Appropriateness of the communication channels employed in implementing Teachers Continuous Profession Development (TCPD) in Nyamagana District Secondary schools, Mwanza Region, Tanzania

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Abstract: *This study purposed to examine the appropriateness of the communication channels employed in implementing Teachers Continuous Profession Development (TCPD) in Nyamagana District Secondary schools, Mwanza Tanzania. Descriptive survey and explanatory research designs together with mixed methods approach were used in this study. The study Population consisted 32 Nyamagana secondary schools owned by the government. The researcher used both probability and non-probability techniques to get a good representative respond to the quantitative and qualitative data collection tools of this study. The study sample were 200 secondary teachers among other education officials as key respondents. Data were collected through both interview guides and questionnaires. Quantitative data was analyzed descriptively and presented by use tables, graphs and pie charts which were displayed through percentages and frequencies. In addition, content analysis was used to analyze qualitative data from the interview guides. Findings of the study shows that, WhatsApp (76.3%) and Dialogue (65.4%) "very frequently" were used channels for the implementation of Teachers Continuous Professional Development policy in Nyamagana district secondary schools by teachers. The study concluded that, selection of the effective communication channel affects the outcome of TCPD implementation in secondary schools. However, teachers were faced with limited knowledge and skills because of the nature the participatory communication approach was used in implementing TCPD within their secondary schools . This study recommends the government to provide internet network in Secondary schools as well as computers and television sets for use.*

Key words: *Communication channels, implementation, Continuous Profession Development, Teachers*

1.1 Study background

Almost on daily basis, members of the society are faced with new challenges and opportunities for development. There is a need for new skills, knowledge and experiences to deal with such problems as well as take advantage of the prospects. Education is vital in enabling the society to escape poverty, build better lives, promote a more tolerant and peaceful society. Teacher training is an important ingredient for quality education products. Currently, all the countries in the world are focused on

supporting quality education through competence-based teacher training (The International Institute for Sustainable Development [IISD], 2016).

According to Lambert (2003) professional development includes learning opportunities that can be found in mutual conversations, coaching episodes, shared decision-making groups, reactive journals, parent forums, or other such occasions. Professional development enhances teachers to develop their knowledge, skills, attitudes, techniques, and strategies to teach their subject effectively with focus on the changing world. Professional development sharpens the knowledge of teachers and makes them update in their respective subjects. Lindstrom and Speck (2004) define professional development as: a lifelong, collaborative learning process that nourishes the growth of individuals, teams, and the school through a daily, job-embedded, learner centred, and focused approach. Izuagba and Obiefuna (2005) define in-service teacher training as to all programs designed to help teachers already in-service to continuously update their knowledge, skills, and attitude in order to contend with continuing changes in methods, course content and resources used in teaching.

Ertesvåg (2014) assert that, there are important policies and promising practices to support a wide variety of professional development needs. Canada is a highly diverse country; students and communities are diverse and with changing needs in a local, national, and global context, educators require a repertoire of professional knowledge, skills, and practices to be developed through a wide range of professional development and learning experiences throughout their careers. This variation is appropriate, professional, beneficial, and positive. However, variation should not result in inequities of access, funding, experiences, or outcomes for educators' professional learning (and for the students they serve). Generally, the teacher training policies in Canada purposes on the importance of teacher leaders, school leaders, and system leaders working in a new collaborative professionalism of respect and support connected to students' learning, families' engagement, and community development for educational equity, excellence, and well-being (Campell et al., 2017).

In Ghana, education system has been transformed in response to the need and pressures to improve educational outcomes since independence (Abakah, 2023). Provided Abakah in Ghana's teachers' development, there is currently the Pre-Tertiary Teacher Professional Development and Management (PTPDM) policy and the newly implemented Cabinet Memorandum on Policy on Teacher Education Reform (CMPTER) championed by the National Council for Tertiary Education (NCTE) through Transforming Teacher Education and Learning (T-TEL), a non-governmental organization. These reforms are not structured however to have a self-drive power for the provision, implementation and institutionalization of CPD activities for pre-tertiary teachers in Ghana. This affects how CPD is enacted and practiced among teachers in Ghana and this affects teachers' professional development efforts (Abakah, 2023; Abakah, 2019).

The United Republic of Tanzania through the National Framework for Teachers Continuous Professional Development (NF-TCPD) ensures that, teachers are professionally empowered and supported within an effectively governed system (The United Republic of Tanzania, 2020). The framework fosters improved teachers' subject content mastery, classroom teaching and learning practices including the leverage of technology in the teaching and learning processes. The framework also prioritizes vulnerable populations and ultimately ensures inclusive and equitable quality education in Tanzania. The framework has six domains to enhance capacity for supporting TCPD in Tanzania. These domains include Principles of TCPD, Mechanism for TCPD implementation; Institutional arrangement of TCPD provision, Monitoring and Evaluation (M&E) of the TCPD, TCPD funding and sustainability and Roadmap for TCPD implementation (The United Republic of Tanzania, 2020).

According to the World Bank (2023), the Government of Tanzania through the Ministry of Education and her development partners has rolled out a new teacher training system that works to create effective, affordable, in-service training for teachers in Tanzania. Popularly known as *Mwongozo wa Kutekeleza Mafunzo Endelevu ya Walimu Kazini* (MEWAKA), or A Guide to Implementing Continuous On-the-Job Training for Teachers. The National Framework for Teacher Continuous Professional Development (TCPD) was introduced in 2020, not long after the Tanzanian government found that 80% of its teachers hadn't received any training for five years. Its key innovation is to have initiated collaborative, school-based professional development, which has elsewhere demonstrated its potential for improving teachers' competencies and the quality of classroom instruction. MEWAKA's plan is to pilot continuous professional development in each of Tanzania's 26 regions, scaling it up year-on-year until it reaches every primary school by the end of 2026. It started in early 2022 with the orientation and training of two teachers (per pilot school), local education officers, and head teachers. Schools with successful training sessions have features in common: teachers trained for peer facilitation, needs-based planning, a focus on improving instruction through collaborative learning, and buy-in from head teachers and management. The results-based financing model means program funds are disbursed when targets for training coverage and teacher participation are met.

