Unexplored Potential in Online In-Service Teacher Professional Development towards Teaching with Technology: Teacher Perceptions, Challenges and Spill-Over Effects in Kenya

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ARTICLE INFO	ABSTRACT
Published Online: 30 December 2021 Corresponding Author: **Bernadette K. Kiarie**	Online courses can provide a worthwhile alternative to on-site Teacher Professional Development (TPD) especially in developing countries such as Kenya. This study was based on a training intervention which helped teachers to cope with the sudden turn of events that came after the government closed schools as one of the COVID-19 containment measures. A private university in Kenya designed and launched an online in-service course to respond to the needs of teachers amidst the pandemic. The university's Teacher Enhancement Programme (TEP) realized that the training proved to be a game changer for the group of teachers who participated. The online training intervention enabled the teachers to get in touch with learners who were otherwise inaccessible. This study is a descriptive survey with both quantitative and qualitative data from a post survey questionnaire and a focused group discussion. The outcomes of the study indicated that online teacher enhancement programmes are an uncharted potential option for TPD even though there were challenges. The training intervention boosted teacher confidence in using technology to teach, and encouraged them to venture and discover more technology-based teaching tools on their own. The training intervention also led to improved teacher performance in the employment of emergency remote teaching within their learning institutions.

INTRODUCTION

Technological development has affected educational systems in general and professional development training programmes in particular (Wassenman & Midgal, 2019). Teachers, like other professionals, need to stay informed about new knowledge and technologies (National Research Council, 2007). Professional Development (PD) helps teachers to upgrade their knowledge and skills which in turn improve learner achievements. Teacher Professional Development (TPD) will always be, chiefly, about improving learner experiences (Brook & Gibson, 2012). According to a study done by Niess and Roschelle (2018), teacher professional development is essential in helping teachers utilize technologies in guiding the learning of their students. Teacher PD goals can be achieved through an online environment (Hodges, Roy & Tyminski, 2018). Online modes of teacher professional development have gained prominence in recent years for their perceived potential to transform and expand access to high-quality resources and experiences that positively impact teachers' knowledge, beliefs, instructional practices and ultimately student learning (Community for Advancing Discovery Research in Education, 2017). In a research done by Dolighan and Owen (2021), it became clear that TPD and ongoing professional learning will have to adapt, to better support new realities such as Online Teacher Professional Development (OTPD).

Characteristics of online teacher professional development
Online Teacher Professional Development (OTPD) courses allow a large audience of learners to receive high quality education on a wide variety of subjects (Wassenman & Midgal, 2019). OTPD has the potential to offer exposure in a more heterogeneous group of teachers, who offer a wider variety of perspectives and approaches than is typically the case in face-to-face TPD in one's local area (Community for Advancing Discovery Research in Education 2017). Online Teacher Professional Development (OTPD) has the potential

to alleviate many professional development concerns through flexibility, versatility and levelling the playing field for teachers (National Research Council 2007) no matter their physical location. Technologies have been advancing rapidly, allowing for video conferencing and shared screens and whiteboards such that all face-to-face settings can easily be incorporated in OTPD (Community for Advancing Discovery Research in Education, 2017). Technology has the capacity to replicate anything we might normally do in a face-to-face environment (Ross, 2011).

With the evolving trend towards online learning environments, teacher educators are examining how they might take advantage of the affordances inherent in online learning such as anytime-anywhere learning (Martin & Polly, 2017). More than a decade ago, the American National Research Council (2007) established that online courses can deliver what teachers need, when they need it and where they need it. Moreover, OTPD learning environment enables teachers to engage in professional learning in ways that are less feasible in face-to-face contexts (Community for Advancing Discovery Research in Education, 2017). OTPD can offer low risk methods of participation and provide mechanisms for feedback that is thought-provoking for those receiving or giving it.

It is true that learning how to use new technology to teach is an individualized activity. However, teaching with technology requires interaction and support from fellow teachers, students and school administration (Belt & Lowenthal, 2020). Establishing a community of teacher-learners during OTPD provides an important tool for supporting those involved to communicate and interact through discussions and collaborative tasks (Hodges, Roy & Tyminski, 2018). Online platforms support and encourage teachers to learn collaboratively allowing them to network and promote networks where they can access support towards their teaching (Keengwe & Blankson, 2013).

