

Teachers' Views on Use of ICT in Facilitating Teaching and Learning in Tanzania

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Abstract: Teachers' views replicate readiness and attitudes which could be taken in introducing any new education intervention in this instance ICT use in facilitating teaching and learning. Tanzania Secondary School teachers had different views greenlight the acceptance or rejection of ICT in classroom practices. Explanatory descriptive design was followed in conducting the study at Kibaha district, Pwani Region, Tanzania. Interpretivist paradigm was followed in getting the meaning through interpretation of teachers' opinions as was originated from themselves. The study elements involved 25 teachers' selected using probability simple randomly technique to form 5 groups each comprised 5 elements to collect qualitative data which were thematically analyzed.

Key Words: ICT, teachers, students, classroom.

I. INTRODUCTION

Tanzania ICT policy for Basic Education possessed objectively intentions (URT, 2007) recognized the use of technologies as a main pedagogical tool for teaching professionalism thus necessitated the government to restructure pre-service teachers' training curriculum and incorporated ICTs among core subjects. However successful integration of ICTs in pedagogical practices are embraced in hands of teachers who could view technology differently as Tyack and Cuban (1995) mentioned views of being ignored are merely symbolic gestures; viewed as imposed from outside without their input or participation; viewed on ICTs are explicit connections to instructional practice e.g. focus on hardware rather than their relationship to pedagogy. Cohen and Hill (2001) asserted that teachers viewed are not given opportunity to learn the policies, instructional implications and lacked program and resource alignment to the policies' intentions. On top of that, Piaget (1967) acknowledged new experiences are gained through accommodation and assimilation: for example teachers assimilate new ICTs experiences being incorporated with already existing curriculum framework occurred as their experiences are aligned with internal representations of the world, but may also occur as a failure to change a faulty understanding.

Chilimo (2009) considered ICTs as tools for socio-economic development and sustainable livelihoods. In the education system teachers are main actors in the knowledge construction process, therefore, should be eagerly to change from traditional to technology mediated teaching and learning procedures and approaches (Kelly and Tangney, 2006). Furthermore, Crews (2000) insisted as use of ICTs continued to increase in the society teachers had to be prepared, create

readiness, build positive attitude towards use of technologies in and out of classroom; teachers need to alter their mindsets from teaching without to use of technologies to encounter education shortfalls and improving education quality (Toure, 2008) inquisitively relied on blended strategies, methods and approaches of teaching and learning process.

Besides, Friedman (2006) ascertained computer applications, mobile technologies, recording and communication systems had become essential and relevant items in teaching and learning. Teachers are influenced by professional and classroom pedagogical reformation in accommodating new technologies and scientific skills articulated to expose students in 21st century skills and knowledge (Hamidiet al., 2011). Importance of technologies to students is apprehended on ability to remove space, place, creation of autonomy (Shah, 2013), foster long-learning, remove abstracts (Cavaset al., 2009) and make learners active (Steel, 2009) through digitalization. Prytherch (2000) expressed ICTs comprised digital networks with new opportunities for teaching, learning, and training through provision of digital content. Lu, Hou, and Huang (2010) addressed on power of technologies in creation of active involvement in pedagogical processes, influence education qualities with advanced teaching methods, improve learning outcomes and enable education reformation and better management of education systems (UNESCO, 2009).

1.1 Statement of the Problem

In the Tanzania context, secondary school classrooms are communities for constructing knowledge, skills, and competences to students. Secondary schools are units for mindsets and cognitive construction responsibly vested to teachers to shape students. The students graduating secondary education are awarded recognized certificate which later works as pre-requisite requirement for employment, particularly in public sectors. Challenges on mismatches between practice and job requirements to fit digital knowledge and industrialization market are experienced although Tanzania Vision 2025 delineated the role of education being strategic change agent in transforming the society from depending on commodity to knowledge economy. The education policy (ETP 2014) addressed potentialities of using ICT as pedagogical tool to encounter existing education challenges. This study embarked to assess secondary schools teachers' views on use of ICT to facilitate teaching and learning at Kibaha District, Tanzania.

1.2 Purpose of the Study

The main purpose of the study was to assess teachers’ views in classroom practices basing on areas of values, pedagogy, social aspects, accessibility, and competencies.

