

# Social media utilization for instructional delivery and student assessment in Obio Akpor secondary schools, rivers state: Types, extent, and challenges

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## ABSTRACT

This study investigated the utilization of social media for teaching and student assessment among secondary school teachers in Obio Akpor, Rivers State, focusing on the types, extent, and challenges associated with it. The study has five research questions and four hypotheses. The study employed a descriptive survey, and 156 teachers from private and public schools were selected using a stratified random sampling technique. The researchers collected data through a structured questionnaire titled "Teachers' Social Media Utilization for Instructional Delivery and Student Assessment Questionnaire (TSMUIDSAQ)". The researchers used Cronbach's alpha to assess the instrument's internal consistency, achieving a reliability coefficient of 0.94. Data was analyzed using frequency, simple percentage, mean, standard deviation, one-way, and two-way Analysis of Variance. The results showed that WhatsApp is the most used social media platform for instructional delivery and assessment, followed by Facebook, YouTube, Telegram, and LinkedIn, respectively. There was a significant influence in the extent of using social media for instructional delivery and assessment among secondary school teachers in Obio Akpor, Rivers State; gender and school type had a significant interaction on the extent of social media use for instructional delivery and assessment, and there was a significant influence of gender and school type on the levels of challenges experience, but there was no significant interaction influence. The recommendations include that school administrators provide digital resources that enhance social media utilization for instruction and ensure that female teachers have access to and effectively use them.

**Keywords:** Assessment, Digital resources, Digitalized society, Instructional delivery, Social media, Secondary schools.

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**Transparency:** The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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### Highlights of this paper

- This descriptive study surveyed the types, extent, and challenges of social media usage among secondary school teachers for instructional delivery and student assessment in Obio Akpor, Rivers State.
- The findings revealed that secondary school teachers often use WhatsApp for instruction and student assessment, and gender and school type (private and public schools) have significant interactions on the extent of and challenges teachers experienced in social media usage.
- The study suggested enhancing access to digital resources, teacher training, and incorporating assessment features in social media platforms for equitable and effective integration into instructional activities.

## 1. INTRODUCTION

A digitalized society requires digital teachers to teach digital learners with digital tools. The extent to which contemporary youths immerse themselves in digital tools, such as social media, is alarming. Social media seems to consume more than 70 percent of young people's daily time and activities as an increasing number of them are always on social media platforms either connecting, commenting, listening to music/audio messages, creating or watching videos, streaming live events, or chatting and sharing information with people of similar interest and purpose. Willbold (2019) asserted that every thirteen-year-old has a social media account. Aydoğmuş, Tut, and Karadağ (2023) affirmed that the youth are the highest age bracket that uses social media globally. While these young people traditionally use Social media for socialization and leisure, secondary school teachers can leverage the potential and affordances of different social media platforms to provide inclusive, engaging, and stimulating learning experiences to digitally connected and digital native learners. Hosen et al. (2021), cited in Perez, Manca, Fernández-Pascual, and Mc Guckin (2023) noted that Social media platforms are suitable for learning due to their document-sharing and online communication functionalities.

Social media is a prevailing tool in the digital age of communication, collaboration, and information dissemination. Nuscher (2024) defines social media as interaction channels that facilitate knowledge creation and sharing among users within networks and online communities. Dan, Jeanne, Tré, and Michelle (2024) viewed social media as a virtual communication mode where individuals develop content, pass information, and interact. Social media, therefore, are online applications for on-the-go and seamless interaction, communication, connection, collaboration, and every social activity; they serve as online tools for content creation and sharing, networks, and relationship building.

There are diverse social media platforms with different categorizations or types, such as social sites (examples are LinkedIn, Telegram, Facebook, and WhatsApp), media sharing sites (examples are Snapchat, YouTube, and Instagram), discussion forums (examples are Quora, Digg, and Reddit), (Publishing and Blogging sites (examples are Medium, WordPress, and Tumblr) and others, (Kakkar, 2023). Dan et al. (2024) listed Social media to include virtual worlds, social networking, photo and video sharing sites, wikis, micro-blogs, widgets, blogs, and podcasts. These platforms are accessible through the web or as downloaded applications on phones, desktops, and other gadgets with Internet access.

Different Social media platforms have unique characteristics that serve users' interests and facilitate diverse forms of interaction. For instance, one can use WhatsApp for quick updates and group communications, Facebook for community building, YouTube for video content creation/sharing, Telegram for secure messaging, LinkedIn for professional networking and educational content, and others. Nevertheless, teachers can utilize social media features for real-time and asynchronous teaching experiences and activities. Social media relies upon Web 2.0 technology, which offers free web space for users to generate and share online content without hosting a web server. Social media's free content creation and sharing ability remain the backbone for its use in online instructional activities.

Teachers/students have the opportunity to create and share multimedia content, participate in conversation, and send direct messages using the chat, discussion forums, attach files, comments, posts, live streaming, video and voice calls, chat, comments, and private messaging, and real-time updates feature inherent in most social media platforms.

Additionally, the social media user's ability to create a profile with a username or handle, a web address, and/or link, and form a group, page, or community helps a teacher to identify, invite, and connect with students individually or in groups within a social media platform. Students can join or follow a class group using an invitation link. Class group creation within social media platforms facilitates instructional delivery, content sharing, communication, collaboration, engagement, feedback, and class management. Some social media organize content in sections (for example, links, music, voice, media, and files sections) for easy navigation and identification.

