

Management of Team Work in a Digital Age for Sports Programme Effectiveness in Public Senior Secondary Schools in Rivers State, Nigeria

Stanley Chinenye Alaubi*

Abstract

This study was basically on the management of team work in a digital age for sports programme effectiveness in public senior secondary schools in Rivers State, Nigeria. A descriptive survey research design was adopted. The population comprised all 286 principals and 572 sports officials across the public senior secondary schools in the state. A sample size of 429 respondents was selected using a stratified random sampling technique. Data collection was executed using a structured, validated instrument titled Management of Teamwork in Digital Age Questionnaire (MTDAQ), which demonstrated a high reliability index of $\alpha = 0.84$. Research questions were analyzed using arithmetic mean and standard deviation, while the null hypotheses were tested using an independent samples t-test at a 0.05 level of significance. The findings revealed that utilizing digital communication platforms (e.g., instant messaging groups, virtual meeting applications) significantly improves task coordination, information sharing, and data tracking among sports management teams, thereby enhancing sports programme effectiveness. However, challenges such as inadequate digital infrastructure, staff demographic diversity, and low technological literacy among personnel impede full optimization. Based on these findings, it was concluded that strategic management of digital teamwork is vital for modernizing school athletic administration. It is recommended that the Rivers State Post Primary Schools Board (PPSB) provide consistent digital literacy training for sports coordinators and invest in basic digital administrative tools to enhance collaborative workflow.

Keywords: Teamwork management, digital age, sports programme effectiveness, public secondary schools, Rivers State

INTRODUCTION

Physical education and institutional sports programmes serve as key avenues for talent identification, physical fitness, and holistic youth development within the Nigerian secondary educational tier (Longyen & Sambo, [1] 2025). Historically, managing these programmes in public senior secondary schools across Rivers State relied on centralized, top-down manual administrative models. These methods frequently ran into operational delays, miscoordinated schedules, and fragmented communication between school principals, games masters, and physical education specialists (Deemua & Chinda, [2] 2018).

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In the current 21st-century educational space, the intersection of digital technology and organizational management has changed how institutional goals are pursued [3]. Teamwork, which involves pooling multiple human resource capacities to execute institutional strategies, is no longer bound by physical proximity (Nwakwuo, [4] 2023). The digital age introduces collaborative

tools—ranging from instant cloud-based messaging interfaces to digital tracking platforms—that allow real-time synchronization of tasks, collaborative coaching plans, and quick administrative data retrieval (Uzochukwu & Oluwuo, [5] 2022).

For sports programmes to be effective, school administrators must establish well-coordinated, flexible teams capable of managing logistics, student safety, inter-scholastic scheduling, and facilities maintenance. In Rivers State public schools, however, the adoption of digital management paradigms within sporting units encounters unique systemic realities. These include varying levels of digital literacy among staff, infrastructure limitations, and deep-seated preferences for traditional paperwork (Nnenda, [3] 2026). Hence, assessing how teamwork is managed using digital tools, and its subsequent influence on the operational success of secondary school sports programs, remains a highly relevant administrative question.

This conceptual framework positions digital teamwork as an interactive process. When school administrators leverage technology to direct communications and assign explicit operational roles, team cohesion increases (Nwakwuo, [4] 2023). According to the Systemic Input-Process-Output (IPO) model, optimizing these internal digital processes alters administrative performance, directly driving measurable outcomes in secondary school athletic administration (Figure 1).

METHODOLOGY

This study adopted a descriptive survey research design to extract objective assessments from school administrative stakeholders regarding digital teamwork dynamics.

Population and Sample

The target population comprised all 286 school principals and 572 designated sports officers across public senior secondary schools in Rivers State. Applying a stratified random sampling technique based on educational zones, a sample size of 429 respondents (143 principals and 286 sports officers) was drawn.