1.2 Statement of the problem

Education system that supports teachers to be lifelong learners enables them to be agents of change. Teachers Continuous Professional Development (TCPD) is an essential avenue for teachers' ongoing learning and development. TCPD can help teachers build and hone the knowledge, skills, and competencies to teach effectively and can help build their motivation and commitment to the profession. TCPD is important for all teachers. In education systems in which teachers have not received rigorous initial teacher education (ITE), there are additional needs for on-the-job training through TCPD. Communicating TCPD policy is one of the most important steps for its effectiveness and this relies on the approprietness of the communication channels. This communication has to be participatory. Participatory communication approach has become vital in the implementation of different development projects for decades. It focuses on the involvement of communities at various stages of development projects implementation with clear dissemination of information through different channels from both policy makers and policy implementers (Bossman, 2023). World Bank (2022) reported a number of challenges during the TCPD policy implementation, which includes but not limited to inadequate communication channels in the implementation processes. This has raised concerns on the communication channels employed in implementing Teachers Continuous Profession Development (TCPD) in Mwanza region and therefore this study to investigate the appropriateness of the communication channels employed in implementing Teachers Continuous Profession Development (TCPD) in Nyamagana District Secondary schools, Mwanza Region.

1.4 Research Objective

This study is guided by the following objective: -
To establish the appropriateness of communication channels employed in Teachers' Continuous Professional Development implementing (TCPD) in Nyamagana District Secondary schools, Mwanza Region, Tanzania.

1.5 The Conceptual framework
Independent variable   *Dependent variable*

Appropriateness of communication channels
- Types of communication channels for TCPD
- Number of teachers reached
- Past and current rates of channel use
- Estimated geographical coverage
- Audience composition reached

Effective Teachers' continuous Professional Development
➢ Increased output productivity
➢ Professional growth forecast
➢ Improved knowledge levels
➢ Increased skills levels
➢ Reduced training need gaps
➢ Increased levels of job retention
➢ Increased workforce size
➢ Increased employee satisfaction levels

Intervening variables
- *Policy guiding on the implementation of the teachers' continuous professional development*
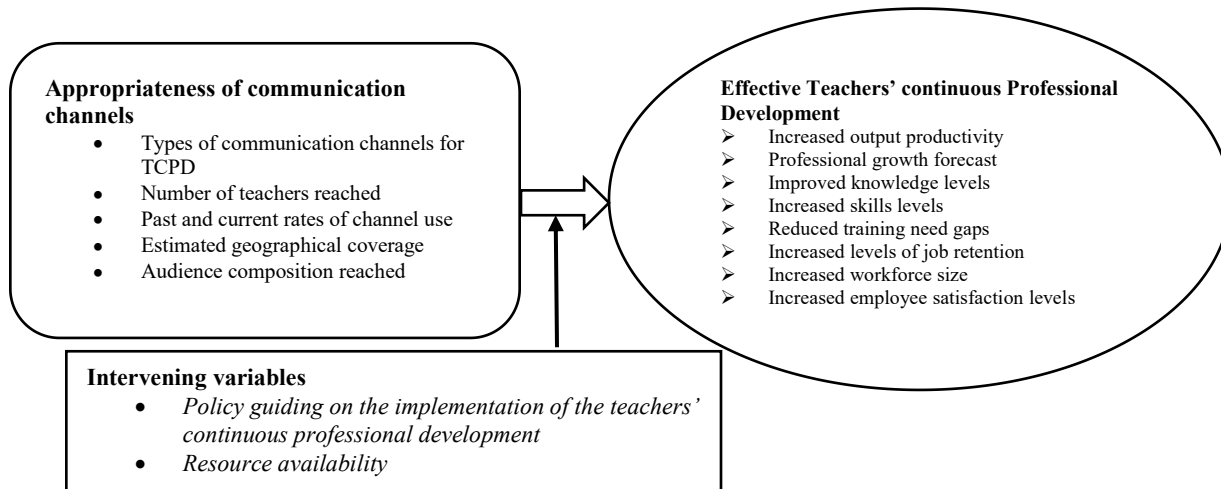- *Resource availability*

Figure 1: The Conceptual framework
Source: Own conceptualization, 2024

1.6 Literature review
Two types of literature guide this study. Theoretical and empirical literature.

1.6.1 Theoretical review
This study shall be guided by Participatory Communication theory**.** Influenced by Habermas' notion of communicative action, the theory proposes that dialogue can be used to facilitate balanced sharing of knowledge leading to the creation of new knowledge and the discovery of the best option for change (Mefalopulos, 2008). The facilitator must ensure that dialogue is used to enable the collective discovery of solutions that can respond to a development problem in a manner that fits the aspirations and abilities of the marginalized (Servaes, 2003). Also, influenced by the Freirean concept of empowerment**,** the theory states that the empowerment of poor people can be achieved through the use of dialogue to build the capacity of the poor to engage in knowledge exchange, and decision-making processes (Freire, 1997). Proponents of the theory concur that the prioritization of hitherto marginalized voices and selection of media and schedule that fit their needs is capable of reversing power imbalances by addressing a key dimension of poverty, social exclusion (Mefalopulos, 2008).

