

Digitalised Communication and the Management of Teacher Professionalism in Public Secondary Schools in Chiakariga Sub-County, Tharaka- Nithi County, Kenya.

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ABSTRACT

Systematic management of teacher professionalism is essential for enhancing the quality and effectiveness of educational institutions. With advances in technology, secondary schools are increasingly adopting digital communication technologies to support teacher professionalism and improve educational management. The current study examined the extent of utilisation of digitalised communication in the management of teacher professionalism in public secondary schools in Chiakariga sub-county, Kenya. Guided by the Diffusion of Innovations Theory, the study adopted a descriptive survey design. The target population comprised 1,252 participants, including 10 principals, 51 Heads of Departments (HoDs), 95 teachers, and 1,096 students. A sample of 295 participants was selected using Krejcie and Morgan's (1970) sampling table and appropriate sampling techniques, including purposive, stratified, and simple random. Data were collected using questionnaires administered to teachers, HoDs, and students, and interview schedules for principals. The research instruments were validated by educational research experts from Tharaka University, while a pilot study established their reliability, yielding a Cronbach's alpha coefficient of 0.815. Quantitative data were analysed using descriptive statistics, whereas qualitative data were analysed thematically. The findings revealed that the utilisation of digital communication technologies in the management of teacher professionalism was moderately high. The technologies were found to enhance continuous professional development, strengthen teachers' ethical conduct, and improve instructional effectiveness. The study recommended increased investment in digital infrastructure, continuous professional development in digital competencies, and supportive institutional and national policies to enhance the effective utilisation of digitalised communication technologies in schools. The findings provide empirical evidence that can inform educational policy and practice by supporting school leaders and policymakers in strengthening teacher professional development and instructional management through the effective integration of digital communication technologies.

Keywords: Digitalised communication, teacher professionalism, public secondary schools, Chiakariga sub-county.

INTRODUCTION

Digitalised communication for management of teacher professionalism involves use of communication tools such as WhatsApp, Google Meet, Google Classroom, and Telegram as digitalisation components in managing various aspects of teacher professionalism. Bower et. al (2020) longitudinal multiple-case study of schools identified Google meet and Google classroom as the most common digital communication tools that were in use by schools transitioning to remote learning in Australia. Manca and Ranieri (2016) study found the tools to enhance communications and teaching effectiveness by supporting co-creation of instructional resource in Italy though there were pending limitations to be addressed. According to Barrot and Acomular (2022) survey, digitalised communication platforms facilitated flexible peer interaction and instructional innovation. Darling-Hammond and Cook-Harvey (2017) found the utilisation of digitalised communication in schools to enhance collaboration among teachers and students. Investigations conducted during the COVID-19 period where schools' calendars were disrupted by the epidemic found that digitalised communication sustained teacher

professionalism although Trust and Whalen (2020) noted that explicit training in digital pedagogy was very necessary for the effective utilisation of such tools in professional practice.

According to Olayemi and Adedoyin (2021), digitalised communication tools like WhatsApp and Telegram supported continuous professional development (CPD) by enabling collaborative lesson planning and peer learning particularly in areas where opportunities for continuous professional development were limited. Mnguni and Mahlangu (2021) found that google meet was mostly used for professional teacher development in South Africa and it enabled continuous engagements among staff. Owusu and Boakye (2020) survey found that WhatsApp and Telegram expanded access to instructional support and peer mentorship in Ghana. Nakimuli and Ssewanyana (2022), also noted that Google Classroom and WhatsApp promoted pedagogical confidence and collaboration; however, urban teachers benefited disproportionately due to better connectivity and device availability. According to Ambwene et al. (2024), digital communication platforms were increasingly incorporated into school-level literacy and professional development initiatives in Tanzania, but their integration into national teacher-management systems remained partial and uneven. The literature review from Africa indicated that the effective utilisation of digitalised communication tools held substantial potential for strengthening teacher professionalism, yet infrastructural barriers, policy gaps, and unequal access continued to limit their equitable and strategic use. Further research was still needed to examine how such tools could be embedded within coordinated national and institutional frameworks to sustain professional development across diverse contexts.

Although teachers' instructional effectiveness and professional development may be influenced by teaching experience (Otwate et. al. 2021), according to Stephen and Francisca (2021) digitalised communication played a significant role in enhancing classroom organisation, feedback, and teacher accountability amongst Kenyan secondary school teachers. Mwanja and Muasya (2021) study for instance found that WhatsApp was used to support collaborative lesson planning and sharing of instructional content amongst secondary school teachers in Nairobi County, Kenya; an urban setup. Kihara and Wambua (2022), study based on interviews and questionnaires with teachers across Nairobi and Kajiado counties, showed that WhatsApp and similar platforms supported virtual mentorship, peer consultations, and online seminars. However, rural schools rarely utilised such tools due to unstable internet connectivity and limited digital literacy. A survey by Kioko and Ndung'u (2022) in Machakos found that WhatsApp was the preferred tool for official communication, resource exchange, and continuous professional development coordination. The platform enhanced timeliness and transparency in professional tasks, yet more advanced applications such as Google Classroom and Google Meet were rarely used because of inconsistent institutional support and frequent network interruptions. The authors recommended for targeted digital training and stable internet provision to broaden the uptake of such platforms. These studies suggested a widening digital divide between urban and rural areas, indicating a research gap concerning how infrastructural inequalities shaped teachers' access to digitalised communication in low-resource settings. Therefore, although digital communication had expanded access to Continuous Professional Development in urban Kenya, infrastructural inequalities continued to limit its equitable utilisation across counties.