Teacher perceptions towards in-service online professional development

Research shows that teachers have a general positive attitude towards professional development. Those who took part in this study did so voluntarily out of intrinsic motivation toward self-improvement, as well as the need to reach out to their students during difficult times. According to the American National Research Council (2007), teachers insist that the most effective development programs they have experienced have been self-initiated. In their study, Parsons Et.al. (2019) concluded that teachers who took part voluntarily found professional development more beneficial in their teaching and a majority of teachers found online professional development experiences helpful. Teachers are willing to participate in OTPD when it addresses a common and specific topic that is crucial to students' progress (Brook & Gibson, 2012).

A study done by Wassenman and Migdal (2019) on teachers' attitudes towards online training courses concluded that, there are four things that affect perceptions. The four things were; communication between learners and facilitators, social connections during learning, ability to voice opinions and cooperation in the learning process. The two researchers modelled that facilitators in OTPD can answer to the needs of individuals despite the lack of physical presence. Roy and Boboc (2016) did a study on the needs of online teachers during professional development and found that; teachers receive OTPD well if it will equip them to be better online teachers. They also saw that perception of OTPD becomes better if teachers see how online tools can enhance learning experiences for their students. In their study, Alzahrani and Althaqafi (2020), showed that teachers noted a positive change in their teaching after participating in online courses. This made teachers' attitudes towards OTPD courses positive.

Challenges of online teacher professional development

A general challenge for OTPD is the fact that the in-service teachers did not receive training to teach online. From another perspective, there is a general dearth of research on the effectiveness of OTPD combined with the fact that many teachers are unaware of these new technologies and are not included in the discussions about their future (National Research Council, 2007). According to Community for Advancing Discovery Research in Education (2017), there is still a lot to be discovered about the effectiveness of OTPD programmes and the factors that contribute to their success. This study explored opportunities for professional development of teachers, tailored towards teachers' current needs.

There is a need to equip teachers with an understanding of the nature of online learner-teacher interaction and challenges that arise due to the distance caused by the medium of instruction (Roy & Boboc, 2016). Another thing that damages OTPD is a sense of not physically being able to interact with the people one deals with online. Teachers do not have enough prior experience as digital learners and OTPD positions them as such (Hodges, Roy & Tyminski, 2018). Amidst all the difficulties, ICT infrastructure to enable teachers engage in OTPD is limited in many ways.

The challenge of initiating and sustaining teacher engagement is not unique to the online context, but can be exacerbated and take on new dimensions in online settings (Community for Advancing Discovery Research in Education, 2017). This can be made worse by technical challenges that divert teachers' attention to the technology tools used in OTPD, and away from the main focus of the course. The teachers involved in this study came on board of their own volition, but some challenges included: lack of access to devices for the training, lack of basic knowledge and access to teaching technologies, lack of financial support to undertake the training offered and changing the status quo, beliefs and practices.

THEORETICAL FRAMEWORK

Many in-service teachers have mastery of the content that they have been teaching over a number of years in the face-to-face teaching and learning environment. Most in-service teachers also have the pedagogical knowledge and skill that they employ as they teach in the face-to-face learning environment. Whereas the pedagogical and content knowledge and skills of many in-service teachers is unquestionable, it can be a daunting task to teach with technology under emergency circumstances such as the COVID-19 pandemic which required everyone to stay at home. Under normal circumstances teachers have never been mandated or required to teach with technology since technology is a tool that a teacher may or may not choose to use.

Within the context of COVID-19, the use of technology by teachers seemed inevitable if any teaching and learning was going to take place. Having to transition to a new teaching and learning environment (Dolighan & Owen, 2021) was a daunting task for teachers everywhere. This study therefore used the Technological Pedagogical Content Knowledge (TPACK) theoretical framework. The framework emphasizes that technological knowledge is as important as the pedagogical and content knowledge towards teaching any subject effectively with technology. The framework calls for seamless interaction between pedagogical knowledge, content knowledge and technological knowledge for effective teaching.

OBJECTIVES OF THE STUDY

The main objective of the study was to explore new possibilities of in-service teacher professional development in Kenya. The specific objectives were:

1. To establish the range of participants for the first online in-service training intervention.
2. To establish teacher perceptions towards online in-service teacher professional development.
3. To identify the challenges experienced during online teacher professional development training.
4. To determine possible positive spill-over effects of the online teacher professional development interventions.