Mefalopulos (2008) states that, the participatory paradigm which claims development as a participatory process of social change has become an option development perspective. Based on the participatory paradigm, development has been perceived as not something that can be imported from western tradition but it is something that can be emerged out of the indigenous culture. According to the theory, participatory process needs genuine participation of the local community and the contextualisation of development works into local cultures and settings (Searveas, 2008). Although Participatory Communication Approach can be used in TCPD programmes development, it does not guarantee success as explained by (Tufte & Mefalopulos, 2009), because broader contextual requirements are important, like flexible TCPD which considers holistic needs of the trainees, political will of policy makers, and enabling attitude among all key stakeholders. Enhancing ICT in teacher training in colleges in Nyamagana District Secondary schools, Mwanza-Tanzania has been a challenge due to the cost of procuring ICT equipment's and lack of connection for funding. It seeks to measure the appropriateness of the communication channels employed in implementing TCPD in Nyamagana District Secondary schools, Mwanza-Tanzania; to determine the extent of clarity of messages in the

implementation of TCPD in Nyamagana District Secondary schools, Mwanza-Tanzania; and, to determine the nature of feedback from applying PCA in the implementation of TCPD in Nyamagana District Secondary schools, Mwanza-Tanzania.

The major criticism levelled against participatory communication theory is its idealistic approach to addressing power struggles found in society (Leeuwis, 2000). Leeuwis (2000) has criticized the theory for its reliance on dialogue and empowerment for the creation of a conducive environment for knowledge sharing. He argues that dialogue as a tool for empowerment is too simplistic to address socio-economic challenges faced by the poor in participatory contexts. He states that the poor lack, among other resources, expert scientific knowledge and access to socio-economic resources, which they can use to make and criticize certain validity claims concerning truth, normative rightness and authenticity, hence they often find it very difficult to influence knowledge production processes. Secondly, Cooke and Kothari (2001) identify a group level tyranny. They accuse the participation paradigm of neglecting well-known social and psychological dynamics of group functioning. As a result, they argue that the neglect of group dynamics often results in the expression of a consensus that reinforces the interests of the already powerful members of the group at the expense of the marginalized.

Lastly, Kothari (2001) view**s** participatory methodology as tyrannical. They note that the overwhelming acceptance of the goals and values of participation has obscured consideration of other methods for cultivating development. They perceive the development participatory discourse as methodologically parochial because of its potential to alienate other development methods which have advantages that participation cannot provide (Christens & Speer, 2006.). Kothari (2001) further argues that the notion of participatory methods as capable of causing empowerment of local communities is narrow because it does not address the important question of, empowerment for what.

1.6.2 Empirical review
Communication Channels used to implement Teachers' Continuous Professional Development
Abbas (2009) conducted a study entitled, "Impact of Communication Technology as a channel for interaction between academic staff and their students in Malaysian higher learning institution". The purpose of the study was to examine the impact of communication technology as a channel for interaction between academic staff and their students. The study explained and focused on media choice and it attempted to determine the communication channels mostly used by academic staff in interacting with their students and the reasons for selecting these channels. It also intended to find out whether there was a significant relationship between communication channels mostly used by academic staff and their perception of media richness. The findings of this study extended two of the most widely investigated media choice theories; Media Richness Theory (MRT) and Social Presence Theory (SPT). New communication technologies and their facilities are also known as the new media, as opposed to the traditional media of face-to-face meetings, as well as telephone and text-based documents. The results revealed that although the existence of new communication technologies such as the internet offers faster and cheaper facilities, face-to-face communication is still the most used and preferred communication channel by academic staff in interacting with their students. In addition, there was a significant relationship between the communication channel mostly used by respondents and their perception of media richness and social presence. This explained why the higher level of social presence, the higher the level of experience with a channel would be. Thus, research into understanding factors influencing communication media choice and exploring optimal ways of communicating has sparked the interest of academics and practitioners alike. The scope of this study is media choice and this research attempted to determine the most preferred communication channels

used by academic staff in interacting with their students and the reasons for their selection. Finally, the study recommended that; The differences among channels should not just based on the number and types of cues filtered out, but also based on several criteria or structural affordances such as contingency, transformation, participation, proximity, synchronicity, parallelism. In other words, communicating by media is rather different than communicating in person. This has the implication that understanding may be distorted due to a lack of social cues and thus, users will have the tendency to misinterpret messages.

URT (2017) report shows that the major goals of teacher professional development in Tanzania are to bring changes in classrooms practices of teachers, a change of teachers' attitudes and beliefs, and a change of students' learning outcomes. The Teachers Development Framework identifies two major channels to implement teacher's professional development in Tanzania. The first is direct professional development for in - service teachers which includes workshops and seminars that target at disseminating skills and new knowledge, and allowing reflections, innovations, and problem solving. This is done through meetings at wards or district levels. The second is school level professional development, which is also referred to as community learning. This allows teachers to collaborate with other peers within the school environment. Community learning aims at the achievement of teacher improvement and enhancement of students learning resulting from the efforts towards education reforms in Tanzania.