In Tharaka-Nithi County, teachers participated in professional development initiatives coordinated by the Teachers Service Commission and the Ministry of Education (County Directorate of Education, 2022). However, Njagi (2023) found that schools in the county continued to experience varying levels of access to digital technologies, internet connectivity, and institutional support for professional learning. Such variations were likely to affect teachers' professional growth, adherence to professional standards, and effectiveness in classroom instruction. Njeru and Mugambi (2023) noted that WhatsApp continued to dominate professional communication, supporting administrative coordination, lesson scheduling, and informal exchange of teaching materials. While those practices improved communication efficiency, the review of literature found minimal evidence of structured utilisation of platforms such as Google Classroom for professional training or formal continuous professional development tracking. Most schools relied exclusively on smartphones. The authors (Njeru and Mugambi, 2023) recommended for provision of low-cost data packages and capacity-building initiatives to help teachers fully utilise the pedagogical potential of mobile communication applications. However, few or no literature examined then extent of utilisation of such tools in managing professional conduct, participation in continuous professional development, or instructional quality, leaving an important empirical

gap in understanding the real extent of utilisation of digitalised communication in teacher professionalism management within the county.

No published studies had investigated on whether digital communication tools were utilised in the management of teacher professionalism in Chiakariga. Informal administrative reports suggested on the use of WhatsApp by principals and teachers to organise timetables, track lesson coverage, and disseminate professional updates. Yet, no formal assessment on the extent of utilisation of digitalised communication in managing ethical conduct, instructional quality, or sustaining engagement in continuous professional development. Although tools such as Telegram, Google Meet, and Google Classroom were used in some schools, their real extent of utilisation in supporting teacher professionalism remained undocumented. The lack of empirical evidence positioned Chiakariga as a critical research site where the extent of utilisation of digitalised communication on management of teacher professionalism needed to be systematically examined.

Statement of the Problem

Effective management of teacher professionalism, whose aspects include continuous development, professional conduct, and instructional effectiveness is so vital in achievement of quality education. Digitalised communication technologies have been integrated in management of many schools in Kenya. The tools have dynamic potential to restructure the management of teacher professionalism by enhancing communication and collaboration, professional conduct and instructional effectiveness. However, their application in many learning institutions in Chiakariga sub-county remained insufficiently aligned with the professional goals. Public secondary schools were adopting such technologies but challenges such as limited strategic implementation, inadequate training, and underutilisation persisted. Previous studies focused on digital access and availability with no literature whatsoever found to examine digitalised communication and management of teacher professionalism in Chiakariga sub-county. Therefore, the current study sought to investigate the extent of utilisation of digitalised communication in the management of teacher professionalism in secondary schools in Chiakariga sub-county, with aim of providing empirical information that may enable educational stakeholders to adopt and embrace digitalised communication technology more effectively on their management strategies.

Objective of the Study

To determine the extent of utilisation of digitalised communication in the management of teacher professionalism in public secondary schools in Chiakariga sub-county, Kenya.

Research question

What is the extent of utilisation of digitalised communication in the management of teacher professionalism in public secondary schools in Chiakariga sub-county?

Significance of the Study

The findings of the study are expected to be of much benefit to various educational stakeholders. The ministry of education is expected to obtain empirical evidence that may guide its policy formulation and implementation on mechanisms for utilising digitalised communication in the management of teacher professionalism in secondary schools in Kenya. The Board of Managements are expected to gain insights geared towards advancing the strategies and methodologies of enabling their schools to manage teacher professionalism digitally. The research findings also offer the school principals an opportunity to internalize the digital dynamics of managing teacher professionalism enabling them to adopt and embrace the use of digital technology more effectively in their management strategies. Researchers and other scholars benefit by obtaining empirical evidence on the extent of utilisation of digitalised communication in management of teacher professionalism, thereby obtaining a relevant literature on digitalisation in management of teacher professionalism and having basis for further studies in other educational contexts. Educational partners may use the empirical evidence from the findings to identify gaps in management of teacher professionalism in secondary schools and design interventions for improving teacher continuous professional development, professional ethics and instructional effectiveness.

METHODOLOGY

Location of the Study

The study was carried out in Chiakariga sub-county in Tharaka-Nithi county, Kenya. The sub-county is approximately 205 kilometres away from Nairobi. Most of its secondary schools were well accessible through feeder roads linked to the main tarmac, Mati Road (C92), which cut across the sub-county from south to north towards Meru. Chiakariga sub-county is one of the ten sub-counties of Tharaka-Nithi County. The sub-county had four boarding secondary schools, out of which two were private schools, and eight were mixed public day secondary schools.

Research Design

The study adopted descriptive survey research design; a quantitative and a non-experimental approach that systematically gathered information to describe existing conditions and explored associations between variables within the sampled population without manipulating the research environment (Fraenkel, Wallen and Hyun, 2019). The researcher gathered and evaluated the primary data collected from the field without altering the connections between the study variables making the design acceptable and most appropriate for the study. Descriptive survey research design was particularly suitable for the researcher to determine the extent of utilisation of digitalised communication in real life conditions in learning institutions in Chiakariga sub-county.