Teachers can harness social media for instructional delivery and assessment. Instructional delivery encompasses every effort by a teacher to effectively present content, utilize methods and strategies, engage students with the environment and resources, and conduct evaluations (Mezieobi, 2009, cited in [Wordu and Akor \(2018\)](#)). [Chalky \(2023\)](#) noted that instructional delivery involves teachers applying teaching strategies to communicate learning content to enhance student engagement. Instructional delivery implies a teacher interacting and sharing instructional content and learning experiences with students using appropriate techniques, methods, and strategies based on learners' needs and interests to facilitate learning, achieve set instructional goals and objectives.

Student assessment is a means of evaluating student learning before, during, and after a program or an instruction using assessment instruments such as assignments, tests, quizzes, checklists, exams, and others to ascertain the extent to which a learner has achieved the learning objectives for possible improvement of the instructional process and decision making. Diagnostic, formative, and summative assessments are the three assessments based on administration period and purpose ([Miles, 2022; Outline, 2019](#)). Diagnostic assessment helps teachers understand students' skills, knowledge, and attitudes before teaching and to determine their strengths and weaknesses, for necessary support. Formative assessment occurs at intervals during teaching to monitor students' progress in achieving learning objectives and modify the instructional process. Summative assessment is an end-of-course or program evaluation used for certification or promotion.

Teachers' instructional delivery and assessment techniques have changed due to the increasing integration of technology, particularly the exponential growth of social media over the past few decades. Every learner needs to learn at their own pace and interact with peers and instructors without being limited by classroom boundaries. Using tailored instructional delivery and assessment modes that address every student's unique needs remains a crucial aspect of instruction. Social media disrupted the traditional instructional strategy, making instruction delivery, assessment, and learning experiences available to students in their comfort zones to facilitate communication, collaboration, student engagement, and feedback.

Teachers can utilize social media to post announcements, course materials, quizzes, and assignments, tests; hold live discussions or lectures, which they can also record for future use and references; record voice notes; engage in cross-channel learning, class discussions, and digital storytelling, and provide feedback to students' questions, ([Kenan, 2023](#)). [Evans \(2023\)](#) noted that social media can assist teachers in organizing team projects, communicating with students beyond the classroom, sharing learning materials, and other activities. [Ali \(2023\)](#) averred that social media improves access to learning resources, enhances collaboration and communication, personalizes learning content to students' needs, provides authentic learning experiences, engages students, and facilitates knowledge distribution and learning across the globe. [Sivakumar, Jayasingh, and Shaik \(2023\)](#) ascertained that social media promotes information sharing and engagement. Social media helps teachers facilitate class interaction,

accommodate students' multiple learning styles, facilitate independent study and content mastery, promote lifelong learning, and understand students' emotions and feelings through emojis.

Amidst the social media benefits for instructional delivery and student assessment, there are potential drawbacks to these platforms that can impede their integration into instructional processes. The challenges include privacy issues, fake information sharing, cyberbullying, distractions leading to poor attention, and technology addiction (Ali, 2023; Güney, 2023). Other drawbacks may include digital illiteracy among teachers, poor online interaction management skills, knowledge of online lesson designs, and the inability of most social media platforms to accommodate large video volumes with longer durations.

To make social media safe for instructional purposes, Banks, Diogenes, Alfano, and Ramee (2024) stated that instructors can allow students to use nicknames rather than their actual names, choose whether to submit their works privately or in the general platform, give feedback to each student's performance outside the social media group, and provide students with social media utilization ethical assessment. Other ways to solve the instructional social media utilization challenges may include teaching students self-discipline, determination, and time management skills, creating engaging lesson content, sharing reliable content, adequate privacy setting applications, giving students assignments and tasks on every topic with deadlines, breaking the lesson content into smaller chunks to create shorter video lengths of not more than 10 minutes or using platforms such as YouTube that allow longer videos. Teachers' professional development in digital literacy, online content development, and technology integration may provide a solution for teachers' related problems in social media utilization.

Several theories, including the diffusion of innovation theory by E. M. Rogers; the Technology Acceptance Model (TAM) by Fred Davis; the connectivism by George Siemens and Stephen Drownes; the constructivism by Lev Vygotsky and Jean Piaget, and engagement-based theories by G. Kearsley and B. Shneiderman, support social media utilization for instructional purposes. The diffusion of innovation theory categorizes teachers based on their adoption rates of social media for instruction, highlighting innovators, early adopters, early majority, late majority, and laggards. TAM emphasized that social media acceptance depends on teachers' perceived usefulness, ease of use, and support. Connectivism emphasizes the importance of forming networks for improved collaboration and learning through social media. Constructivism pointed out that teachers should support students' learning through social connections and experiences. The engagement-based theory advocates for collaborative, project-based activities and real-life content to enhance students' participation in learning activities.

There is some literature on the use of social media for educational purposes. For instance, Ananga and Sakyi (2023) explored educators' instructional social media utilization focusing on their understanding, guidelines on the utilization, and the challenges they experienced when using social media, among others; they found that the educators had social media awareness, utilized WhatsApp, Facebook and YouTube for teaching, and faced challenges such as school policy that prevents students from bringing in technological devices into the classroom, poor electricity supply and Internet connections, and low students' turnout in the platform. Ansari and Khan (2020) examined mobile technology, social media utilization, and implications for interaction and knowledge sharing among students and lecturers in an Indian University. They found that the platforms facilitated online resource sharing and peer and instructor interactions, which increased learners' engagement and academic performance.