Ugochukwu (2020) did a study entitled, "Information and Communication Technology (ICT) skills and efficient management of educational resources in public secondary schools''. This study investigated information and communication technology (ICT) skills and efficient management of educational resources in public secondary schools in Rivers State, Nigeria. The study which adopted descriptive survey design was guided by two research questions. The 268 secondary school principals in Rivers State constituted the population. A sample of 255 principals which was 95% of the population was drawn through the stratified random sampling technique. A self-structured questionnaire titled: "ICT Skills and Efficient Management of Educational Resources Questionnaire (ICTSEMERQ)" was used for data collection. The instrument which contained 14 items was properly validated and the test-retest method using Pearson's Product Moment Correlation Coefficient Statistics for reliability testing yielded an 'r' value of 0.82. Percentages, mean and standard deviation were used to analyse the research questions. The study revealed that the ICT skills needed by principals include among others: knowledge of operating ICT devices, good knowledge of using ICT devices in teaching, ability to use ICT devices to store and retrieve information. The study also revealed that ICT skills enhance efficient management of educational resources through enhancing proper keeping of records, effective communication and proper accountability of educational resources among others. Based on the findings, conclusions were drawn and the following recommendations were made: Rivers State Ministry of Education in collaboration with secondary school's management board should provide capacity building programmes to principals on ICT skills and principals should enroll themselves in institutions where they can obtain ICT literacy and utilization skills.

Disterheft (2011) did a study entitled, "Sustainable universities a study of critical success factors for participatory approaches in Portuga". Participatory approaches can be seen as a requirement, but also as a benefit to the overall paradigm change towards sustainable development and contribute towards the integration of sustainability concept into the university culture. This study addressed some of the failures and successes experienced within participatory approaches in campus sustainability initiatives, and deduces a set of critical success factors and emergent clusters that can help to integrate the dimensions of participation more inclusively into sustainability assessment. Following a qualitative

approach and inspired by the Delphi method, semi-structured expert interviews (N¼ 15) and four focus group discussions (N¼ 36), with participants coming from twenty different countries in total, were conducted and compared according to qualitative content analysis. Findings give empirical evidence to some of the characteristics related to stakeholder engagement, and associate higher education for sustainable development to empowerment and capacity building, shifting away from a previous focus on environmental sustainability. The success of participatory approaches is interdependent with structural institutional conditions and the persons engaged, highlighting the importance of specific skills and participatory competencies. A better integration of the dimensions of participation into sustainability assessment practices can help in defining and establishing participatory approaches on institutional level and fostering a culture of participation in the transition to sustainable universities.

Eureka (2017) did an investigation entitled, "Communication as a Strategy for Implementing the Language-in-Education Policy in Botswana Primary Schools". Communication is the pinnacle of the implementation of the language-in-education policy. The study used the diffusion of innovation and the eagle leadership theories. This study adopted the qualitative approach with open ended questionnaires, interviews and classroom observations techniques to investigate the problem. The findings indicate that effective communication channels were lacking in the implementation process of the language-in-education policy and this has led to disconnectedness, detachment, burn out and frustration amongst teachers. This study suggested the development of leadership and management in education officers, school management and teachers to raise their awareness about the critical role they can play in successfully implementing the LiEP through diverse communication channels. The study recommended that: first, In the process of diffusion of the policy, the leadership, both external and internal should play a leading role, Second, the leadership should be influential and guide the direction of the implementation process through relevant and appropriate communication channels.

Moesonik (2017) conducted a study entitled, "The Influence of Participatory Communication in Promoting Accountability and Transparency of Constituency Development Fund in Emurua Constituency in Kenya". And the main objective of this study was to establish the influence of participatory communication in promoting accountability and transparency in developing fund. The study used Participatory Communication Theory and the theory of social Exchange. The study adopted use of mixed research design to collect quantitative and qualitative data that was analysed to produce both qualitative and quantitative results. The study recommended that Constituency Development Fund (CDF) management should also take advantage of social media where they can interact with the local people easily and quickly, hold public forums or town hall meetings to bridge the gap and enlighten the local people on various projects and update their website so that the local people can review the information they want anytime and anywhere.

Parker (2016) conducted a study entitled, "Participatory Communication Research for HIV Prevention Globally: Translating Critical Dialog into Action through Action Media". The study employed social change theories to provide an alternative to persuasive health communication approaches that seek efficient information delivery of health knowledge grounded in biomedical constructs and rationale. Qualitative approach was used to collect data. The study explored a communication-focused participatory action research methodology - Action Media. The study revealed that, Persuasive approaches typically utilize mass media communication to achieve wide reach, in combination with expert-informed dialogue delivered by health professionals, health promoters, or peer educators. By comparison, although SBCC and CFSC approaches may also employ mass media and expert-led dialogues among other modalities, there is a particular concern with how audiences negotiate health concepts in relation to material conditions, as well as having an interest in influencing response beyond

the individual level. This study recommended that: first, Communication to address public health concerns is typically developed through expert-led didactic approaches that, at best, engage audiences at the end of the development cycle through pretesting of communication concepts. Second, Action Media must provide an alternative approach that can be utilized to inform communication by integrating community perspectives at the outset. Nevertheless, the focused engagement with small group representative of health-vulnerable sub-populations, Action Media findings have informed large-scale communication interventions.