RESEARCH METHODOLOGY

The study adopted a descriptive survey research design. Data was analyzed to report the views of the participants as given during data collection. The study used both quantitative and qualitative approaches in data collection and analysis. The participants in the study were teachers who received online training on teaching with technology from a Teacher Enhancement Programme in a Kenyan private university. An online questionnaire was sent to all the participants in the training and 87 of them completed and submitted it for the study. The questionnaire had been constructed from scratch and had three parts mirroring the first three objectives in the study. A focus group of 42 teachers gave feedback on the training in an online discussion forum. The fourth objective was addressed by data from the focus group. The participants in this study represented 18 counties in Kenya. The participants completed a pre-course questionnaire and a post course questionnaire to provide data for the study.

RESULTS AND DISCUSSIONS

To undertake this study, the Teacher Enhancement Programme of a private Kenyan university designed an online course titled 'Foundations of Teaching with Technology'. The course took place during the COVID-19 pandemic. Due to the prevailing circumstances at the time of the study, the training was done online. Teachers were invited from online communities through the facilitators of the course. The aim of the course was to quickly enable teachers from any part of the country to get in touch with their students following the sudden closure of face-to-face learning in schools. However, the aim of the study was to establish the viability of OTPD and see its potential in developing countries such as Kenya. Frequencies and percentages were used to highlight the data reported in this study.

Range of participants for the study

The first objective of the study was to establish the scope of the participants in three classifications of school category, the teaching level of the participants and the part of the country where they came from. Schools in Kenya are categorized as public or private. There are four levels of education in the 8-4-4 system of education in Kenya which are; pre-primary, primary, secondary and tertiary. The country has 47 counties.

School category

Table 1.1 School category of respondents

School category	Frequency	Percentage
Public school	59	67.8%
Private school	28	32.2%
Total	87	100%

A majority (59, 67.8%) of the teachers who responded to invitation to the course, registered and answered the questionnaire after the course, were from public schools as shown in table 1.1. This intimated that public school teachers were more affected during the closure of schools and were eager to find ways of connecting with their learners. This

concurred with what Brook and Gibson (2012) found, that teachers are willing to participate in OTPD when it addresses a specific area crucial to their learners' progress. Teachers from public schools had an immediate and urgent need to get in touch with their learners, and this training intervention was going to provide an opportunity to learn how to do so.

In Kenyan public schools, standards of teacher professional development may be set up by the Ministry of Education and/or the Teachers' Service Commission (TSC). However, unprecedented circumstances such as those brought about by the COVID-19 pandemic called for non-traditional ways of conducting teacher professional development from various

stakeholders such as universities and colleges. Teachers took the opportunity to train because the private university involved offered a semblance of formal training that would be acceptable and verifiable in future if need for that were ever to arise.

Teaching level

The second classification of the participating teachers towards the first objective of establishing the diversity of the participants was the teaching level. Table 1.2 shows the distribution of the participants in the four levels of pre-primary, primary, secondary and tertiary levels.

Table 1.2 Teaching level of study participants

Level	Frequency	Percentage
Pre-primary	4	4.6%
Primary	11	12.6%
Secondary	70	80.5%
Tertiary/University	2	2.3%
Total	87	100%

A majority (70, 80.5%) of the participants in this study were secondary school teachers. These teachers perceived that OTPD and in particular the course on teaching with technology was going to expose them to online tools that would enhance learning for their learners as was seen by Roy and Boboc (2016) in a study they did. It is likely that secondary school teachers saw the possibility of their students

being accessible through ICT gadgets such as smartphones which can easily be used as teaching and learning tools.

Counties represented in the training intervention

In the third place, towards establishing the range of the participants, teachers were asked to indicate their counties and the summary is shown in table 1.3 as follows:

Table 1.3 County representation in the training intervention

County	Frequency	Percentage
Kitui	33	37.9%
Nairobi	24	27.6%
Kiambu	7	8.0%
Nakuru	4	4.6%
Mombasa	3	3.4%
Meru	2	2.3%
Trans-Nzoia	2	2.3%
Embu	2	2.3%
Machakos	1	1.1%

Nyeri	1	1.1%
Muranga	1	1.1%
Narok	1	1.1%
Kajiado	1	1.1%
Kericho	1	1.1%
Kakamega	1	1.1%
Bugoma	1	1.1%
Kisumu	1	1.1%
Kisii	1	1.1%
Total	87	100%

Kenya has forty seven counties. Worth noting is that the Teacher Enhancement Programme – which carried out the training intervention in this study – had conducted training in three of the counties before. The OTPD course in this study got participants from eighteen (38.30%) counties out of the forty seven counties in the country. There was an increased diversity in the participants in terms of where they came from. This proved that OTPD has the ability to transcend physical boundaries and bring together heterogeneous groups of teachers (Ross, 2011; National Research Council, 2007; Community for Advancing Discovery Research in Education, 2017). Had the training been done physically, it would not have been possible to bring together teachers from all these counties at the same time. This study showed a clear possibility that teachers from diverse counties in the country could learn a common course and benefit from it in a similar manner.