Additionally, Eke and Achugbu (2020) surveyed the extent to which teachers use social media for instruction in Anambra State and found that the teachers' social media usage was low. The teachers also faced challenges such as poor professional training, inadequate electricity supply, and poor Internet Connections. Alabi, Falode, Nsofor, and Tukura (2016) investigated the extent to which higher institution students use social media for learning and their attitudes in Niger State, and found that they showed positive disposition using social media for other activities

rather than learning. Roundtree (2021) explored the extent to which college teachers use Social media for instruction and found that some teachers' social media usage influenced theirs. The teachers used social media to help students work independently, practice, discuss, and collaborate. Nwokike, Ezeabii, and Oluka (2021) findings revealed the limited extent of social media usage among lecturers in Enugu State University.

Adewoyin, Onuoha, and Ikonne (2017) studied librarians' social media use in some Nigerian Federal Universities and found that limited social media usage. The librarians used Facebook. They faced challenges such as inadequate electricity supply, Internet Connection, and ICT gadgets. Aydoğmuş et al. (2023) studied how teachers perceived and used Social media. They found that social media was beneficial and used it in their professional and personal development. Jaffer, Davids, and Seymour (2023) examined the challenges college teachers experienced when integrating social media into instructional delivery. They found that school policies, facilities, and social media features led to low social media usage among teachers in secondary schools. Nurudeen, Abdul-Samad, Owusu-Oware, Koi-Akrofi, and Tanye (2023) examined the effect of social media on university students' performance. They found that the students' performance had a significant negative correlation with Social Media Influence variables. Alonzo, Oo, Wijarwadi, and Hannigan (2023) reviewed social media use for student assessment. They found Facebook and Twitter were the prominent social media platforms used for assessment purposes, such as sending and discussing assessment questions, following student progress, providing feedback, and engaging in peer-to-peer and individual assessments.

From the foregoing, most studies on social media focused on teachers' awareness, perception, attitude, purpose, guidelines, implications for utilization, extent, and challenges. There is still a literature gap that failed to investigate the type of platform secondary school teachers in Obio/Akpor, Rivers State, use for instructional delivery and assessment, the extent of this utilization, and the level of challenges they encounter, especially at this era when contemporary youths use social media for pleasure purposes. These gaps, therefore, informed this research that answered the following questions.

### *1.1. Research Questions*

1. Which type of social media do secondary school teachers in Obio/Akpor, Rivers State, utilize for instructional delivery and student assessment?
2. To what extent can secondary school teachers in Obio/Akpor, Rivers State, use social media for instructional delivery and student assessment?
3. To what extent do gender (male and female) and school type (private and public) interact to influence secondary school teachers' use of social media for instructional delivery and student assessment in Obio/Akpor, Rivers State?
4. What are the levels of challenges secondary school teachers in Obio/Akpor, Rivers State, experience in using social media for instructional delivery and student assessment?
5. To what extent do gender (male and female) and school type (private and public) interact to influence the level of challenge experienced by secondary school teachers in Obio/Akpor, Rivers State, in using social media for instructional delivery and assessment of students?

The researchers tested the following hypotheses at a significant level of 0.05.

1. There is no significant difference in the extent to which secondary school teachers in Obio/Akpor, Rivers State, can use social media for instructional delivery and student assessment.

2. There is no significant interaction influence of gender (male and female) and school type (private and public) on the extent to which secondary school teachers in Obio/Akpor, Rivers State, use social media for instructional delivery and student assessment.
3. There is no significant difference in the levels of challenges experienced by secondary school teachers in Obio/Akpor, Rivers State, using social media for instructional delivery and student assessment.
4. There is no significant interaction influence of gender (male and female) and school type (private and public) on the level of challenges experienced by secondary school teachers in Obio/Akpor, Rivers State, in using social media for instructional delivery and student assessment.

## 2. METHODOLOGY

**Research Design:** The research design was a descriptive survey design.

**Population:** This comprised 714 teachers of 21 public senior secondary schools and private secondary school teachers from Obio/Akpor Local Government Area. (Source: [Rivers State Senior Secondary School Board \(2024\)](#)).

**Sample and Sampling Technique:** The researchers used a stratified random sampling technique based on gender to draw one hundred and fifty-six (156; 77 males, 79 females) teachers for the study

**Data Collection Instrument:** The instrument for data collection was the researchers' structured questionnaire titled "Teachers' Social Media Utilization for Instructional Delivery and Student Assessment Questionnaire (TSMUIDSAQ)". The questionnaire has four sections (A, B, C, and D). Section A collected demographic information, whereas Sections B, C, and D provided responses aligned with the research questions 1, 2, and 4, which respectively measured the social platforms used, the extent to which they use these platforms, and the level of challenges they experience using the platforms. The response format for section B was checkboxes, whereas sections C and D were the modified Likert 4-point scale of Very High Extent (VHE), High Extent (HE), Low Extent (LE), and Very Low Extent (VLE), and Not Challenging, Challenging, Very Challenging, Extremely Challenging, respectively.

**Instruments Validity:** Experts from Educational Technology and Measurement and Evaluation in the Faculty of Education, University of Port Harcourt, evaluated the instrument for face and content validity.

**Instrument's Reliability:** The researchers employed a Cronbach alpha technique and got the instrument's internal consistency and an alpha reliability coefficient of 0.94.

**Data Collection Method:** The researchers employed research assistants who forwarded the instrument's Google form link to their schools' social media and also distributed the instrument physically to teachers who could not access the Google form.

**Data Analysis Method:** The researchers analyzed data using Mean, standard deviation, frequency, Simple percentage, One-way, and Two-Way Analysis of Variance (ANOVA).