Ndayambaje (2023) conducted a study entitled, "Teaching and the teaching profession in a digital world –Rwanda". The major aim of the study aims to increase digital literacy, support the acquisition of ICT skills and address the gender digital divide. The study used content analysis by reviewing reports and articles from academia, development agencies and international organizations; news media; and statistical data, policies, strategies and reports from relevant ministries. The primary data consists of qualitative data from 13 key informant interviews with various stakeholders in the education sector, including affiliated institutions/implementing agencies of the Ministry of Education, development partners, teacher unions, employers' organizations and the private sector. The interview questions focused on: policies, plans and strategies for the integration of ICT in teaching and learning; the status of digitalization in education, including challenges and best practices; stakeholder involvement in digitalization initiatives; and the impact of digital technology and digitalization initiatives on the teaching profession and the working conditions of teachers on her paper revealed that order to realize these commitments, the government of Rwanda has launched a number of initiatives to promote digitalization in basic education. These initiatives have been selected not only because they mark Rwanda out among the leading countries in Africa in ICT, but also because they have transformed the delivery of teaching and learning over the past two decades. His paper was informed by a review of existing literature (secondary data) and key informant interviews (primary data). The secondary data includes: reports and articles from academia, development agencies and international organizations; news media; and statistical data, policies, strategies and reports from relevant ministries. Research report shows that e introduction of ICT in primary and secondary education and the adoption of ICT related policies and strategies in education and other sectors have transformed teaching and learning in Rwanda (Government of Rwanda, 2020). The study provides the following recommendations: first, Government must support the provision of, access to and the use of ICT in schools and at home. It is also important to: continue investing in teacher training so that teachers are conversant with the use of technologies for teaching and learning. Second, speeding up the roll out of electricity in schools and communities; ensure that schools have sufficient rooms that can be used to learn ICT and learn with ICT; provide access to the internet and safe storage for ICT devices; and procure enough computers for learners and teachers to guarantee equal learning opportunities for Rwandan children.

Jonyo (2017) did a study entitled, "Information, Communication and Technology Integration in Kenya". This study employed transformational leadership theory with mixed method approach. The study aimed at increasing efficiency in operations and to ensure services are available to the teacher and other stakeholders on the TSC website (www.tsc.go.ke) and teachers' portal (www.teachersonline.go.ke). The study recommended that there is a need to increase the ICT budget to enable the Commission to achieve a higher level of automation to include a deliberate skill transfer program for internal technical capacity to effectively manage outsourced systems. A higher ICT budget is also needed for the development of a proper disaster recovery and business continuity plan, mitigating any data loss, integrating all information systems at TSC and proper digitalization of records to ease information retrieval for better service delivery and reduce cost on paper use. More teachers should be trained on ICT integration.

Power (2012) did an evaluative study entitled, "Towards a new architecture for teacher professional development in South Sudan". The major purpose of was mobile phone adoption and diffusion in low economic development countries (LEDCs) in providing greater information access using open educational resources to support large-scale teacher education programmes. The model was through practically focused open distance learning (ODL) and low-cost mobile technology, e.g. phones and micro secure digital (SD) cards providing TPD and classroom teaching materials. The results of this paper showed that there was very little in the literature that examine the use of mobile phones to support professional learning within the educational domain, particularly in the context of LEDCs; equally, there is little in the literature that addresses how LEDC governments might meet the challenges of scale and access through appropriate models of school-based teacher development. Therefore, the recommended that, the government should harness mobile technologies to share practices and using collaboratively developed OERs, represent the most feasible way forward for improving the quality and quantity of the teaching workforce in South Sudan.

Vibeke (2018) conducted a study entitled 'Participatory communication on internal social media -a dream or reality?''. The purpose of the paper was to explore whether internal social media (ISM) introduces a new kind of participatory communication within organizations that is capable of influencing and moving the organization. The study based on two exploratory studies: a multiple case study in ten Danish organizations, and a single case study in a Danish bank. The study founded that different types of communication on ISM develop in different types of organizations. Participatory communication capable of changing the organization only develops when coworkers perceive that they have a license to critique. The paper therefore proposed to distinguish between three different types of communication arenas created by ISM: a quiet arena, a knowledge-sharing arena, and a participatory communication arena.

Umarwan (2023) conducted a study entitled, "Communication Skills Implementation: The Effective Communication of School Teachers during the Covid-19 Pandemic". The study aimed at analysing effective communication channels in Buddhist Religious Education (BRE) learning during the Covid-19 pandemic at Bandar Agung Elementary School 4, Bandar Sribhawono Sub-district. The study utilizes a qualitative approach and a case study method. Data is collected through observation, interviews, and documentation, which are then analyzed using the Miles and Huberman data analysis model. The research findings indicate that teachers use WhatsApp and video calls as communication channels for distance learning. Teachers also involve parents or family members of the students as communication intermediaries. Interactive teaching methods such as questioning, discussions, and lectures are employed. Discussion based on practical academic communication theory regarding the research findings conducted in the field. The study recommended that Effective communication in teaching includes: First, the use of effective communication media, such as WhatsApp, to facilitate the delivery of information, motivate students, and enable direct interaction through video calls.

Koomar (2023) on his journal entitled, 'MEWAKA in Tanzania: Emerging findings on tech-supported teacher professional development'. MEWAKA (Mafunzo Endelevu kwa Walimu Kazini, or Teachers' Continuous Professional Development (TCPD)) is a landmark teacher professional development programme being implemented by the Government of Tanzania. The programme is decentralised, with teacher learning based in schools and focused on semi-structured Communities of Learning (CoLs). CoLs are spaces where teachers can gather weekly to discuss and reflect on issues most relevant to their schools as well as learn and improve their pedagogical skills. Peer facilitators help teachers to

collaboratively solve problems, learn new approaches to improve their practice, and generally create a culture of reflection and school improvement.

One key aspect of the TCPD programme is its technology components. A learning management system (LMS), developed by Tanzania Institute of Education (TIE) with support from the University of Dar es salaam's College of Information and Communication Technologies (CoICT), houses CoL modules, self-learning modules, and peer facilitator guides and manuals. These materials provide some structure to the teacher-led conversations. Firstly, CoLs enable teachers to solve teaching and learning challenges with colleagues. Secondly, CoLs can support teachers to grow professionally and become equipped with knowledge and skills related to ongoing developments in education. The improvement of teachers' understanding of the CoL and its practices means teachers are learning how to engage in professional development discussions in schools, through the use of technology. This also minimises implementation costs, as previously teachers would travel to centralised locations for professional development opportunities.