Kitui County (33, 37.9%) – where TEP had successfully run other interventions before this one – had the highest number of participants in the OTPD course under study. However, it was worth noting that all the participating teachers quickly formed a learning community where they continued helping each other in their teaching and learning. The learning community was established in two computer applications where peer-teaching – through sharing experiences and challenges – took its natural course, transcending all barriers.

Quoting earlier studies (Belt and Lowenthal, 2020; Hodges, Roy & Tyminski, 2018; Keengwe & Blankson, 2013), teaching with technology requires formation of teacher communities during OTPD to provide interaction and support among the teachers who are really learners in such cases.

Perception of participants towards OTPD
The second objective of the study was to establish the perceptions of the participants towards OTPD. The OTPD course done in this study was through free, simple video conferencing applications and a free, simple learning management system. Zoom and Google classroom were the main online tool and platform used to support both synchronous and asynchronous learning activities. Time was taken at the beginning of the training intervention to make the participants comfortable with the technology tools that were to be employed during the training. The tools included their own devices such as laptops and smartphones so as to help them navigate the software used. The expectation was that teachers would use the same tools with their learners to teach with technology during the COVID-19 pandemic. To establish dispositions of participants towards OTPD, teachers were asked to rate various aspects of the training intervention they had received. Their responses are summarized in table 1.4.

Table 1.4 Rating of the training intervention by teacher participants

Aspect of course/Rating	Excellent		Very good		Good		Average		Poor	
	f	%	f	%	f	%	f	%	f	%
Clarity of content delivery	55	63.2	32	36.8	0	0.0	0	0.0	0	0.0
Pace of content delivery	42	48.3	36	41.4	9	10.3	0	0.0	0	0.0
Facilitator preparedness	69	79.3	17	19.5	1	1.1	0	0.0	0	0.0

Answering of questions	49	56.3	34	39.1	4	4.5	0	0.0	0	0.0
Level of participation	11	12.6	51	58.6	24	27.6	0	0.0	0	0.0
Follow up assignments	23	26.4	53	60.9	11	12.6	0	0.0	0	0.0
General course administration	57	65.5	29	33.3	1	1.1	0	0.0	0	0.0

Teachers were asked to rate the clarity of the content delivery as it was done during the OTPD course that they undertook. They rated the course content delivery as excellent (55, 63.2%) and very good (32, 36.8%). Thus teachers reported that the content was presented in an appropriate sequence and with clarity to enhance their understanding. This means that the facilitators passed on knowledge and skills intelligibly. This was encouraging towards OTPD being a viable option in general TPD in the country.

When teaching online, it is advisable to pass on content a little at a time, making sure that those learning internalize a concept before embarking on the next one. This was generally practiced by the facilitators of the OTPD intervention in this study. The teachers were asked to rate the pace of content delivery during the course. Some (42, 48.3%) indicated that the pace was excellent, another group (36, 41.3%) indicated that the pace was very good and a lesser group (9, 10.3%) indicated that the pace was good. All participating teachers, therefore, seemed satisfied with the pace of content delivery. Once more showing that OTPD, where content delivery is in line with online teaching pedagogic practices, is indeed a viable option in in-service TPD.

Participating teachers in the study were further asked for their opinion on facilitator preparedness. A majority of them (69, 79.3%) indicated excellent preparedness of the facilitators. Another group (17, 19.5%) rated facilitator preparedness as very good and only one said that facilitator preparedness was just good. Teachers can be harsh critiques of others who teach because they know how it should be done well. However, in this study they rated those who taught them quite highly. Teachers appreciated the work that the facilitators did during the OTPD in terms of lesson preparation. OTPD requires trainers to be thoroughly prepared to avoid time wastage. Furthermore, in the OTPD there were two facilitators online at any given time and this proved to be very useful in meeting the participants' needs.