Target Population

The study targeted a population of 1252 individuals comprised of 10 principals, 51 Heads of Departments (HoDs), 95 teachers and 1096 students.

Sample Size and Sampling Procedures

A sample size of 295 participant was determined using Krejcie and Morgan's (1970) sampling table. The schools were stratified into two categories: Public boarding secondary schools and public day secondary schools. The two public boarding secondary schools were purposively included in the study due to their smaller number and unique characteristics. One public day secondary school was selected from eight schools using simple random sampling technique. School principals of the sampled schools were purposively selected to participate in the study. Sample sizes of Head of Departments, teachers, and students were determined using simple random sampling technique. The sample consisted of 3 principals, 12 HoDs, 22 teachers and 258 students.

Research instruments:

The researcher used self-administered structured questionnaires for HODs, teachers, and students and interview guide for principals. The questionnaires for each category of respondents were organised into thematic sections as per the study objectives. The sections relevant to this paper (digitalised communication and management of teacher professionalism), each comprised of eight close-ended (five-point Likert-scale) items under options: Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D), and Strongly Disagree (SD). The interview schedule guide for principals had introductory statements and open-ended questions grouped thematically as per the study objectives. The section relevant to this paper contained five questions

Piloting, Validity and Reliability of Research Instruments

Before conducting the main study, a pilot study was undertaken in a secondary school from Tharaka South sub-county. The area was purposefully selected due to its comparable geographical and contextual characteristics with Chiakariga sub-county; the primary study location. The pilot study comprised of 30 participants made of 1 principal, 2 HoDs, 2 teachers and 25 students. The sample was approximately 10% of the anticipated overall sample, consistent with Mugenda and Mugenda (2013) recommendations for piloting of research instruments. The research instruments were validated by educational research experts from Tharaka University. Analysis of

data from the pilot study was used to establish internal consistency reliability using Cronbach's alpha. Items falling below the acceptable threshold were revised. The final test for reliability yielded a Cronbach's alpha coefficient of 0.815 that was above the acceptable co-efficient of 0.7.

Data Collection Procedure

Prior to data collection, ethical and regulatory clearance was obtained from Tharaka University Institutional Scientific and Ethics Review Committee. The researcher then sought for approval permit from the National Commission for Science, Technology and Innovation (NACOSTI) and authorization from Chiakariga sub-county director of education and the principals of all the schools identified for the research undertaking. Respondents were briefed on the purpose, objectives and significance of the study. A written informed consent was obtained. In a school visit, the school principal was interviewed; questionnaires were then administered to sampled HODs, teachers and students respectively, with the guidance of the researcher. Upon every completion, the questionnaires were collected immediately, and systematically filed while preserving respondents' anonymity.

Data Analysis

The collected data was cleaned, organized, summarized, classified, and coded by the researcher. The coded data was then be entered into the Statistical Package for the Social Sciences (SPSS) version 30 for analysis. Descriptive statistics, including frequencies, percentages, means and standard deviations were used to summarize and present the quantitative data to illustrate patterns and trends on the extent of utilisation of digitalised communication in the management of teacher professionalism. Qualitative data was analysed thematically and presented in narrative summaries highlighting key insights related to the research objectives. The findings from both quantitative and qualitative analyses were integrated to provide a comprehensive understanding on the extent of utilisation of digitalised communication in the management of teacher professionalism in public secondary schools in Chiakariga sub-county, Tharaka-Nithi county, Kenya.

Ethical Consideration

The researcher briefed the respondents on the purpose, objectives and significance of the study. A written informed consent was obtained by allowing the respondent fill a consent form. No participant was forced to take part in the study. The participants were free to choose whether to answer a question or not at any time or refuse to provide information that they did not wish to. Participants were not writing their names or any information that could reveal their identities. Participants' responses were kept private and confidential.

RESULTS AND DISCUSSIONS

Response rate

The study respondents were public secondary school students, teachers, heads of department and principals in Chiakariga sub-county. The total respondents who duly gave responses were 286.

Table 1. Response Rate

Description	Sample size	Actual number of respondents who responded	%
Public secondary school students	255	253	99.2
Public secondary school teachers	25	21	84.0
Heads of Department	12	9	75.0
Public secondary principals	3	3	100.0
Total	295	286	96.9

The researcher had sample size of 295 respondents including 255 public secondary school students, 25 public secondary school teachers, 12 heads of departments and 3 public secondary school principals. Out of 295

sampled populations, 286 respondents successfully participated in the study. All public secondary school principals sampled were dully interviewed. The overall response rate was 96.9%, which was a good representative of total population.

Demographic Information of the Respondents

The researcher established general information of all respondents in the study. The data collected was based on gender distribution and work experience.

Gender Distribution of Respondents

The researcher determined gender distribution of the respondents. The data collected was presented in Table 2.

Table 2. Gender Distribution of Respondents

Respondents	Male		Female		Total	
	F	%	F	%	n	%
Public secondary school students	117	46.2	136	53.8	253	100
Public secondary school students	9	42.9	12	57.1	21	100
Public secondary school students	6	66.7	3	33.3	9	100
Public secondary school principals	2	66.7	1	33.1	3	100
Total	134	46.9	152	53.1	286	100.0

As indicated in table 2, the researcher established that a majority of the respondents 53.1% were females. Public secondary school students were males 46.2% and the majority were females at 53.8%. The study also established that majority of public secondary teachers (57.1%) were females while 42.9% were males. Majority (66.7%) of the heads of department were males while 33.3% were females. Majority of public secondary school principals (66.7%) were males.