Sanina (2017) conducted a study entitled, "The effectiveness of communication channels in government and business communication". The study aimed at monitoring of trends in the development of regional innovation system in St. Petersburg, this study presents a quantitative analysis of the effectiveness of the use of different communication channels and of the use of multi-channel communication strategies. The study adopted and explained by the theory of independent mindedness. In doing so, it introduces the concept of "communicative result" as the criteria for measuring efficiency. It further compares the technical parameters of different channels in terms of their reliability, speed, and effectiveness. It considers the impact of cultural factors on the efficiency of communication channels. It presents a data driven framework for evaluating and developing efficient government communication channels within specific national, cultural conditions. Using the data collected in Russia, the paper presents how the most widely used government communication channels for voluntary, inter-active communication. The study recommended that Government organizations need to select the proper composition of various communication channels to achieve the most efficient results. Just as in the study of any other communication, consolidation of the technical characteristics of communication channels and empirical data should be used to review the efficiency of government and business interactive communications.

1.7 Design and methods

This study used mixed approach methods to collect quantitative and qualitative data using questionnaires and interview guides respectively. Descriptive survey and explanatory sequential research designs were used to inform the approaches accordingly. The study was undertaken in Nyamagana district. The target population were teachers working in public secondary schools in nyamagana and education administrators working in education offices in the district. Among the administrators involved in the study included school administrators from secondary schools in Nyamagana district. This study used both probability and non-probability techniques to get a good representative respond to the quantitative and qualitative data collection tools of this study. In this study, 32 government secondary schools were given an equal opportunity to participate in this study through simple random sampling techniques. For teachers to participate in the study, they were recruited through disproportionate stratified random sampling techniques. All administrators were recruited through purposive sampling techniques. When the study population is less than 10, 000, a sample size of between 10 percent and above is a good representation of the total (Mugenda, 1999). In this case, 62.5% (20 schools) of the schools in Nyamagana District were recruited for this study. To get the number of teachers to be recruited in the study to respond to the questionnaire, the total number of

teachers working in the schools currently were considered. The quantitative target population of the study was 1,173 Secondary teachers in Nyamagana District (United Republic of Tanzania, 2023). The study adopted Yamane (1967) scientific formula to determine the study sample. The formula asserts that:

$$n = \frac{N}{1 + Ne^2}$$

Where;
n = sample size
N = total population
e = margin of error
Given:

N = 1173
e = 7% or 0.07
1 is constant.

n=1,173 /1+1,173 (0.07)^2

n=203.9 which can be rounded off to 200 teachers

Purposively, key informants were interviewed two from education officers, two senior education officers from the district and two (preferably the head of the school and the head/leader of curriculum development) from each school earmarked for the quantitative data collection. From the above arithmetic, 200 teachers participated in this research from 20 schools. At most, 40 respondents from the schools. Information on sampling is summarized in the following sampling frame table.

Table 1: *Sampling Frame*

| Population	Sampling Technique	Sample Size	Total
Teachers from the secondary schools	Disproportionate stratified random sampling techniques	200	200
School Administrators concerned with Education matters	Purposive sampling techniques	2	2
Senior Education officers from the district	Census	2 from each Districts	1
Teachers concerned with teacher education matters in the earmarked schools	Purposive sampling techniques	40	40
Total			244

Source: *Field data, 2023*

This study used both interview guides and questionnaires as research instruments. The study used semi-structured questionnaire to collect data from secondary school teachers using face to face techniques and information keyed in SPSS Version 27 for descriptive statistical analysis using descriptive statistical techniques. In-depth interviews were conducted with the educational officers, head teachers and curriculum heads in schools and two TCPD administrators. Qualitative interviews allowed for a deeper understanding of the consistency of the research theme. Qualitative data were analysed thematically, identifying recurring themes, perspectives, and narratives to provide rich qualitative insights on the subject matter.

1.8 Study findings
Frequency of Communication Channels used in TCPD implementation

Figure 2: *Frequency of Communication Channels used in TCPD*
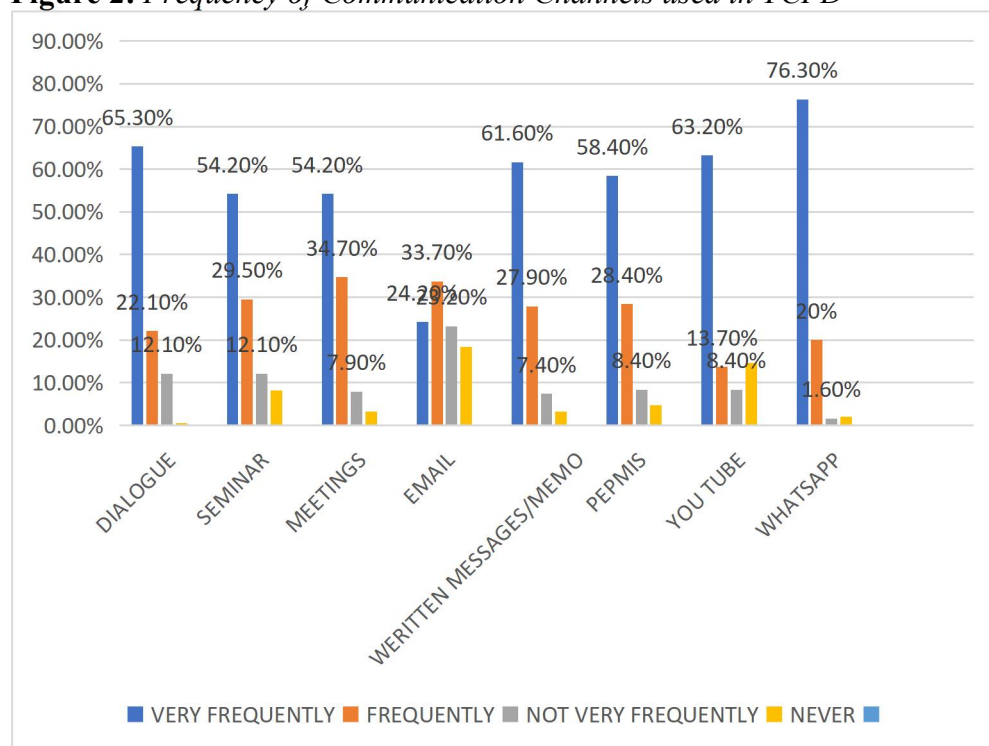
Source: Field Data (2024)