II. METHODS AND MATERIALS

The explanatory descriptive design was followed in conducting the study at Kibaha district, Pwani Region, Tanzania. Interpretivist paradigm was followed in guiding the interpretation of teachers’ opinions as was originated from themselves. The population comprised of 100 classroom teachers drawn in 3 secondary schools from which the sample elements of 25 were selected using probability simple randomly technique (Saunders *et al.*, 2014) to form 5 group discussions each comprised with 5 elements (Creswell, 2003; Patton 2000).The group discussion was the best method complied with to provide teachers opinions due to apprehended assumptions that human cognitive behaviors are not easily observable but could be expressed or viewed through actions(Denzin and Lincoln, 2008). The qualitative data were collected, recorded, transcribed, coded, thematically and reflexively analyzed then presented using reflective narratives to understood teachers’ knowledge, information, likes and dislikes, attitudes, thinking and beliefs irrespective to use of technologies in facilitating classroom teaching and learning (Flick, 2007).

III. RESULTS AND DISCUSSIONS

The results and discussions on teachers’ views on the use of ICTs for facilitating teaching and learning are presented based on ICT as pedagogical tool, views on teachers and students to use ICTs in classroom activities and outcomes.

3.1 Teachers Views on ICT as a Pedagogical Tool

Culturally tool is not just a device for facilitating human activity but is seen as a lens for an individual to create relations with the external world. The constructive use of ICT increased learners’ critical thinking, encouraged students' activities in small groups and cooperation between students and teachers towards transforming education theories into practice. Findings showed teachers’ contradicting views on the use of technology as pedagogical tools based on weighing advantages and disadvantages, as revealed in FGD, emerged themes presented in Table 3.1 followed with narrations.

Table 3.1: ICT as a Pedagogical Tool (n=25)

ICT as a Pedagogical Tool	Agreed Respondents	Disagreed Respondents
Possess solutions for teaching and learning challenges	19	6
Students restrictions to access and use ICTs	23	2
Students navigate in various educational platforms and websites	4	21
Students shared lesson content obtained via ICTs	3	22

Changed teachers’ roles	11	14
Source of subject lesson contents and approaches for content delivering	17	8
Devices are expensive	19	6
Devices ownership needs teachers’ prioritization	21	4
Increased workload	23	2
Limited allocated subject lesson time for using ICTs in classrooms	20	5

SOURCE: Field Data, 2019.

The findings showed there are teachers’ possessed positive views on values of technology as pedagogical tools for example helped in changing roles; possession of solutions for education challenges; source of content and exposed to various approaches useful to enrich teaching and learning. Discussion on the tool was guided by the question “*What are your views on ICT as a mediating tool for teaching and learning?*” Findings affirmed:

It is assistive especially when we face difficulties; the Google search engine brought changes in teaching and learning, good materials are found via the internet and it is easier to cover the syllabus without struggling much. Though prohibited sometimes chances are given to students to learn from various platforms in educational websites and share together knowledge acquired. Google search had a lot of information and teachers are no longer the sole proprietor of teaching and learning content(s). (Focus Group Discussion, July 2019)

There are circumstances where using ICTs changed teachers’ roles although the full attainment of this character in classrooms does not yet take place to students as are not provided with ample time to engage in using ICT tools to search for subject learning content implicatively fostered higher-order thinking skills.

ICTs are useful for teachers in solving challenges faced in various steps of teaching and learning in interacting with readily available education platforms; these practices increased comfortability in lesson delivering as was expressed:

Sometimes when we are stuck on what and how to present content materials we go to Google to see if could get clues through what others are saying and how we are doing it. From Google, we got pleasant languages, contents, and approaches for delivering lessons in the classroom. (Focus Group Discussion, July 2019)

ICTs asan instruction tool fit to realize and implement emerging constructivism pedagogies in solving classroom systems challenges faced by teachers, activities, students henceforth attainment of education objectives/outcomes for secondary education.

Teachers as Subjects of using ICTs

However, teachers as subjects in school systems need ICT to support knowledge, content, pedagogies for effective classroom teaching and learning. Despite the ICT tool advantages, the discussion panel guided with the question *what are your views on undertaking and using technologies for teaching and learning?* Delineated:

Though teachers are asked to use technology in classrooms, there is no unified sustainable in-service training program; frequently training is offered under discriminatory aspects of teachers’ teaching subject of specialization; Mathematics and Science teachers are highly favored for ICT in-service training while colleagues specialized in Social Sciences and Languages are always in school. (Focus Group Discussion, July 2019)

Also, the findings presented that teachers are neglecting to encounter costs associating possession of ICT devices with the thoughts that education is becoming expensive for nothing as narrated:

Despite technology advantages in classroom teaching and learning, device, gadgets, and tools are expensive for teachers to hold. Owning a personal laptop is based on teacher’s prioritization most possessed Smartphones whose costs are almost similar to laptops; teachers viewed smartphones as important and missing it means socially locked. (Focus Group Discussion, July 2019)