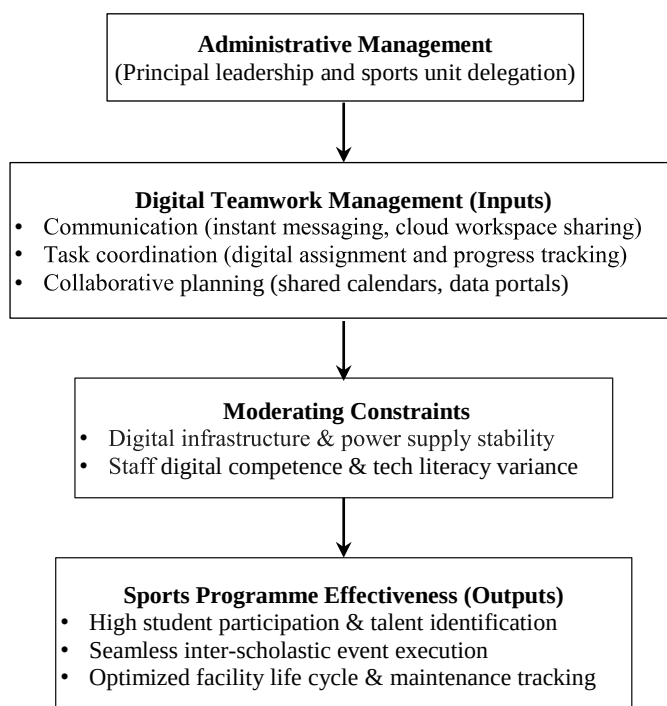


Figure 1. Conceptual framework showing the influence of digital teamwork management on sports programme effectiveness under administrative management and moderating constraints.

Teamwork in Digital Age Questionnaire (MTDAQ). The instrument used a 4-point modified Likert scale format:

Strongly agree (SA) = 4

Agree (A) = 3

Disagree (D) = 2

Strongly disagree (SD) = 1

Validity and Reliability

Content and face validity were established by submitting the questionnaire draft to three experts in Educational Management and Measurement/Evaluation at the University of Port Harcourt. Internal consistency was calculated using Cronbach's alpha, yielding a reliable coefficient metric of $\alpha = 0.84$.

Administration

The researchers utilized direct hand-delivery alongside trained research assistants to administer the questionnaires across the selected school zones, achieving a 96% instrument recovery rate [6].

DATA ANALYSIS

The primary data collected from respondents were processed using mean ($\bar{x}$) and standard deviation (SD) scores. A criterion mean threshold of 2.50 was established for decision-making; mean scores equal to or greater than 2.50 indicated agreement, while scores below 2.50 indicated disagreement. Hypotheses were tested using a two-tailed independent samples t-test calculated at a significance margin of $p < 0.05$.

Analysis of Research Question One

How does the utilization of digital communication platforms influence teamwork coordination within secondary school sports departments?

The pooled cluster mean value of 2.90 reveals that respondents agree digital tools strengthen inter-departmental collaboration and speed up coordination. However, structural challenges—such as individual data subscription costs—persistently disrupt smooth workflow continuity (Table 1).

Hypothesis Testing

There is no significant difference between the mean ratings of school principals and sports officers regarding the effectiveness of digital teamwork strategies on overall sports program outcomes.

Because the calculated $p\text{-value}$ (0.256) is greater than the formal significance level of 0.05, the null hypothesis (H_0) is retained. There is no statistically significant difference in perception between school principals and sports officers; both administrative groups agree that digital teamwork framework integration positively transforms athletic delivery structures (Table 2).

Table 1. Responses on the use of digital communication tools in sports administration.

Item statement	Mean ($\bar{x}$)	SD	Decision
Instant messaging groups allow faster updates regarding student-athlete training rosters.	3.12	0.78	Agree
Cloud-based sharing of event schedules minimizes scheduling conflicts between teams.	2.89	0.85	Agree
Lack of personal data subscriptions among personnel delays team response times.	2.94	0.81	Agree
Virtual meetings help external coaches align strategies quickly with school administrators	2.65	0.92	Agree
Pooled Cluster Mean	2.90	0.84	Agree

Table 2. Independent samples t-test of principals and sports officers on digital communication tools in sports administration.

Category	N	Mean ($\bar{x}$)	SD	df	t-value	p-value	Decision
Principals	138	2.88	0.79	409	1.14	0.256	Retain H_0
Sports Officers	273	2.77	0.83	—	—	—	—

Table 3. Utilization frequency and perceived impact of digital tools in sports administration.