## 3. RESULTS

**Research Question 1:** Which type of social media do secondary school teachers in Obio/Akpor, Rivers State, utilize for instructional delivery and assessment of students?

**Table 1** highlights the diverse social media platforms that the secondary school teachers used for instructional delivery and student assessment. The data reveals significant differences in the adoption rates of different platforms, reflecting preferences and patterns of use among the 156 teachers surveyed.

**Table 1.** Frequency distribution table and percentage of the type of social media secondary school teachers use for instructional delivery and assessment of students.

S/N	Social media platforms	Frequency (Percentage)
1	WhatsApp	111 (71%)
2	X (Twitter)	0 (0%)
3	Facebook	86 (55%)
4	Skype	1 (0.64%)
5	TikTok	3 (1.9%)
6	Telegram	69 (44%)
7	YouTube	85 (54%)
8	LinkedIn	63 (40%)
9	Snapchat	3 (1.9%)
10	Instagram	9 (5.77%)
11	Quora	0 (0%)
12	WordPress	60 (38%)

WhatsApp, used by 111 teachers (71%), emerges as the most preferred platform for instructional delivery and assessment-related tasks. Its popularity stems from its robust features, including group chats, multimedia sharing, and the ability to send and receive files in various formats. WhatsApp allows teachers to create class groups and share lesson notes, videos, audio files, and other multimedia resources for instructional delivery. It facilitates real-time discussions and interactions, enabling teachers to explain concepts, answer questions, and engage students actively. Its user-friendly interface and widespread availability make it a preferred platform for disseminating educational content quickly and efficiently. For student assessment, teachers can easily use WhatsApp to distribute assignments, administer short tests through chat, and provide timely feedback. Its real-time communication feature is especially effective for addressing students' queries and clarifying doubts, making it a versatile tool for continuous assessment and personalized feedback.

Facebook, with 86 users (55%), is also extensively used, likely due to its ability to create closed groups for classes and share multimedia content, assignments, and updates. It is another popular platform for instructional delivery, as seen by the teachers' responses. Teachers leverage their group and page features to share educational posts, videos, and links. It also enables collaborative learning through discussion threads and multimedia sharing. However, while Facebook supports instructional delivery through its interactive features, its utility for real-time engagement is somewhat limited compared to WhatsApp. Teachers can utilize Facebook's group features to post discussion prompts, manage peer-reviewed activities, and collect assignments. However, there may be limits to its effectiveness for detailed feedback and individualized assessments compared to more direct communication tools such as WhatsApp.

YouTube, used by 85 teachers (54%), plays a critical role in instructional delivery, particularly for visual and auditory learning. Teachers often use YouTube to share or recommend educational videos, tutorials, and demonstrations. It is highly effective for subjects requiring step-by-step guidance, such as science experiments, mathematical problem-solving, or arts and crafts. While YouTube does not facilitate direct interaction, it enriches instructional delivery by providing a vast repository of ready-made and customizable content that supports independent and group learning. However, its use for assessment is relatively indirect, as it lacks features for direct student-teacher interaction or structured feedback. Teachers in this sample who use it may rely on YouTube to supplement learning resources but turn to other platforms for administering tests and providing performance-related feedback.

Telegram, used by 69 teachers (44%), is notable for its large group size capacity and enhanced file-sharing capabilities. Teachers can distribute assignments, administer quizzes, and provide effective feedback. Its advanced

privacy features and reliability in delivering large files make it suitable for sharing study materials, recorded lessons, and detailed assessment instructions. Telegram's structured format supports clear communication, making it a valuable tool for instructional delivery and assessment.

LinkedIn, used by 63 teachers (40%), is primarily a professional networking platform that suggests some potential for promoting academic development and sharing resources. Given its focus on professional connections rather than student engagement, the researchers expected limited use for direct instructional delivery and assessment.

Its role in instructional delivery is supplementary, focusing more on enhancing students' professional awareness. However, teachers may leverage it to share students' achievements or connect with academic communities.

WordPress, with 60 users (38%), reflects the adoption of blogs or websites for educational purposes. Teachers use this platform to create blogs or websites to post detailed lesson notes, schedules, and supplementary resources; this approach supports asynchronous learning, allowing students to access instructional materials at any time. Teachers can use WordPress to publish assignments, tests, and study materials in an organized manner. Additionally, it allows for asynchronous assessment, where students can submit their work online, and teachers can provide detailed written feedback. The platform's permanence and accessibility make it a robust tool for tracking students' progress.

Instagram, TikTok, and Snapchat, with combined minimal usage (9 users (5.77%) for Instagram; 3 users (1.9%) for TikTok and Snapchat each), have limited roles in instructional delivery. These platforms are primarily entertainment-oriented, but their visual and creative features offer potential for innovative teaching methods. Teachers can use Instagram to share infographics, TikTok to create short educational videos, and Snapchat for storytelling. However, these platforms require significant adaptation to align with instructional objectives, which may explain their limited adoption. While these platforms can repurpose instructional content, their adoption for assessment and feedback remains negligible. These platforms lack the structured tools to monitor student performance and provide detailed feedback.

Skype, with only one user (0.64%), indicates that the teachers rarely used video conferencing for assessment or instructional delivery. While suitable for live video lessons and one-on-one teaching, its complexity and lack of integration with multimedia-sharing tools make it less appealing when prioritizing ease of use and multitasking. Teachers can use Skype for oral assessments or one-on-one feedback sessions, but its declining popularity compared to more accessible alternatives such as Zoom or WhatsApp limits its relevance.