Use of ICTs tools enabled to change the classroom environment, it demands technological affordances to real-time interactions so as to enrich, promote teachers' and students' social interactions in teaching and learning activities. Findings prevailed that teachers viewed real-time for lesson preparation and allocated classroom teaching and learning is not enough to utilize technologies as was expressed:

Use of technology increased workload for searching, sorting and organizing electronic materials during preparation; the subject located time is 40 minutes for a single period; it is difficult for most of social science and language teachers to utilize technologies because practice shows many languages and social sciences teachers had single periods compared to colleagues science teachers who had many double periods. (Focus Group Discussion, July 2019)

However, the construction of active teaching and learning environment necessitates teachers who are subject in the school system to possess content, knowledge pedagogy and technological skills, knowledge, confidence, and competency to build these components as a whole. The study found that teachers are in need of equitable training as was expressed:

Almost every teacher was exposed to ICT during pre-service professional training because is compulsory course-subject; we were supposed either to pass or clear supplementary in the case failed; most of the teachers crammed the ICT subject content and concepts to pass the examination and not to gain equitable skills useful in the classroom. (Focus Group Discussion, July 2019)

3.2 Teachers’ views on activity mediated with ICTs

In the classroom as a community of practices main tasks and activities are accomplished by teachers for example lesson preparation, lesson delivering and lesson evaluation focused on predefined purposeful actions for transforming cognitive, affective and psychomotor levels of students. Teachers had to decide choose to use technologies in classrooms although lacked experiences, anxiety, technophobic, and encouragement. Respondents during FGD devoted thematic-views on as presented in Table 3.2.

Table 3.2: Teachers’ views on activity mediated with ICTs (n=25)

Teachers’ views on activity mediated with ICTs	Agreed Respondents	Disagreed Respondents
Activity is neat and accurate	22	3
Rise contradictions among education practitioners	20	5
Use of OERs smoothen lesson delivering	19	6
Use of OERs foster students understanding and conceptualization	18	7
Motivate students	21	4
Practices using ICTs in activities facilitates the acquisition of speed	13	12
Activity familiarization needs close supervision with competent leaders	23	2

SOURCE: Field Data, July 2019.

The question of *how does ICTs facilitate classroom teaching and learning activities?* Was posed and respondents mentioned:

Technology is helpful for preparing neat teaching and learning documents such as scheme of work, lesson plan, and lesson notes; in case any mistakes are made there is no need to discard the whole document rather delete or edit a particular portion and continue until the work is finished; Nowadays preparation of teaching documents is no longer tiresome work, we praised technology as it saves time. (Focus Group Discussion, July 2019)

Despite every secondary school teacher being trained to use of ICT in delivering subject content during pre-service professionalism training, findings proved there are conflicting practices among education practitioners leading either to

increase workload or discouraging teachers to use technology despite its advantages, as was lamented:

Bringing technology in practice risen contradictions in the education field as some practitioners do not recognize official teaching documents prepared by ICTs, for example, Education quality assurers demanded handwritten schemes of work, lesson plans, and lesson notes. This discouraged teachers' who prepared documents via computers hence are forced to prepare the same documents twice using handwriting. Therefore teachers denied using technologies to avoid being professionally charged. (Focus Group Discussion, July 2019)

In the mediated classroom, teachers and students' activities are downsized at the same time continue to deploy various technology skills. The study found teachers' viewed that to become competent and expert in using ICTs in classroom activities hands-on practices are essential as cited:-

It was tiresome for most of us to work with Microsoft Office application programs for the first time; we faced difficulties even to drag a mouse; we weren't possessing speed when working with word processing, couldn't use various formulas for different computation using excel and couldn't prepare attractive PowerPoint presentations but now through continuous practicing these programs are familiar and we rank technology in another stage of being very useful, assistive and less time consuming. (Focus Group Discussion, July 2019)

3.3 Students as Objects in using ICTs

Students are object elements of practices in the schools' activity system for whom strategies, procedures, approaches, tools, efforts for teaching and learning activities are designed, directed and implemented to ensure are adjusted intellectually to acquire new knowledge, skills, and experiences. The FGD findings arose themes on the position of students as the object of the school system as presented in Table 3.3.

Table 3.3: Students as Objects of ICTs mediated classroom (n=25)

Students as Objects of ICTs mediated classroom	Agreed Respondents	Disagreed Respondents
Used in Congested classroom	13	12
Derived e-contents needs filtration	17	8
Use of E-learning distort students understanding	19	6
The language used in Videos frustrates students (speed and accents)	12	13
Editing of E-content is important	16	9
Students attentions	18	7
Teachers preparations	17	8

SOURCE:Field Data, July 2019.