Teaching Experience of Public Secondary School Principals, HoDs and Teachers in Chiakariga sub-county

The researcher sought to establish work experience of school principals, heads of department and teachers in Chiakariga sub-county. The summary of the findings was shown in Table 3.

Table 3. Teaching Experience of Public Secondary School Principals HoDs and Teachers in Chiakariga Subcounty

	Secondary school teachers		HoDs		Principals	
	F	%	f	%	F	%
1-5years	2	9.5	--	--	--	--
6-15 years	11	52.4	1	11.1	--	--
16-25 years	8	38.1	6	66.7	2	66.7
Above 25 years	--	--	2	22.2	1	33.3
Total	21	100.0	9	100.0	3	100.0

From table 3, the researcher established that 52.4% secondary school teachers had teaching experience between 6-15 years while 38.1% of the teachers had teaching experience between 16-25 years. Only 9.5% of the teachers had a teaching experience of 5 or less years. In case secondary school Heads of Departments 11.1% had teaching experience between 6-15 years. Majority at 66.7% had experience between 16-25 years while 22.2% of HoDs

had experience above 25 years of service. Majority of Principals 66.7% had a teaching experience of between 16 - 25 years. 33.3% of Principals had a teaching experience above of 25 years. The idea of work experience was in line Otware et. al. (2021) study on influence of teachers' subject competence in enhancing pupils' literacy skills in Busia County, Kenya that indicated teaching experience to significantly influence teachers' instructional effectiveness and professional competency. More experienced teachers were likely to assume into leadership positions with principals likely to have served for more years in the profession.

Digitalised Communication and the Management of Teacher Professionalism

Students' responses on digitalised communication and management were presented in table 4.

Table 4. Students' Responses on Digitalised Communication in the Management of Teacher Professionalism in Secondary Schools in Chiakariga Subcounty

Statements	N	SA F (%)	A F (%)	U F (%)	D F (%)	SD F (%)	Mean	Std Dev	Interpretation
My teachers manage learning activities through digitalised communication tools effectively.	253	45(17.8)	34(13.4)	86 (34.0)	67(26.5)	21(8.3)	3.06	1.202	Agree
My teachers use digitalised communication tools to effectively manage their collaborations with parents on school operations and students' academic progress.	253	5(2.0)	8(3.2)	51(20.2)	86(34.0)	103(40.7)	1.92	0.954	Disagree
My teachers use digital communication tools to develop teacher-student and teacher-parent engagements.	253	38(15.0)	41(16.2)	82(32.4)	62(24.5)	30(11.9)	2.98	1.220	Undecided
My teachers effectively manage instructional content due to use of digital communication tools.	253	94(37.2)	73(28.9)	39(15.4)	28(11.6)	19(7.5)	3.77	1.264	Agree
My teachers use of digitalised communication tools to manage student discipline through parental involvement.	253	37(14.6)	86(34.0)	52(20.6)	32(12.6)	46(18.2)	3.14	1.329	Undecided
My teachers use digital communication tools to manage downloaded, printed or projected learning resources.	253	66(26.1)	19(7.5)	92(36.4)	55(21.7)	21(8.3)	3.21	1.276	Undecided
My teachers administer holiday or other assignment to students through digitalised communication tools.	253	95 (37.5)	79 (31.2)	43 17.0)	17 (6.7)	19 (7.5)	3.85	1.213	Agree
Use of digitalised communication tools by teachers in managing students learning improves my digital skills.	253	57 (22.5)	83 (32.8)	54 (21.3)	16 (6.3)	43 (17.0)	3.38	1.356	Undecided

The findings presented in Table 4 indicate that digitalised communication was moderately utilised in the management of teacher professionalism in secondary schools in Chiakariga sub-county. Students agreed that teachers effectively managed instructional content through digitalised communication tools ($M = 3.77$, $SD = 1.26$), administered holiday assignments through digital platforms ($M = 3.85$, $SD = 1.21$), and managed learning activities using digital communication tools ($M = 3.06$, $SD = 1.20$). Although the relatively high standard deviations indicated some variation in students' perceptions, the overall findings demonstrated that teachers had embraced digital communication primarily to support instructional delivery and continuity of learning. The

finding that teachers effectively managed instructional content using digital communication tools was consistent with Bower et al. (2020), who found that Google Classroom and Google Meet were widely utilised to facilitate teaching and learning activities during the transition to remote learning in schools in Australia. Similarly, Manca and Ranieri (2016) established that digital communication platforms enhanced teaching effectiveness by supporting collaborative development and sharing of instructional resources, while Barrot and Acomular (2022) reported that such platforms promoted instructional innovation and flexible learner engagement. The agreement between the present study and previous studies suggested that digitalised communication had become an important tool for strengthening teachers' instructional competence.