Platforms like X (Twitter) and Quora, which had no recorded usage, underscore their perceived unsuitability for instructional delivery and assessment. Twitter's brevity and lack of robust educational tools, combined with Quora's format as a Q&A platform, limit their adoption for structured teaching or assessment tasks.

Table 1 shows that secondary school teachers in Obio/Akpor prefer platforms that combine ease of use, versatility, and interactivity for instructional delivery and student assessment. WhatsApp, Facebook, and Telegram are the most effective tools for facilitating communication, assignments, and real-time feedback. While platforms like YouTube and WordPress supplement instructional delivery with rich resources, their use for direct assessment is less prominent. The limited adoption of platforms like Instagram, TikTok, and LinkedIn for assessment purposes reflects their alignment with other roles.

Research Question 2: To what extent can secondary school teachers in Obio/Akpor, Rivers State, use social media for instructional delivery and student assessment?

*Hypothesis 1: There is no significant difference in the extent to which secondary school teachers in Obio/Akpor, Rivers State, can use social media for instructional delivery and assessment of students.*

**Table 2.** Mean, SD, and one-way ANOVA analysis of the significant difference in the extent to which secondary school teachers in Obio/Akpor, Rivers State, use social media for instructional delivery and assessment of students.

Extent	N	Mean	Std. dev	F	Sig.	Decision
Very low extent	12	9.00	0.00			
Low extent	16	13.69	2.96			
High extent	28	23.07	2.95	399.06	0.00	Reject Ho
Very high extent	100	28.85	2.21			
Total	156	24.73	6.98			

The analysis in Table 2 shows variations in the extent to which secondary school teachers in Obio/Akpor, Rivers State, utilize social media for instructional delivery and student assessment. The researchers presented data using the mean scores, standard deviations, and results of a one-way ANOVA test. The categorization includes four levels of usage extent: Very Low Extent, Low Extent, High Extent, and Very High Extent.

The mean scores indicate a progressive increase in the extent of usage across the categories. Teachers with a Very Low Extent of Social Media Utilization scored an average of 9.00, with no observed variability, as evidenced by a standard deviation of 0.00. This uniformity suggests a consistent lack of engagement with social media tools among the teachers in this group. In contrast, teachers categorized under "Low Extent" reported a higher mean score (13.69) and standard deviation (2.96). This group demonstrates some variability in social media usage, indicating that while engagement is minimal, there is a broader spectrum of activity than the Very Low Extent group.

Teachers classified under High Extent usage recorded a substantially higher mean score of 23.07, with a similar standard deviation of 2.94. This result reflects a notable increase in the adoption and application of social media for instructional delivery and assessment. The variability within this group is comparable to the Low Extent group, suggesting consistent usage among most teachers. The Very High Extent group exhibits the highest mean score of 28.85, and a relatively low standard deviation of 2.21. This result indicates widespread and consistent social media usage among teachers at this level. The reduced variability highlights the near-universal adoption of social media as a functional tool for engaging with students in this group.

Overall, the total mean score across all categories is 24.73, with a standard deviation of 6.98, which reflects a moderate to high average level of social media use among secondary school teachers in the region. However, the standard deviation also suggests a considerable spread in usage levels, reinforcing diverse engagement patterns among the teachers.

The one-way ANOVA test results reveal a highly significant difference ( $F = 399.06$ ,  $p = 0.001 < 0.05$ ) in the extent of social media usage among the groups. This statistical significance confirms that the variations observed across the categories are not due to random chance but rather reflect genuine differences in behavior or circumstances. Thus, the researchers rejected the null hypothesis, that there is no significant difference in the extent to which secondary school teachers in Obio/Akpor, Rivers State, can use social media for instructional delivery and student assessment, and accepted the alternative. The highly significant p-value further emphasizes the pronounced disparity between the groups (that is, a statistical difference between teachers who use social media for instructional delivery and assessment to a very high extent, those with a high extent, those with a low extent, and those with a very low extent of use). Table 1 and 2 thus highlights a statistically significant range in the utilization of social media for instructional and assessment purposes among secondary school teachers in Obio/Akpor.

Research Question 3: To what extent do gender (Male and female) and school type (Private and public) interact to influence secondary school teachers' use of social media for instructional delivery and assessment of students in Obio/Akpor, Rivers State?

*Hypothesis 2: There is no significant interaction influence of gender (male and female) and school type (private and public) on the extent to which secondary school teachers in Obio/Akpor, Rivers State, use social media for instructional delivery and assessment of students.*

**Table 3.** Mean, SD, and two-way ANOVA analysis of the significant interaction influence of gender (Male and female) and school type (Private and public) on the extent to which secondary school teachers in Obio/Akpor, Rivers State, use social media for instructional delivery and assessment of students.

School type	Gender	Mean	Std. Dev	N	Univariate test (F)	Sig.	Decision
Public school	Male	29.31	2.18	13	14.20	0.00	
	Female	16.00	6.62	30			
	Total	20.03	8.36	43			
Private school	Male	26.05	6.67	66	33.41	0.00	Reject Ho
	Female	27.19	2.83	47			
	Total	26.52	5.43	113			
Total	Male	26.58	6.27	79	47.19	0.00	
	Female	22.83	7.19	77			
	Total	24.73	6.98	156			

The data in Table 3 provide a detailed view of the interaction influence of gender (Male and female) and school type (public and private) on the extent to which secondary school teachers in Obio/Akpor, Rivers State, use social media for instructional delivery and student assessment. The analysis incorporates mean scores, standard deviations, and a two-way ANOVA test to evaluate the significance of the interaction effects.