Students to be full members of school community teachers and the system had to set a supportive environment including rules, regulations, schedules to enable accessing and use a few available ICT devices and gadgets. The study found despite existing large size/congested classrooms ICTs helped students engaged in teaching and learning activities. The discussion was guided with the question: "How do you consider the use of ICTs for students learning activities?" was mentioned:

It was marvelous to use technology in the congested classroom for the first time, delivering subject-matter content incorporated with illustrative videos and simulations raised students' concentration, motivation, and follow-up in each procedure of classroom teaching and learning activities. (Focus Group Discussion, July 2019)

Also, findings cautioned on needly for teachers to filter content derived from the websites to suit lesson requirement, students' age and context as was mentioned:

E-learning content materials are good to be used but teachers should bear in mind the contexts across the syllabus; other material especially those found in the video could distort students; make them puzzled due to unfamiliar language accent used. Editing the background voice to suit familiar students' accent is vital to facilitate understanding. (Focus Group Discussion, July 2019)

In a few secondary schools there are teachers who are objective to use ICTs to design lesson delivering activities, use technology mediation tools to foster students' learning activities as was delineated:

Teaching using ICTs draws student's attention, mostly concentrates on lesson proceedings, collaborate, discuss and communicate to share knowledge of lesson subject matter; teachers' responsibilities are to prepare activities fostering these skills and manage classroom proceedings. (Focus Group Discussion, July 2019)

3.4 Rules and Regulation in facilitating the use of ICT in teaching and learning

School system elements had demarcated socio-cultural boundaries differentiating who is abided and squeezed by which set of rules in performing identified activities. The findings portrayed the presence of rules, regulations and strong punishments to the students found using some ICT devices without permission as appears in Table 3.4.

Table 3.4: Rules influenced the use of ICTs (n=25)

Status of Rules	Presences of rules	Presence of Punishments	Students ICTs exploration	Use of ICTs out of schools context
Number of respondents	25	24	21	25

SOURCE:Field Data, July 2019.

Students tend to violate the use of technologies and concentrated on unwanted and non-academic productive issues including watching videos via YouTube, concentrates on Facebook and Twitter chatting and sharing photos and status updates. Findings obtained from the item *do rules and regulations foster elements in the school community to use ICTs for teaching and learning?* Revealed the circumstances as expressed:

Students are strictly forbidden to use and hold technological devices such as smartphones, Ipads, Ipods, and laptops and if found are expelled from school; currently, ordinary secondary school students are not allowed to use even un programmed calculators in subjects possessing calculations contents example Mathematics, Physics and Geography. (Focus Group Discussion, July 2019)

Mismatches between social-cultural practices, contexts, education rules and regulations hindered students to use some technologies; strictness leads zero students’ technology interaction time. Findings demonstrated that even though students are restricted but are good in technologies as was revealed:

Students are very good in exploration, could be familiar and competent with ranges of software, tools, and apps even without assistance from anyone; awareness is important than restriction as the current situation proved secondary school leavers (students) couldn’t get their national examination results, send application for tertiary education, get to know form five selections and respective schools joining instructions without using ICTs. (Focus Group Discussion, July 2019)

3.5 Division of Labour in facilitating the use of ICT in teaching and learning

Effective utilization of ICT in classroom teaching and learning is associated with good leadership and supports to drive designed technology plans the emerged themes derived during the discussion session are shown in Table 3.5.

Table 3.5: Division of labor in supporting the use of ICTs (n=25)

Division of Labor	Number of Respondents
Visions from Heads of Schools	23
Financial Support	21
Moral Support	18
ICT Material Support	25

SOURCE: Field Data, July 2019.

Findings presented the need for heads of secondary schools to bear responsibilities of supervising technology up-take as was mentioned:-

Changes begin with heads of schools as they are in interventional units of practice, are immediate supervisors

who are supposed to wear shoes of being change agents, set ICT articulation vision, strategies, monitor, evaluate, encourage and offer all sorts of support. Heads of schools are technophobia they don’t take charge for technology integration; sometimes it happened teachers faced challenges in the process of undertaking various stages of classroom activities integrative with ICTs and head of school could neither support nor rescue; our views are teachers still need continuous follow-up, motivation and training until becomes fully competent and conversant. (Focus Group Discussion, July 2019)

Findings showed teachers’ viewed lack of administrative support and long-service experiences being among reasons for rejection of technologies uptake as was acknowledged:

Our school is well equipped; most of the teachers are competent and conversant to use various ICTs application programs but are inactive due to a lack of administrative emphasis to replace traditional mode with technology-mediated practices. (Focus Group Discussion, July 2019)

There are long-termed-service teachers, who don’t see the value of ICTs; they declared technology is for young generation teachers, to those teachers’ traditional approaches remained implicit behavior and are confident and comfortable with it. (Focus Group Discussion, July 2019)

The study delineated needy for teachers’ to change the mindset from traditional teaching styles to technology acceptance through frequent encouragement, support, and motivation as was mentioned:

Through gradual interaction with technology and watching online illustrative videos and frequently discussion interactions in platforms we shaped understanding, developed competences and became conversant in the utilization of available application software, tools, and subject lesson contents compared to before. (Focus Group Discussion, July 2019)

School systems had predefined responsibilities, interrelation and interdependence activities distributed vertically and horizontally among its members to reach intended educational outcomes. Role of ensuring integrative curriculum with the use of ICT as a pedagogical tool is taking place in classroom and schools as a whole is vested to heads of schools. The discussion in answering the question *what are your views on the division of labor towards the use of ICTs in classroom teaching and learning?* Showed differentiation among schools heads in visioning prosperity of ICTs in respective schools as was delineated:

Our headmaster is anxiously to change our school being ICT use excellence center by initiating every teacher to use technology in classroom activities; he always strived to search for stakeholders in assisting

vision persistence. (Focus Group Discussion, July 2019)

The infancy stage notion on the use of ICTs impacted heads of schools not to be committed to undertaking costs associating with routine operations, therefore, arise conflicts within the school system elements. The situation makes teachers feel burdened to undertake corresponding costs from their pockets rather than administrative responsibilities as was expressed.

It happened teachers need internet bundles and our head of school denied to purchase, therefore teachers are consciously found obliged to buy airtime vouchers from personal income for that matter most of the teachers dislike to use the internet for surfing and getting online teaching and learning materials. (Focus Group Discussion, July 2019)

3.6 Outcomes of using ICT in teaching and learning

Schools as a social-cultural activity system had goals for improving classroom pedagogical practices (activities) to favor students learning incriminated within lesson objectives to foster the accomplishment of curriculum objectives (outcomes). Themes pop-up from the FGD session outlined the use of ICTs is assistive in attainments of classroom outcomes as Table 3.6 showed.

Table 3.6: Students learning outcomes (n=25)

Learning outcomes	Students Retrieve content	Students accommodate content	Teachers evaluate lesson	Students demonstrate learned content
Agreed opinions	17	12	10	11
Disagreed opinions	8	13	15	14

SOURCE: Field Data, July 2019.

The findings obtained after posing the question of *how does ICTs foster the attainment of teaching and learning outcomes?* Exposed use of ICTs enable acquisition of learners needs as was declared:

Using ICTs in classrooms helped students to master abstract subject content knowledge; enabled them to retrieve knowledge accommodated in long term memory whenever asked; fostered contextualization of learned lesson concepts, students are no longer cramming lesson content delivered in classroom activities. (Focus Group Discussion, July 2019)

In addition, the distance between teachers and students is replaced with ICTs thus increased contact time whenever they felt too. The findings recited:

The use of ICTs helped students to capture concrete and transfer abstract learned knowledge to long term memory due to creating a friendly and virtual learning environment; students recalled and

retrieved learned subject content when asked at any time. (Focus Group Discussion, July 2019)

IV. CONCLUSION

Teachers view differently on the power of ICTs in facilitating teaching and learning. Those who positively viewed ICT as useful ascertained that is assistive in changing classroom environment, change teachers and students roles and through offering various potentialities including creation virtuosity, facilitate the elaboration of difficult concept. On the other hand teachers who negatively viewed ICTs being not useful delineated on increased workload, presence of un-unified and unsustainable training, limited lesson time, gadgets and tools being expensive to own, and needs of other skills such as scanning, searching, sorting and content organizing skills.

V. RECOMMENDATIONS

Recommendations are made based on the findings as follows:

- a. The Government is obliged to create a conducive and supportive environment for teachers and students to use few available gadgets and tools to facilitate teaching and learning and eradicate faults including rules, regulations, conflicts among education practitioners for smooth uptake of technological practices in classroom settings.
- b. Heads of schools as chief immediate curriculum implementation supervisors should strive to create a workable digital culture in respective schools stated in mission and vision.
- c. Teachers’ readiness is important to be cultivated within themselves to overcome negativity attitudes and norms hindered the full acceptance of technologies in classroom.

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