Evaluated digital tool category	Utilization frequency	Mean ($\bar{x}$)	SD	Perceived impact level
Cloud storage and shared portals (e.g., Google Drive, OneDrive) for managing student-athlete eligibility data, medical records, and regional registration tracking	Moderate	2.76	0.81	High Impact
Shared digital calendars (e.g., Google Calendar, Outlook) for synchronizing inter-scholastic sports fixtures, training blocks, and referee schedules	Low	2.34	0.88	Low Impact
Mobile instant communication media (e.g., WhatsApp Business, Telegram Teams) for emergency updates, real-time coaching logs, and team task notifications	High	3.41	0.64	Very High Impact
Virtual meeting platforms (e.g., Zoom, Microsoft Teams) for hosting multi-stakeholder strategy sessions, inter-house sports briefings, and safety protocol discussions with parents	Low	2.21	0.95	Low Impact
Pooled sector mean and standard deviation	—	2.68	0.82	High Utilization Impact

Analysis of Research Question Two

To what extent do sports administrators utilize specific digital collaborative tools, and what is their perceived level of impact on institutional sport programme effectiveness?

Mean Rating on the Utilization and Impact of Digital Collaborative Tools on Sport Programme Effectiveness.

As presented in Table 3, the pooled sector mean stands at 2.68 with a standard deviation of 0.82. this confirms that digital collaborative tools possess a high overall impact when actively deployed. However, the data reveals a stark imbalance in actual usage pattern across public senior secondary schools in Rivers state (Table 3).

Mobile instant communication media (item7) scored the highest mean value (3.41, SD=0.64), indicating wide spread adoption and immediate structural value. Similarly cloud storage data repositories (item 5) crossed the institutional benchmark mean= (2.76, SD=0.81). Conversely, shared digital calendars (item 6) mean= (2.34) and virtual meeting platforms (item 8) mean= (2.21) dropped significantly below the 2.50 criterion threshold. This data suggests that while everyday apps are easily adopted by sports departments, more structured, system oriented administrative technologies remain underutilized [7].

The combined empirical findings from Table 1 and Table 3 provides a clear picture of how digital teamwork operates within the public educational sector of Rivers State. The high utilization and impact value for mobile instant messaging apps (mean =3.41) highlights a preference for flexible digital administrative frameworks. This occurs because mobile communication apps bypass the slow web of traditional data base network and have a lower learning curve for staff. This point aligns with research by Amie-Ogan and Chukwuka [6] (2024), who observed that mobile apps often become the default tool for administrative teamwork in environments with limited institutional technology

budgets. However, the low adoption rates for share digital calendars with (mean 2.34 and video conferencing platform with mean 2.21) point to a critical gap in administrative practice. While sports departments use chat groups to send quick text updates, they rarely use synchronized tools like Google calendar to schedule long term training blocks or manage facility rotations. This missing piece explains why scheduling and uneven facility usage continue to impact school sports programs, even when staff are actively communicating. This findings supports the work of Edenkwo [7] (2025), who noted that true institutional efficiency is lost when teams limit their technology use to basic text chatting rather than adopting structured data management platforms.

Furthermore, the data showed that staff feel forced to spend personal funds on mobile data to keep up with work demands (mean= 2.94). When civil servants must pay out of pocket to participate in digital team work, system usage becomes inconsistent and fragile. As Nwobodo [8] (2023) argued, digital team work cannot survive on personal data subscription alone; it requires deliberate institutional backings from administrative board. In short, the data demonstrates that while the human resource element is ready for digital team work, the lack of formal infrastructure limits their efforts [9]. Moving forward, the goal of Rivers State public schools is not simply to encourage more texting, but to transition sport personnel towards formal, structured tools like calendars and centralized student-athletes data base platforms [10].

CONCLUSION

Based on these empirical results, the study concludes that managing teamwork through digital channels is an effective approach for modernizing athletic programs. While digital tools improve task coordination and lower communication errors compared to traditional paperwork, their administrative value depends heavily on supportive institutional infrastructure. For public secondary schools in Rivers State to remain competitive and identify youth talent effectively, their leadership must move past traditional administrative models and address the infrastructure and literacy gaps currently slowing digital collaboration.

Recommendations

1. *Institutionalize dedicated digital channels:* The Rivers State Post Primary Schools Board (PPSB) should mandate and officially support centralized digital communication spaces for school sports departments to ensure task accountability and minimize information gaps.
2. *Targeted funding for internet support:* School management boards should allocate specific portions of internal revenues to cover basic data costs and internet access for physical education units during regional athletic tournaments.
3. *Structured professional training:* The Ministry of Education should roll out ongoing digital literacy workshops for sports officers and games masters to narrow tech proficiency gaps and improve collaborative data management skills.
4. *Upgrade infrastructure systems:* Government authorities should prioritize providing solar power alternatives and essential computing hardware to public school sports units, ensuring digital systems remain online even during regional power outages.

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