Students, however, disagreed that teachers effectively used digital communication tools to collaborate with parents regarding school operations and students' academic progress ($M = 1.92$, $SD = 0.95$). The relatively low standard deviation indicates that students generally shared similar opinions on this issue. This finding contrasts with Kioko and Ndung'u (2022), who found that WhatsApp enhanced official communication, coordination of professional activities and timely dissemination of information among teachers and other stakeholders in Machakos County. The discrepancy may imply that although teachers in Chiakariga sub-county used digital communication internally, they had not fully utilised these platforms to strengthen collaboration with parents and other education stakeholders. Students were also undecided on whether teachers used digital communication tools to enhance teacher-student and teacher-parent engagement ($M = 2.98$, $SD = 1.22$), manage student discipline through parental involvement ($M = 3.14$, $SD = 1.33$), manage downloaded or projected learning resources ($M = 3.21$, $SD = 1.28$), and improve students' digital skills ($M = 3.38$, $SD = 1.36$). The relatively large standard deviations suggest diverse experiences among students, indicating that the utilisation of digital communication in such management activities varied across schools or teachers. These findings correspond with Ambwene et al. (2024), who observed that although digital communication platforms were increasingly adopted in schools, their integration into teacher management systems remained partial and uneven. Similarly, Njagi (2023) reported that schools in Tharaka-Nithi County experienced varying levels of access to digital technologies, internet connectivity and institutional support for professional learning. These infrastructural and institutional limitations may explain why students expressed mixed opinions regarding the broader application of digital communication in managing teacher professionalism.

The researcher sought to investigate the extent of utilisation of digitalised communication in management of teacher professionalism in Chiakariga sub-county from public secondary school teachers. The responses received were analysed and presented in table 5. The responses were rated as: Strongly agree (SA), Agree (A), Undecided (U), Disagree (D), and strongly disagree (SD).

Table 5. Public Secondary School Teachers' Responses on Digitalised Communication in the Management of Teacher Professionalism in Public Secondary schools in Chiakariga Subcounty

		SA	A	U	D	SD			
Statements	N	F (%)	F (%)	F (%)	F (%)	F (%)	Mean	Std Dev	Interpretation
Digital communication tools develop my awareness and adherence to TSC code of conduct and ethics.	21	3 (14.3)	7 (33.3)	5 (23.8)	2 (9.5)	4 (19.0)	3.14	1.352	Undecided
I use digitalise communication tools to allocate and manage students' academic tasks and assignments.	21	9 (42.9)	5 (23.8)	1 (4.8)	4 (19.0)	2 (9.5)	3.71	1.454	Agree
Digital communication platforms enhance coordination and collaboration among teachers in the management of instructional activities.	21	3 (14.3)	4 (19.0)	8 (38.1)	2 (9.5)	4 (19.0)	3.00	1.304	Undecided

I use digital communication tools to facilitate effective delivery and management of instructional content.	21	2 (9.5)	6 (28.6)	6 (28.6)	4 (19.0)	3 (14.3)	3.00	1.225	Undecided
I use digitalised communication tools to manage stakeholders' relationships and engagements in my school.	21	3(14.3)	4(19.0)	9(42.9)	4(19.0)	1(4.8)	3.19	1.078	Undecided
I utilise digitalised communication tools to facilitate awareness and management of students' safety and wellbeing issues.	21	5 (23.8)	6 (28.6)	6 (28.6)	2 (9.5)	2 (9.5)	3.48	1.250	Agree
I use digital communication tools to enhance the development of my professional knowledge and competency.	21	3 (14.3)	8 (38.1)	5 (23.8)	2 (9.5)	3 (14.3)	3.29	1.271	Undecided
I use digital communication tools to manage the storage and retrieval of professional documents.	21	2(9.5)	5(23.8)	4(19.0)	7(33.3)	3(14.3)	2.81	1.250	Undecided

The findings in Table 5 indicate that the utilisation of digitalised communication in the management of teacher professionalism in secondary schools in Chiakariga from teachers' perspective was moderately high. The standard deviations ranged from 1.08 to 1.45, indicating moderate variation in teachers' responses. This suggests that although teachers generally shared similar perceptions regarding the utilisation of digitalised communication, differences existed in the extent to which the tools were applied by individual teachers and across schools. Teachers agreed that they utilised digitalised communication tools to allocate and manage students' academic tasks and assignments ($M = 3.71$, $SD = 1.45$) and to facilitate awareness and management of students' safety and wellbeing issues ($M = 3.48$, $SD = 1.25$). These findings suggest that teachers primarily employed digital communication to support instructional coordination and student welfare. The findings are consistent with Mnguni and Mahlangu (2021), who reported that Google Meet promoted continuous professional engagement among teachers by facilitating communication and collaboration in South African schools. They also agree with Kioko and Ndung'u (2022), who found that WhatsApp was widely utilised in Kenyan schools for official communication, coordination of professional activities, and sharing of instructional information because of its accessibility and ease of use.

However, teachers were undecided on whether digitalised communication enhanced adherence to the TSC Code of Conduct and Ethics ($M = 3.14$, $SD = 1.35$), strengthened collaboration in instructional management ($M = 3.00$, $SD = 1.30$), facilitated instructional content delivery ($M = 3.00$, $SD = 1.22$), improved stakeholder engagement ($M = 3.19$, $SD = 1.08$), enhanced professional knowledge and competency ($M = 3.29$, $SD = 1.27$), or supported storage and retrieval of professional documents ($M = 2.81$, $SD = 1.25$). These findings imply that although teachers were familiar with digital communication platforms, their utilisation for broader dimensions of teacher professionalism remained limited. The findings concur with Trust and Whalen (2020), who observed that effective utilisation of digital communication technologies depended on adequate teacher preparation and digital pedagogical skills. They also support Njagi (2023), who reported that schools in Tharaka-Nithi County experienced disparities in access to digital infrastructure and institutional support, limiting teachers' professional development opportunities. Similarly, Njeru and Mugambi (2023) had found that although WhatsApp dominated professional communication in the county, digital platforms were rarely utilised for structured professional development and continuous professional development tracking. The findings therefore suggest that digitalised communication in Chiakariga sub-county was utilised mainly for routine communication and instructional coordination rather than for comprehensive management of teacher professionalism.