The study sought to understand the frequency of communication channels used in the implementation of TCPD policy by in-service teachers in Nyamagana secondary schools. Response to this question comprises the following communication channels: dialogue, Seminar, Meetings, Email, Written message/memo, website/PEPMIS, you tube and WhatsApp. Its frequency of use was in figure 2.

Dialogue: From the findings, 65.3% o f the teachers (the majority) were very frequently using dialogue in TCPD implementation in their secondary schools, 22% were frequently using dialogue in TCPD implementation, 12.1% of the teachers were not frequently using dialogue in TCPD implementation and 0.5% never used dialogue in TCPD implementation. This implied that majority of secondary teachers did participate in dialogue frequently as the means of communication channels in implementing TCPD in their schools. The nature of dialogue conducted by teachers during TCPD in most cases involve teachers from the same department of teachers of the same field of study and it is a two-way conversation in nature and based on respects the relationships between the characters in adding teachers' knowledge and skills by themselves. And there no an outsider who is invited in this kind of dialogue since it done within the school, the skills and knowledge shared was limited to themselves. The interview findings showed that, it was with this dialogue where there was a direct communication interaction between teachers' characters that were taken as essentials to the TCPD practice and generally acquisition of teaching knowledge and teaching skills by themselves frequently. One of the respondents said; *'We do dialogue every week on Tuesday and this was placed on the school timetable''* *(EDUOFF01, 2024).* This shows that an academic dialogue was done frequently in relation to the school time aimed at improving teachers' knowledge, gaining and sharing new academic

skills as part of TCPD implementation. These findings concurred with a study done by (Servaes, 2003) which underlined that, empowerment of people can be achieved through the use of dialogue.

Seminars: Data presented in figure 2 shows that,54.2% of the teachers were very frequently applying seminars as a communication channel used in implementing TCPD in their secondary schools, 29.5% were frequently applying seminar as the communication channel used in TCPD implementation. This implied that seminar involved the discussion or training by themselves. The frequently nature of the seminar conducted here did not involve trainers from outside the secondary school instead seminars were conducted by themselves with the school under same venue used as their offices. Means that, teachers were not conducting seminars outside their secondary school. Thus, seminar was considered as the internal academic communication channel for teachers in implementing TCPD.

Meetings: This communication channel brings teachers together in one place (usually in a staff room or any other selected area) for purposes of sharing, acquiring knowledge, skills, information, discussing and solving problems aimed at TCPD implementation. Meeting attendance in these secondary schools depended on the nature or its aim, it can involve all teachers within a secondary school or it can be conducted based on department such as science teachers themselves or languages teachers themselves and should be focusing on TCPD implementation. Attendance depended on the number of staff in such secondary school. On the frequency application of this teachers' communication channel as it is shown on figure 2, 54.2% very frequently used meeting as the internal communication channel in the implementation of TCPD, 34.7% were frequently applying meetings in TCPD implementation, 7.9% were not very frequently applying meetings in their TCPD implementation, 3.2% never used meetings in the implementation of TCPD. This also implied that, it differs from secondary school to secondary school on the communication channel applied in the implementation of TCPD since every secondary school in Nyamagana District has got its own timetable for TCPD and nature of the communication channel mostly did depend on the secondary school time table. One of the respondents of the interview said, *"Every secondary school was mandatory to have TCPD time table but it was not necessarily their time table to match or to be the same all over. It's the secondary school admiration to decide on the TCPD schedule"* (EDUOFF02, *2024).* Therefore, meetings appeared to be one of the mostly common used choices of academic communication channel in TCPD implementation in secondary schools.

Emails: Teachers used email as a communication channel (electronic mail) for sending and receiving messages across through Internet. Quantitative data as in figure 2 shows its only 24.2% were very frequently in using email in TCPD implementation, 33.7% were frequently applying email in TCPD implementation, 23.2% were not frequently in applying email in TCPD implementation, 18.4% of the respondent never applied email in TCPD implementation. From both quantitative data and qualitative data, it was discovered that majority of the secondary school teachers were not applying email in the TCPD implementation. However, its mostly applied by school admiration leaders, education officers from national level to the village level and it was only for the authorized one. One of the respondents said; *"There is a lot of complication in using email for receiving and sending academic information to our teachers since it needs daily supportive infrastructures within the secondary school such as accessible internet to all, computer etc, of which to some secondary school its currently a challenge to access that"* (EDUOFF03, *2024).* Generally, email was not frequently applied in the application of TCPD due to some challenges of using email and appeared to be contrary with a study done by Jonyo (2017).