In the OTPD undertaken in this study, there was a high level of facilitator-teachers interaction. Teachers asked questions and they received answers from the facilitators. To find out whether the teachers were satisfied with the answers they received during the course, they were asked to rate answering of questions by facilitators. A majority (49, 56.3%) indicated that the answering of questions was excellent. Another group (34, 39.1%) said that the answering of questions was very good while a few (4, 4.5%) rated it as good. This showed that in spite of the course being conducted online, all questions and clarifications were well taken care of just as the case would be in a face-to-face course. This agreed with what Ross (2011) found, that technology has the capacity to replicate anything we might normally do in a face-to-face environment.

OTPD can offer low risk methods of participation and provide feedback mechanisms that are thought provoking for those giving and those receiving it. Teachers were asked to rate their own participation during the training intervention under study. Although the teachers had freedom to choose different ways of actively participating in the course, only a few (11, 12.6%) felt that their participation during the course was excellent. However, a majority (51, 58.6%) felt that their participation was very good whereas another group (24, 27.6%) rated their participation as good. Overall, this rating was positive in terms of class participation. OTPD can effectively provide for participation even when it is done using simple free online tools. Both participants and facilitators in OTPD have to know and allow for different ways of participating.

The course had assignments that the teachers were given to do asynchronously. All participants did the assignments in their own time and the facilitators attended to the submitted assignments. Teachers were asked to rate the follow up of assignments given during the course. One group (23, 26.5% rated assignment follow-up as excellent. The majority (35, 60.9%) rated it as very good and a small group (11, 12.6%) rated it as good. This shows there was a high level of interaction with the assignments both for the participating teachers and the facilitators. Assignments are a form of formative evaluation during OTPD and can indicate the level of success associated with an intervention such as the one in this study.

It appeared that good general course administration provided a conducive learning environment for the participants in this study. A majority (57, 65.5%) of the teachers rated the general course administration as excellent. The rest of the participants, except one, (29, 33.3%) rated the general course administration as very good. It is possible to undertake OTPD seamlessly to the satisfaction of those attending it.

During the focused group discussion held after the training, participants expressed gratitude to the facilitators. They shared how they had gained knowledge and skill during the study intervention. Participating teachers also reported how they were already using the knowledge and skills acquired during the study. Some teachers did not wait for the OTPD

course to end in order to employ what they were learning. For example, four teachers already formed their own online classes with their colleagues and students by the fourth lesson of the training. This was an impressive discovery that the OTPD was exhibiting spill-over effects and being scaled up even before its completion.

Those who took part in this study had positive perceptions towards the different elements of OTPD. The favourable ratings given to the different aspects of the training confirm what Community for Advancing Discovery Research in Education (2017) found in their study that; all face-to-face settings can easily be replicated in OTPD. The favourable ratings also imply that teachers found what was being taught useful for their teaching. Where participants have a positive attitude, it is possible to impart any kind of skill through OTPD.

Challenges experienced during the training intervention
All the teachers who took part in this intervention had face-to-face teaching experiences, but the realization that these teaching skills may not be compatible with online teaching and learning also proved true. For OTPD to be successful, teachers require good Information and Communication Technology (ICT) infrastructure and related generic services. There were a significant number of challenges established in this study as shown on table 1.5.

Table 1.5 Challenges experienced by teachers during the training

Challenge	Frequency	Percentage
Poor internet connectivity	57	65.5%
Hardware device problems	33	37.1%
Software related problems	26	29.9%
Lack of time/busy schedules	25	28.1%
Expensive internet connection	22	25.3%

Poor internet connection was a common challenge for a majority (57, 65.5%) of the participants. Given that the country was on emergency operations and many people were working from home, this was not a strange challenge. The country's internet provision infrastructure had also not adjusted to the increased demand brought about by COVID-19 lockdown and restrictions. Expensive internet closely related to connectivity challenges was expressed by a smaller group (22, 25.3%) of the participants. Wireless Fidelity (Wi-Fi) is not installed in all households in Kenya, so some teachers were using internet bundles sold by telecommunication companies to connect to the internet. This group of participants expressed that bundles were very expensive and were draining quickly during the OTPD.

Hardware device problems came in second place with a group (33, 37.1%) expressing challenges related to the devices they were using in the OTPD in the training intervention. For example, some teachers were using their smartphones during the online synchronous activities such as meetings. Closely related to this were software problems as expressed by a group (36, 29.9%) of the participants. An example of software challenges was where some of the devices would not easily run some of the applications that were being used in the training intervention under study. In such cases, participants had to switch devices and sometimes this involved borrowing devices from family members as was revealed during the focused group discussion. This showed resilience on the part of the participants which is highly required in OTPD circles.

