructional Strategy retained Business Education Practicum concepts better than students taught through the lecture method. This result is consistent with the idea that retention improves when students encounter content repeatedly, actively engage with it, and revisit explanations beyond the immediate lesson. In the Facebook environment, learners could read posts, revisit earlier discussions, ask follow-up questions, and engage with peers over time. Those opportunities likely supported rehearsal and consolidation of learning in ways that conventional lecture delivery did not.

This interpretation aligns with Dale's (1946) view that active and multi-channel learning experiences strengthen retention. It is also in line with Connectivism, which sees learning as sustained through participation in digital networks (Siemens, 2004), and with Student Involvement Theory, which links academic outcomes to the depth of students' engagement (Astin, 1984). The present findings also resonate with earlier work showing positive effects of interactive and problem-based instruction on retention (Veselinovskaa, 2011; Eze et al., 2016), as well as with studies that have connected Facebook-supported learning to stronger engagement and connectedness (Barczyk & Duncan, 2014; Hurt et al., 2012).

The result is particularly relevant for teacher education and business education in contexts where sophisticated learning management systems may not always be available. Because Facebook is already familiar to many students, it can serve as a practical supplementary environment through which lecturers extend classroom interaction and maintain continuity of learning at relatively low cost. This interpretation also aligns with recent work suggesting that familiar technologies can support engagement when instructors organise activities around interaction, clarity, and explicit learning goals (Godsk & Møller, 2025; Mlambo, 2026). The finding should not be read as an endorsement of unstructured social-media use; rather, it highlights the value of intentionally designed Facebook-mediated learning activities.

5.2 Gender and interaction effects

Gender did not significantly influence retention in either treatment condition, and the treatment-by-gender interaction was not significant. This suggests that the Facebook intervention benefited male and female students in broadly similar ways. In practical terms, the platform did not appear to privilege one gender over the other regarding delayed recall of practicum concepts.

This finding is consistent with prior work reporting that Facebook-supported or technology-mediated instruction does not necessarily produce gendered differences in academic outcomes when learners have comparable access to the platform and participate in the same instructional activities (Hegadi & Angadi, 2015; Etim et al., 2016). In the present study, both male and female students in the Facebook group engaged with the same content, discussion prompts, and learning expectations. The similarity in retention outcomes may therefore reflect a relatively equitable instructional design rather than any inherent gender neutrality of the platform itself.

5.3 Implications for educational technology practice

The findings have implications for the use of educational technology in colleges of education. First, social media platforms can be pedagogically useful when they are treated as structured learning environments rather than as informal communication tools alone. Lecturers who adopt Facebook for instruction should clearly define discussion tasks, moderate participation, and align online activity with course objectives. Second, institutions seeking to improve retention in practicum-oriented courses may not need to rely exclusively on expensive digital infrastructure; familiar platforms can still support learning when used strategically. Third, teacher educators should help students develop norms for academic participation in social media spaces to keep interactions focused and purposeful. Recent evidence on digital distraction and multitasking further suggests that institutions should guide students in managing notifications, controlling attention, and setting appropriate boundaries during online learning activities (Martin et al., 2025; Zhao, 2023).

5.4 Limitations and future research

The study has limitations that should be considered when interpreting the findings. The use of intact classes in two institutions limits experimental control and may have influenced the results. Group sizes were also unequal, and the researcher taught the experimental group, while the regular lecturer taught the control group. Although the study used a covariate and common lesson structures to improve comparability, these features should be borne in mind.

Future studies could extend the retention interval beyond two weeks, compare Facebook with other social platforms such as WhatsApp, Telegram, or YouTube, and include qualitative data on students' experiences of online participation. Replication across additional institutions and

with more balanced group sizes would further strengthen the evidence base for social-media-supported instruction in Business Education and related fields.

6. CONCLUSION

This study showed that a structured Facebook instructional strategy can improve delayed retention in Business Education Practicum more effectively than the lecture method among NCE II students in South-West Nigeria. The treatment effect remained significant after controlling for posttest performance, whereas neither gender nor the gender-by-treatment interaction had a significant effect on retention.

Taken together, the results suggest that Facebook can serve as a practical technology-supported extension of classroom teaching when used deliberately for discussion, resource sharing, and continued engagement with course content. For Business Education Practicum and other practice-oriented courses in teacher education, Facebook can be a useful supplementary instructional tool for strengthening durable learning.

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Conflict of Interest Declaration

The author declares no conflict of interest.

Author Contributions Statement

The author developed the research idea, formulated the study objectives, and established the theoretical framework. He designed the quasi-experimental procedure, sampling strategy, and data analysis approach used. A central role was played in the collection, organisation, validation, and management of the research data. He prepared the initial manuscript draft, including literature review, analysis, and interpretation of the findings, and critically revised, refined, and edited it to ensure intellectual quality and journal compliance. Overall, the author oversaw the research process, implementation of the instructional intervention, and the coordination of the study activities.

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