The results reveal distinct patterns in social media usage across gender and types of school. Among teachers in public schools, male teachers recorded a significantly higher mean score of 29.31 with a low standard deviation of 2.18, suggesting a high and consistent use of social media within this group. In contrast, female teachers in public schools reported a substantially lower mean score of 16.00, with a standard deviation of 6.62, indicating a lower overall engagement and a higher variability in usage patterns. The combined mean score for all public-school teachers was 20.02, with a standard deviation of 8.36, reflecting the disparity in social media utilization between male and female teachers. The two-way ANOVA results further emphasize the significance of the interaction effects. The gender-based difference in social media usage in public schools is significant ( $F = 14.20$ ,  $p = 0.00 < 0.05$ ). This reveals a huge difference in the extent of social media platforms' usage for instructional and assessment purposes between male and female teachers in public schools. Thus, being a male or female teacher (especially a male) from a public school has a significant influence on the extent of social media platforms' usage for instructional delivery and student assessment.

In private schools, the pattern shifts. Male teachers exhibited a mean score of 26.05 with a standard deviation of 6.67. This shows a high social media usage with moderate variability. Female teachers in private schools surpassed their male counterparts with a mean score of 27.19 and a lower standard deviation of 2.83, indicating slightly higher engagement and greater consistency in their use of social media. The total mean score for the private school teachers was 26.52, with a standard deviation of 5.42. This demonstrates a relatively high and stable social media utilization across genders in this category. There is a significant gender-based difference in social media use in private schools ( $F = 33.41$ ,  $p = 0.00 < 0.05$ ). This reveals a huge difference in the extent of social media platforms'

usage for instructional and assessment purposes between male and female teachers in private schools. Thus, being a male or female teacher (especially a female) from a private school has a significant influence on the extent of social media platforms' usage for instructional delivery and student assessment.

Analysis across school types on social media platforms' usage for instructional delivery and assessment revealed that private school teachers had a higher mean score (26.52) than public school teachers' mean score (20.02). When analyzed across all teachers, male teachers reported a mean score of 26.58 with a standard deviation of 6.27, while female teachers had a lower mean score of 22.83 and a standard deviation of 7.19. These results suggest that, irrespective of school type, male teachers generally engage more with social media for instructional purposes than female teachers; though female teachers in private schools show comparable or higher levels of engagement than their male counterparts. The total mean score for all teachers, irrespective of gender and school type, was 24.73, with a standard deviation of 6.98, indicating moderate overall engagement with significant variability.

The two-way ANOVA results further emphasize the significance of the interaction influence. The gender and school-based difference in social media usage for instructional delivery and student assessment is significant ( $F = 47.19$ ,  $p = 0.00 < 0.05$ ). This reveals a significant difference in engagement levels of social media platforms for instructional delivery and assessment between male and female teachers in public and private schools highlighting that the influence of gender on social media usage is not uniform across school types. Thus, the researchers rejected the null hypothesis of no significant interaction influences of gender (male and female) and school type (private and public) on the extent to which secondary school teachers in Obio/Akpor, Rivers State, use social media for instructional delivery and assessment of students, and accepted the alternate.

Research Question 4: What are the levels of challenges experienced by secondary school teachers in Obio/Akpor, Rivers State, in using social media for instructional delivery and assessment of students?

*Hypothesis 3: There is no significant difference in the levels of challenges experienced by secondary school teachers in Obio/Akpor, Rivers State, in the use of social media for instructional delivery and assessment of students.*

**Table 4.** Mean, SD, and one-way ANOVA analysis of the significant difference in the levels of challenges experienced by secondary school teachers in Obio/Akpor, Rivers State, in the use of social media for instructional delivery and assessment of students.

Levels of challenge	N	Mean	Std. Deviation	Univariate test (F)	Sig	Decision
Not challenging	7	7.29	0.76			
Challenging	69	13.20	1.32			
Very challenging	71	16.00	2.34	121.12	0.00	Reject Ho
Extremely challenging	9	22.67	1.00			
Total	156	14.76	3.36			

The data presented in Table 4 provides insights into the levels of challenges faced by secondary school teachers in Obio/Akpor, Rivers State, when utilizing social media for instructional delivery and student assessment. The analysis encompasses mean scores, standard deviations, and the results of a one-way ANOVA test to determine significant differences across various challenge levels.

The mean scores illustrate a clear progression in the severity of challenges reported by teachers. Teachers who identified their experience using social media platforms for instructional delivery and student assessment as not challenging had the lowest mean score of 7.29 with a standard deviation of 0.76, reflecting minimal perceived difficulties and a high level of consistency among respondents in this category. This group represents a minority, indicating that very few teachers face negligible challenges when integrating social media into their teaching practices.

Teachers who classified their experience as challenging reported a higher mean score (13.20) and standard deviation (1.32). This result suggests a moderate difficulty level with a relatively low degree of variability, indicating that most teachers in this group face similar challenges. Thus, a significant portion of the teaching population perceives social media usage as moderately challenging.

The Very Challenging category had a mean score of 16.00 with a standard deviation of 2.34, reflecting a higher level of difficulty and variability in the challenges experienced by teachers. This group comprises a significant number of respondents, indicating that the challenges associated with social media use are intense for teachers.

The Extremely Challenging category stands out with the highest mean score of 22.67 and a relatively low standard deviation of 1.00. This result suggests that teachers in this group face severe and consistent challenges when using social media for instructional delivery and assessment. Although this group is relatively small, the high mean score indicates that their challenges are markedly more severe than those of other groups. The overall mean score for all teachers is 14.76, with a standard deviation of 3.36. This result reflects moderate levels of challenges teachers face, but the standard deviation indicates considerable variability across the different categories.