The researcher gave the descriptions of heads of department' responses on the extent of utilisation of digitalised communication tools in management of teacher professionalism in public secondary school in Chiakariga sub-county. The responses were reflected in table 6.

Table 6. Heads of Department Responses on Digitalised Communication and the Management of Teacher Professionalism in Public Secondary Schools in Chiakariga sub-county

Statements	N	SA F (%)	A F (%)	U F (%)	D F (%)	SD F (%)	Mean	Std Dev	Interpretation
I administer departmental briefs and notices to teachers through digital communication tools to enhance their professionalism.	9	4(44.4)	2(22.2)	1(11.1)	1(11.1)	1(11.1)	3.78	1.481	Agree
Teachers in my department administer assignments and learning tasks to students during holidays using digital communication tools.	9	3(33.3)	2(22.2)	1(11.1)	1(11.1)	2(22.2)	3.33	1.658	Undecided
Teachers in my department collaborate professionally with colleagues using digital communication tools.	9	1 (11.1)	2 (22.2)	1 (11.1)	3 (33.3)	2 (22.2)	2.67	1.414	Undecided
Teachers in my department maintain professional ethics when using departmental digital communication forums	9	3(33.3)	2(22.2)	1(11.1)	2(22.2)	1(11.1)	3.44	1.509	Agree
Teachers in my department use digital communication tools to manage teaching and learning activities during times of crises.	9	1(11.1)	1(11.1)	4(44.4)	2(22.2)	1(11.1)	2.89	1.167	Undecided
My department uses digital communication tools to manage effective and timely coverage of syllabuses by teachers.	9	2(22.2)	1(11.1)	2(22.2)	3(33.3)	1(11.1)	3.00	1.414	Undecided
Teachers in my department use digitalised communication tools to manage departmental assignments.	9	3(33.3)	2(22.2)	2(22.2)	1(11.1)	1(11.1)	3.56	1.424	Agree
Teachers in my department use digital communication tools to manage Continuous Professional Development (CPD) assignments.	9	1(11.1)	2(22.2)	3(33.3)	1(11.1)	2(22.2)	2.89	1.364	Undecided

The findings from Table 6 indicate that Heads of Department moderately acknowledged the utilisation of digitalised communication in managing teacher professionalism. HoDs agreed that digital communication tools were used to administer departmental briefs and notices ($M = 3.78$, $SD = 1.481$), manage departmental assignments ($M = 3.56$, $SD = 1.424$), and promote professional ethics in departmental communication forums ($M = 3.44$, $SD = 1.509$). These findings suggested that digital communication has become an important administrative tool for coordinating departmental activities and reinforcing professional conduct among teachers. However, the relatively high standard deviations indicate considerable variation in practices across schools, implying that while some departments had integrated digital communication into routine management, others had adopted it only to a limited extent. The finding that Heads of Department used digital communication to disseminate departmental information was consistent with Kioko and Ndung'u (2022), who reported that WhatsApp enhanced timely official communication, coordination of professional duties, and sharing of instructional resources among teachers in Kenyan secondary schools. The study further established that Heads of Department agreed that teachers maintained professional ethics while using departmental digital communication forums. This finding supported Stephen and Francisca (2021), who observed that digital communication strengthened teacher accountability, professional interactions, and adherence to expected professional standards through improved communication and feedback mechanisms. The finding suggests that digital platforms can support not only information sharing but also responsible professional behaviour when appropriately managed.

Conversely, the Heads of Department were undecided regarding teachers' professional collaboration through digital communication ($M = 2.67$), management of teaching during crises ($M = 2.89$), syllabus coverage ($M = 3.00$), holiday learning activities ($M = 3.33$), and management of Continuous Professional Development assignments ($M = 2.89$). These findings indicate that although digital communication is increasingly utilised for administrative coordination, its application to broader instructional management and structured professional development remains inconsistent across schools. The limited utilisation of digital communication for Continuous Professional Development aligns with Ambwene et al. (2024), who found that although digital communication platforms were increasingly incorporated into school-level professional development initiatives in Tanzania, their integration into formal teacher management systems remained uneven. Similarly, Njagi (2023) reported that schools in Tharaka-Nithi County experienced differing levels of digital infrastructure, internet connectivity, and institutional support, factors that constrained consistent use of digital technologies for professional learning and management. Such contextual challenges may explain why Heads of Department expressed uncertainty regarding the use of digital communication for CPD management and instructional coordination.

The findings from the Heads of Department's perspective, demonstrated that digitalised communication was more established in facilitating departmental administration and promoting professional ethics than in supporting collaborative professional learning, crisis management, continuous professional development, and systematic monitoring of instructional activities. The variability reflected in the standard deviations further suggests unequal implementation of digital communication practices among public secondary schools in Chiakariga sub-county, highlighting the need for greater institutional support, improved digital infrastructure, and structured policies to promote consistent utilisation of digital communication in managing teacher professionalism.