Another problem was lack of time especially to practice and implement the knowledge and skills that were gained during the course. The training intervention in this study took place at a time when schools were closed and so it was not very clear why a group (25, 28.1%) of teachers would lack time. However, the national teacher employer had asked teachers to initiate community learning in their neighbourhoods and this may be what this group of teachers were involved in. lack of basic computer skills before the course and lack of time to put into practice what had been learnt in the course also came across as challenges affecting some of the teachers.

Foreseeable learners challenges by their teachers
OTPD calls for reflection on how what teachers learn will impact those they teach. As teachers went on to acquire knowledge and skills in teaching with technology, they were asked to reflect and foresee the challenges that their learners would encounter if they went ahead to implement what they had learnt in the training. This was important considering that the training was on teaching with technology. Their responses were as seen in table 1.6.

Table 1.6 Foreseeable learner challenges in teaching with technology

Foreseeable learner challenges	Frequency	Percentage
Expensive internet connectivity	72	82.8%
Lack of computing devices for learning	68	78.2%
Lack of parental consent for online learning	19	21.8%
Discouragement due to lost school time	18	20.7%
Lack of time to learn online	16	18.4%
Competition from other online classes	15	17.2%

Other challenges foreseen by the teachers were; misuse of devices, failure to join classes on time and teachers feeling they would fail to convince learners to join online classes. However, despite the challenges cited, 100% of the teachers in the training were willing to do another similar course. As a result of this feedback an intermediate course was designed and more than half the teachers in the first training enrolled for it.

Possible knowledge and skills propagation after the training

Interaction during OTPD together with purposeful instructor facilitation of collaboration can impact how teachers use the knowledge and skills acquired. After the training intervention under study, teachers were asked what they would do with the knowledge and skills acquired and their responses are as shown in table 1.7.

Table 1.7 What teachers would do with the knowledge and skills from the training

What will you do with the knowledge and skills acquired in the training	Frequency	Percentage
Implement it in their teaching	75	86.2%
Advocate for ICT integration in their schools	64	73.6%
Initiate teaching with technology where they teach	63	72.4%
Teach other teachers what they learnt	63	72.4%

A majority (75, 86.2%) of the teachers emerged from the training intervention with a positive attitude towards teaching with technology and they were willing to implement it in their teaching especially because this met their immediate needs under the circumstances (Brook & Gibson 2012). Integrating easy-to-use conferencing tools such as Zoom and easy-to-navigate teaching and learning platforms such as Google classroom can provide teachers with immense opportunities to learn even as they use these in their own practice to cement what they have learnt.

A group of participants (64, 73.6%) clearly indicated that they were going to be advocates of ICT integration in teaching and learning in the schools where they taught. Another group (63, 72.4%) of teachers said that they would initiate teaching with technology in their schools when schools re-opened. And yet others (63, 72.4%) reported that they would teach others what they had learnt. This showed that they understood the fact that, if they had been integrating technology in teaching and learning before COVID-19, they would have been better

placed to teach remotely when the lockdown was implemented. The same position was brought to the limelight during the focused group discussion after the training intervention.

In the focused group, an amazing discovery that teachers were already using what they had learnt in the OTPD course to teach remotely was made. The teachers were also training their colleagues using the same tools that were used in the OTPD course that they undertook. This proved that they had a positive outlook of what they had received and were propagating it. This also indicated that the OTPD was actually scalable to the whole country grounding the importance of this study.

CONCLUSION

The results of this study indicate that it is possible to credibly conduct online in-service teacher professional development courses in many areas. Whereas this study undertook training to help teachers teach with technology, it shows that teachers

are ready for different courses in other areas such as guidance and counseling, classroom management and school leadership among other areas of professional development. OTPD can equip intrinsically motivated teachers just like any face-to-face training.

RECOMMENDATIONS

Teachers have a low threshold of computer skills. It is therefore important for teacher employers to sensitize and facilitate a way in which teachers can acquire personal technological devices to increase the possibility of accessing online teacher training and also increase the possibility of using such devices for teaching and learning purposes. When teachers are familiar with technological devices the chance that they may use them in teaching and learning environments is greatly increased.

Limitation of the study

The teachers who took part in this study were exposed to one online training intervention. They registered for it voluntarily depending on their needs at that time. The training was also done at a point of need which made the teachers intrinsically motivated to undertake the course. It may not be possible to generalize the study to all the teachers in the country.

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