The one-way ANOVA result revealed a statistically significant difference ( $F = 121.12$ ,  $p = 0.00 < 0.05$ ) in the challenge levels. The statistical significance confirms that the observed differences in mean scores across the categories are not due to random variation but represent genuine disparities in the levels of challenges teachers experienced when using social media platforms for instructional delivery and student assessment. The significant p-value shows the marked difference between teachers in the Not Challenging, Challenging, Very Challenging, and Extremely Challenging categories. Thus, the researchers rejected the null hypothesis, that there is no significant difference in the levels of challenges experienced by secondary school teachers in Obio/Akpor, Rivers State, when using social media for instructional delivery and students' assessment, and accepted the alternative.

Research Question 5: To what extent do gender (male and female) and school type (private and public) interact to influence the level of challenge experienced by secondary school teachers in Obio/Akpor, Rivers State, in the use of social media for instructional delivery and assessment of students?

*Hypothesis 4: There is no significant interaction influence of gender (male and female) and school type (private and public) on the level of challenges experienced by secondary school teachers in Obio/Akpor, Rivers State, in the use of social media for instructional delivery and assessment of students.*

**Table 5.** Mean SD and two-way ANOVA analysis of the significant interaction influence of gender (Male and female) and school type (Private and public) on the level of challenges experienced by secondary school teachers in Obio/Akpor, Rivers State, in the use of social media for instructional delivery and assessment of students.

School type	Gender	Mean	Std. Dev	N	F	Sig.	Decision
Public school	Male	11.23	2.68	13	12.96	0.00	Reject Ho
	Female	14.90	4.49	30			
	Total	13.79	4.35	43			
Private school	Male	14.55	1.72	66	17.52	0.00	
	Female	15.93	3.76	47			
	Total	15.13	2.83	113			
Total	Male	14.00	2.26	79	3.56	0.06	Accept Ho
	Female	15.53	4.06	77			
	Total	14.76	3.36	156			

The data in Table 5 examines the interaction effects of gender (male and female) and school type (public and private) on the challenges experienced by secondary school teachers in Obio/Akpor, Rivers State, when using social

media for instructional delivery and assessment. The analysis was on mean scores, standard deviations, and results from a two-way ANOVA test.

In public schools, male teachers reported a mean challenge level of 11.23 with a standard deviation of 2.68, indicating a relatively lower level of challenges with moderate variability among individuals in this group when using social media platforms for instructional delivery and students' assessment. However, female teachers in public schools experienced a significantly higher mean challenge level of 14.90 with a standard deviation of 4.49. The result suggests that female teachers in public schools encounter more difficulties, with higher variability in their experiences, than their male counterparts. The overall mean score for public school teachers is 13.79, with a standard deviation of 4.35, reflecting moderate challenges with some gender disparity. The ANOVA results reveal significant influences. The influence of gender on the challenges public school teachers experienced is statistically significant ( $F = 12.96$ ,  $p = 0.00$ ,  $p < 0.05$ ). This indicates a notable disparity in challenge levels among the male and female teachers. Thus, being a male or female teacher (especially a female) from a private school significantly influences the level of challenges experienced in using social media platforms for instructional delivery and student assessment.

In private schools, male teachers reported a higher mean challenge level of 14.55, with a standard deviation of 1.72, indicating a moderate level of challenges but with relatively low variability, suggesting consistent experiences across this group. Female teachers in private schools had the highest mean challenge level at 15.94, with a standard deviation of 3.76. This result indicates that female teachers in private schools face the most significant challenges compared to all other groups in this analysis, with more variability than their male colleagues in the same school type. The overall mean score for private school teachers is 15.12, with a standard deviation of 2.83, reflecting generally higher and more consistent challenges than those reported by public school teachers. Also, the ANOVA results reveal significant interaction influences. Gender significantly influenced the levels of challenges that private school teachers experienced ( $F = 17.52$ ,  $p = 0.00 < 0.05$ ). This reveals a significant disparity in challenge levels between male and female teachers. Thus, being a male or female teacher (especially a female) from a public school significantly influences the challenges faced when using social media platforms for instructional delivery and student assessment.

When analyzed across school types, private school teachers reported a higher mean score (15.12) than public school teachers' mean score (13.79). When comparing genders across all school types, male teachers reported an average challenge level of 14.00, with a standard deviation of 2.26, indicating moderate challenges with relatively consistent experiences. Female teachers had a higher mean score of 15.53, with a standard deviation of 4.06. This demonstrated that female teachers encounter higher levels of challenges with more variability in their experiences than male teachers. The total mean score across all groups is 14.76, with a standard deviation of 3.36, representing a moderate level of challenges teachers faced on average, with considerable differences between subgroups.

The two-way ANOVA results, however, reveal no significant interaction influences. When combining all groups, the overall interaction effect between gender and school type on challenge levels is not statistically significant ( $F = 3.56$ ,  $p = 0.06 > 0.05$ ), suggesting that the differences between groups are less pronounced across the entire dataset. That is, gender and school-based differences in the challenges teachers experienced in social media usage for instructional delivery and student assessment are not statistically significant ( $F = 3.56$ ,  $p = 0.06 > 0.05$ ). This reveals a no significant difference in levels of challenges in the use of social media platforms for instructional delivery and assessment between male and female teachers in public and private schools. Thus, while there is a significant influence of school type on the challenges experienced and a gender influence on the challenges faced, there is no significant interaction influence. Thus, the researchers accepted the null hypothesis that there is

no significant interaction influence of gender (male and female) and school type (private and public) on the level of challenges experienced by secondary school teachers in Obio/Akpor, Rivers State, in the use of social media for instructional delivery and assessment of students, and rejected the alternative.