The researcher established descriptive data from the principals on the use of digitalised communication in management of teacher professionalism in public secondary schools in Chiakariga sub-county. The responses were described in excerpt 1.

Excerpt 1. Principals' Interview Findings on Digitalised Communication and the Management of Teacher Professionalism

The interview findings were analysed thematically. Five themes emerged from the principals' responses: improved communication efficiency, use of digital communication tools in school management, enhancement of teachers' professional development and professional ethics, improvement of instructional competency, and challenges affecting the implementation of digital communication systems.

Improved Communication Efficiency

The principals unanimously acknowledged that digital communication platforms had transformed communication within their schools by facilitating dissemination of information, improving communication efficiency and strengthening collaboration between school management and teachers. However, one principal observed that the increased use of digital communication also created pressure for teachers to respond to work-related messages beyond official working hours.

Principal 1 explained:

"The introduction of digital communication platforms has made communication faster. It can also create work pressure when teachers are expected to respond outside working hours."

Similarly, Principal 3 noted:

"Digital communication platforms have significantly improved communication by enhancing information sharing between staff and management."

The findings indicate that digital communication platforms have enhanced administrative efficiency and timely information sharing while introducing new challenges associated with work-life balance. The findings

corroborate those of Manca and Ranieri (2016), who found that social media platforms enhanced communication efficiency in educational institutions but also created challenges relating to professional boundaries and workload.

Use of Digital Communication Tools in School Management

The principals identified several digital communication tools used in school management, including Google Meet, Zoom and official email platforms. These technologies were mainly utilised for staff meetings, workshops and official communication.

Principal 2 stated:

"Some of the digital tools used in my management include Google Meet for staff meetings, Zoom for workshops and official emails."

The findings indicated that school administrators had embraced multiple digital communication platforms to enhance administrative coordination and collaboration. The findings were consistent with Bower et al. (2020), who reported that platforms such as Google Meet and Google Classroom became widely adopted for communication and collaboration within schools transitioning to digital learning environments.

Enhancement of Teachers' Professional Development and Professional Ethics

The principals perceived digital communication platforms as important tools for promoting teachers' continuous professional development through online training, workshops and professional collaboration. They further indicated that digitalised communication platforms enhanced access to professional resources while reinforcing adherence to professional ethics.

Principal 1 observed:

"Digital communication tools lead to improved CPD opportunities through online training."

Principal 3 further remarked:

"Digital communication tools lead to increased access to online resources and adherence to professional ethics."

These findings demonstrated that digital communication contributed to the management of teacher professionalism by expanding opportunities for continuous learning and strengthening professional collaboration. Similar findings were reported by Olayemi and Adedoyin (2021), who found that WhatsApp facilitated teachers' continuous professional development through peer learning and online professional support.

Improvement of Teachers' Instructional Competency

The principals indicated that digital communication tools had enhanced teachers' instructional competency by facilitating access to digital teaching resources, collaborative lesson planning and technology-supported instruction. Nevertheless, one principal acknowledged that some teachers continued to experience challenges due to inadequate digital skills.

Principal 1 explained:

"Digital communication influences teachers' instructional competency through technology, where some teachers benefit significantly while others struggle because of limited digital skills."

Principal 3 added:

"Teachers collaborate on lesson planning. There is also improved teaching due to increased digital access."

The findings indicated that digital communication enhanced instructional effectiveness by promoting collaboration and improving access to instructional resources. However, the benefits depended on teachers' digital competence and institutional support. This finding supports Barrot and Accumular (2022), who established that teachers' digital competence and institutional support were key determinants of effective digital communication in instructional delivery.

Challenges Affecting the Implementation of Digital Communication Systems

Despite recognising the benefits of digital communication, the principals identified several challenges affecting its implementation. They included cybersecurity risks, inadequate school-provided digital devices, inconsistent utilisation of digital platforms, poor internet connectivity and information overload resulting from the use of multiple communication platforms.

Principal 1 stated:

"Some of the challenges encountered include cybersecurity risks, limited school-provided devices and inconsistent use of digital platforms."

Principal 3 further observed:

"There is poor internet connectivity in some areas. There is also information overload from multiple platforms."

Across the findings it was noted that although digital communication was utilised to strengthen the management of teacher professionalism, infrastructural and technological constraints continued to limit its effectiveness. There was need to address such challenges so as to enhance the effectiveness of digital communication in supporting the teacher professionalism within public secondary schools. The quantitative and qualitative findings collectively indicated that digitalised communication was utilised to a high extent in the management of teacher professionalism in public secondary schools in Chiakariga sub-county. Nevertheless, the extent of utilisation varied across different dimensions of teacher professionalism and among the respondent categories. The questionnaire findings from students, teachers and Heads of Departments (HoDs) consistently showed that digital communication was more extensively utilised in routine professional activities such as dissemination of academic information, teacher–student communication, instructional support and administrative coordination. However, comparatively lower levels of utilisation were reported in areas such as continuous professional development, teacher collaboration, stakeholder engagement, management of professional records and communication during emergencies.