Written messages /memo: This appeared to be the most and cheap communication channel used for information sharing between teachers, and it reaches on time to all teachers due to its nature of sending and receiving message. Figure 2 shows that; 61.6% said they were very frequently in using written messages or memo in implementation of TCPD, 27.9% were frequently using written messages or memo in their secondary schools for TCPD implementation, 7.4% were not frequently in applying written messages or memo, and 3.2% never used written messages or memo in implementation of TCPD. These written messages/memos were frequently used by teachers within the secondary school as an academic internal communication channel. Teachers sent right message using the right modality (normally written on the blackboard) to the right individual (teachers) at the right time. This implied that majority of teachers communicate or through written messages or memo. And this can be through WhatsApp, notice board, office blackboard, etc depending on the nature of the message. However, in most cases they do receive these written messages through school notice board or staff blackboard where these messages are presented.

PEPMIS: This is *Watumishi Portal, Utumishi Tanzania Employee's Self-Service System,* on the frequency of PEPMIS usage results from the figure 2, data shows that, 58.4% very frequently use of PEPMIS in TCPD implementation, 28.4% frequently used PEPMIS in TCPD implementation, 8.4% not very frequently used PEPMIS in TCPD implementation, and 4.7% never used PEPMIS in the implementation of TCPD. This means that, about 95.3% were frequently using PEPMIS as their preferred communication channel in the implementation of TCPD, and its only 4.3% who never used **PEPMIS.** This implied that, majority of secondary teachers knows, and were aware on how PEPMIS is applied in the TCPD implementation and monitoring. This relates with the interview findings which shows that, its only few teachers who did not know how to apply PEPMIS in the implementation of TCPD however they are still learning on its application. One of the respondents said; *"It is mandatory for every teacher to submit his or her lesson plan of his or her daily teaching activities, and it's through PEPMIS where teachers do receive and send different information including loans information application however some still have challenges on how to use PEPMIS apart from being empowered via MEWAKA seminars with fellow teachers on how to use this web site" (EDUOFF04, 2024).* These findings are in line with a study done by Koomar at el, (2023) who argues that, one key aspect of the TCPD programme is its technology components. A learning management system (LMS), developed by Tanzania Institute of Education (TIE) with support from the University of Dar es salaam's College of Information and Communication Technologies (CoICT), houses CoL modules, self-learning modules, and peer facilitator guides and manuals. These materials provide some structure to the teacher-led conversations.

You tube: MEWAKA aimed at empowering teachers through communication channels with different information, knowledge, skills by using different possible approaches that can be accessible to teachers from different environments in Tanzania. And one of the communication channels used in MEWAKA is You tube. Quantitative data presented in figure 2, shows that, 63.2% teachers very frequently are using You tube in implementation of TCPD in Nyamagana District secondary schools, 13.7% teachers frequently using You tube in TCPD implementation, 8.4% teachers not frequently using You tube in TCPD implementation, and 14.7% never used You tube in TCPD implementation. This data showed that majority of teachers (76.9%) teachers are using You tube during the implementation of TCPD. Teachers after login in to PEPMIS were required to learn and view some of the directive via You tube to get more knowledge and skills concerning MEWAKA, and some part of the courses can be viewed through You tube. One of the respondents said; *"I learnt on how to login, receiving and sending some information to PEPMIS via You tube, I also learnt on how to apply loan online via You tube, this has been so helpful in my teaching career as a secondary teacher since things get easy via You tube. And*

this basically made _teachers becoming responsible for their own learning'' (EDUOFF07, 2024)._ Also, currently in teaching half of the teaching academic reports have to be submitted online via PEPMIS so, majority of secondary teachers were using You tube in getting some directives on how to login to PEPMIS and submitting their daily reports.

WhatsApp: This is an online teachers communication channel used in receiving and sending different information such as invitation for meetings or discussions, social information among others. Quantitative data as presented in figure 2 shows that, 76.3% very frequently used WhatsApp as a communication channel in TCPD implementation, 20% frequently used WhatsApp as one of the communication platform in TCPD implementation, 1.6% not frequently used WhatsApp in TCPD implementation, and 2.1% never used WhatsApp in TCPD implementations. This implied that majority of teachers (96.3%) were aware and seemed to have supportive internet gadget such smart phones and made them be technological advanced in simplifying some issues during the TCPD implementation in Nyamagana secondary schools. One of education official said: - _'we do have the school WhatsApp where we used to share different kind of information such as MEWAKA time table in reminding ourselves on what has to be done in the following day, and if one of our fellow teacher needs some clarification on certain academic issue he or she may ask via our WhatsApp group' (EDUOFF08, 2024)._ Some teachers used WhatsApp to conduct video call, chatting, or sending some academic videos aimed at expanding their academic knowledge or skills. Similar study by Umarwan (2023) recommended that effective communication in teaching includes, the use of effective communication media, such as WhatsApp, to facilitate the delivery of information, motivate students, and enable direct interaction through video calls.

1.9 Conclusion
After collecting and analyzing data, the study concluded that, selection of effective communication channels affects the outcome of TCPD implementation in secondary schools in Nyamagana District. There is no interrogation of the knowledge and skills from one secondary school to another, TCPD is limited within the secondary school under same teachers with same knowledge sharing. Participatory communication approach under TCPD is done via different communication channels like dialogue, seminar, meetings, written messages/memo, PEPMIS, WhatsApp, you tube and email. But not all secondary teachers were effective in applying these communication channels.

1.10 Recommendations
It was recommended that, additional efforts from the government are needed since some of the communication channels in the implementation of MEWAKA needs access to internet network. Also, there is a need for the government to provide functional computers, projectors, Television sets in the staff room which can be used in a group learning and to access online learning materials.

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