#### 4. DISCUSSION OF FINDINGS

Table 1 shows that secondary school teachers in Obio/Akpor prefer platforms that combine ease of use, versatility, and interactivity for both instructional delivery and student assessment. WhatsApp, Facebook, and Telegram are the most effective tools that teachers use to facilitate communication, assignments, and real-time feedback. While platforms like YouTube and WordPress supplement instructional delivery with rich resources, their use for direct assessment is less prominent. The limited adoption of platforms like Instagram, TikTok, and LinkedIn for assessment purposes reflects their alignment with other roles. This result aligns with Ananga and Sakyi (2023) and Alonzo et al. (2023) which revealed that educators used WhatsApp, Facebook, YouTube, and Twitter for teaching and students' assessment.

Table 2 shows that teachers use social media platforms for instructional delivery and assessment at a moderate to high level. Table 3 also shows that gender (male and female) has a significant influence on the extent to which secondary school teachers use social media for instructional delivery and assessment. Thus, being a male or female teacher (especially a male) from a public school significantly influences social media use for instructional delivery and student assessment. It also shows that the school (private and public) has a significant influence on the extent to which secondary school teachers use social media for instructional delivery and assessment of students. Table 3 further reveals a significant interaction influence of gender (male and female) and school (private and public) on the extent to which secondary school teachers in Obio/Akpor, Rivers State, use social media for instructional delivery and student assessment. The finding indicates that male teachers and those in private secondary schools in Obio Akpor, Rivers State, find it easier to use social media for instructional purposes. Female and public school teachers may not use Social media for instructional purposes due to institutional biases, training opportunities, and access to resources. The findings agreed with Alabi et al. (2016) and Roundtree (2021) but disagreed with Eke and Achugbu (2020); Adewoyin et al. (2017) and Nwokike et al. (2021) who reported that the teachers had a low extent of Social media utilization.

The result in Table 4 showed differences in the levels of challenges faced by secondary school teachers in Obio/Akpor when using social media for instructional delivery and assessment. While a small group of teachers faced minimal difficulties, many reported moderate to severe challenges, with a notable minority facing extreme difficulties. The one-way ANOVA results reveal a highly statistically significant difference ( $F = 121.12, p = 0.00 < 0.05$ ) among the challenge levels, leading to the rejection of the null hypothesis. This result shows that secondary schools encounter challenges when using it for instructional purposes. This finding somewhat agrees with Adewoyin et al. (2017) who reported that ICT gadgets hinder librarians' social media utilization for library services, and Ananga and Sakyi (2023); Nurudeen et al. (2023) and Jaffer et al. (2023) who found that school policy and facilities contributed to the low social media utilization in secondary schools.

Table 5 shows that gender (male and female) has a significant influence on the level of challenges experienced by secondary school teachers in using social media for instructional delivery and assessment. It also shows that the school (private and public) significantly influences the level of challenges experienced by secondary school teachers in using social media for instructional delivery and assessment. However, the Table 5 result showed no significant interaction influence of gender (male and female) and school type (private and public) on the level of challenges that secondary school teachers in Obio/Akpor, Rivers State, face when using social media for instructional delivery and

student assessment. The Table 5 result also shows that female and private school teachers face more difficulties using social media for instruction than male and public-school teachers. However, being a male or female from a public or private school does not influence the level of challenges experienced in using social media platforms for instructional delivery and student assessment.

## 5. CONCLUSION

The study on the types, extent, and challenges of social media utilization for instructional delivery and assessment among secondary school teachers in Obio Akpor, Rivers State, disclosed that WhatsApp is the most used social media platform for instructional delivery and assessment, followed by Facebook, Youtube, Telegram, and LinkedIn respectively while Instagram, Snapchat, TikTok, Snapchat, Skype, X (Twitter), and Quora have limited or no adoption. Gender and school type significantly influence teachers' use of social media for instructional purposes, with male teachers and those in private schools using it more extensively. Teachers face significant challenges using social media for instruction, with female teachers experiencing great difficulties, although there was no significant interaction between gender and school type. These findings buttress the need to address gender-specific issues that affect social media utilization for instructional delivery and assessment.

## 6. RECOMMENDATIONS

1. Teachers should focus their instructional delivery using social media platforms like WhatsApp, Facebook, YouTube, Telegram, and LinkedIn, and develop inclusive strategies for those using less popular platforms.
2. Teachers should utilize social media platforms, such as WhatsApp, Telegram, and YouTube, to conduct continuous assessments of cognitive and non-cognitive domains. Teachers can use WhatsApp to address student queries and clarify doubts, since it has an effective real-time communication feature. WhatsApp is a versatile tool for continuous assessment and personalized feedback.
3. Government, School administrators, and Non-Governmental Organizations should focus on providing regular workshops and training to female and public-school teachers to acquire the necessary skills to use social media effectively in their instructional delivery and assessment.
4. School administrators should provide digital resources that enhance social media utilization for instructional activities and ensure that female teachers have access to these resources.
5. Teachers and school administrators can collaborate with social media developers to build reliable and secure formal assessment features in popular social media platforms, enabling teachers to assess students effectively through these platforms.
6. Further research should focus on identifying specific challenges that female and public teachers face in utilizing social media for instruction and ways to address them.

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