The qualitative findings from the principals provided practical explanations for the observed variations. The principals confirmed that digital communication platforms, particularly WhatsApp, Google Meet, Zoom and official email, are routinely utilised to coordinate school activities, disseminate information, conduct staff meetings, facilitate professional collaboration and support online professional learning. The findings reinforce the high levels of utilisation reported by teachers and HoDs, who are directly involved in school administration and professional coordination and therefore interact more frequently with these digital platforms. The interview findings also helped to explain why students generally reported comparatively lower levels of utilisation than teachers and HoDs on some questionnaire items. Principals indicated that many digital communication platforms were primarily intended for communication among school administrators and teachers rather than students. Furthermore, school policies regulating students' access to smartphones and other digital devices limited students' direct participation in some digital communication processes. Consequently, students were likely to have fewer opportunities to observe or experience the full range of professional activities supported by digital communication, resulting in relatively lower perceptions of its utilisation.

The principals further identified contextual challenges that explained the lower utilisation recorded on some questionnaire items. The challenges included inadequate digital devices, unreliable internet connectivity, cybersecurity risks, inconsistent use of digital platforms and information overload. Such constraints limited the consistent application of digital communication in professional activities requiring sustained collaboration,

continuous professional development and comprehensive digital record management. The qualitative insights therefore complemented the quantitative findings by demonstrating that variations in the extent of utilisation were influenced not only by the nature of professional activities but also by differences in technological infrastructure, institutional support and users' digital competencies across schools.

CONCLUSION

The study objective sought to determine the extent of utilisation of digitalised communication in the management of teacher professionalism in public secondary schools in Chiakariga sub-county. The study established that digital communication platforms enhanced coordination and collaboration among teachers in the management of instructional content. Majority of respondents had agreed that teachers used digital communication tools in managing students learning which improved students' digital skills. Digitalised communication tools also connected teachers and students even outside the classroom settings because teachers used the tools to administer holiday and other assignments to students. The researcher therefore concluded that the extent of utilisation of digitalised communication in the management of teacher professionalism in public secondary schools in Chiakariga sub-county was moderately high. Schools that demonstrated higher levels of utilisation reported better coordination of professional development activities, improved communication between teachers and administrators, enhanced adherence to professional conduct and more effective instructional support.

RECOMMENDATIONS

The study made the following recommendations:

1. The Government of Kenya, through the Ministry of Education, in collaboration with the Teachers Service Commission (TSC), county governments, development partners, and other relevant stakeholders, should prioritise the provision of adequate, reliable, and sustainable digital infrastructure in all public secondary schools. This should include reliable internet connectivity, computers and other digital devices, stable electricity supply, digital communication platforms, and continuous technical support and maintenance services. The Government should further establish dedicated funding mechanisms for the acquisition, upgrading, and maintenance of digital infrastructure to ensure equitable access across schools. Such investments will create an enabling environment for the effective utilisation of digital communication technologies in the management of teacher professionalism and ultimately improve the quality of teaching and learning.
2. Teachers should actively participate in digitally enabled professional learning communities, webinars, online workshops, virtual conferences, and collaborative digital platforms as part of their continuous professional development. Such engagement should focus on strengthening pedagogical knowledge, technological competencies, instructional innovation, digital communication skills, and collaborative professional practices. School principals and Heads of Departments should facilitate and support teachers' participation by allocating time for professional learning, encouraging collaborative knowledge sharing, and providing access to relevant digital resources and training opportunities.
3. Teachers should establish and effectively utilise appropriate digital communication channels to facilitate continuous engagement with students and parents beyond the classroom environment. These platforms should be used to disseminate learning materials, assignments, instructional feedback, academic progress reports, and other relevant educational information in a timely and professional manner. In implementing these communication channels, teachers should adhere to institutional policies, professional ethical standards, data protection regulations, and child safeguarding guidelines to ensure secure, responsible, and effective digital interactions.
4. School principals and Heads of Departments should institutionalise the use of digital communication tools such as WhatsApp, Telegram, Google Classroom, Microsoft Teams, and other approved educational technologies to strengthen instructional leadership and school management. These platforms should facilitate professional collaboration, coordination of departmental activities, instructional supervision, mentoring,

dissemination of administrative information, monitoring of curriculum implementation, and timely communication among teachers. Schools should also develop clear institutional guidelines governing the professional use of these digital platforms to ensure accountability, consistency, and effectiveness in communication.

5. The Teachers Service Commission (TSC) should institutionalise regular and structured in-service training programmes for teachers, Heads of Departments, deputy principals, and principals to strengthen their capacity to effectively utilise digital communication technologies in the management of teacher professionalism. These professional development programmes should cover digital communication competencies, educational technology integration, digital leadership, instructional supervision, online collaboration, cybersecurity, data privacy, digital ethics, and emerging digital innovations in education. The Commission should also establish mechanisms for periodic evaluation and certification of these training programmes to ensure sustained professional growth and effective application of acquired competencies in instructional management.
6. The Ministry of Education should review and harmonise the national policy governing students' smartphone use in public secondary schools by permitting their controlled and supervised use for legitimate educational purposes under clearly defined regulatory guidelines. The revised policy should provide a comprehensive framework for classroom integration, access to approved digital learning resources, digital communication between teachers and learners, online safety, cybersecurity, digital citizenship, and responsible technology use while incorporating safeguards against misuse, cyberbullying, academic dishonesty, excessive screen time, and unnecessary distractions. Such a policy would enhance instructional management, strengthen communication between teachers and learners, and promote the development of digital literacy, ethical online behaviour, self-regulation, and other twenty-first-century competencies essential for participation in an increasingly digital society.

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