

TRAINING IMPACT OF ICT TOOLS ON THE PROFESSIONAL DUTIES AND DEVELOPMENT OF SECONDARY SCHOOL EDUCATORS IN MAURITIUS

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ABSTRACT

The use of Information and Communication Technologies (ICT) has influenced almost every aspects of our life – the household chores, education, recreation, entertainment, finance, and healthy living. Its impact on formal and informal education is widely recognized and ICT is being adopted by countries as an essential intervention in its education system. The Government of Mauritius has introduced the use of ICT tools and applications into the secondary school education, as part of its agenda of making the country, the cyber-island of the Indian Ocean. In order to find out the impact of ICT training on the professional duties and development of secondary school educators in Mauritius, a pretest-posttest experimental design was used in the study. The secondary school educators were given training on ICT use for about a month while they were in service during their scheduled free time and school holidays. The ICT training components include tools like use of desktop/laptop/tablet computer, email, internet, scanner, LCD projector, interactive whiteboard, YouTube, web access, online learning platform, etc. Their use was related to various teaching-learning activities including preparing lesson plans, laboratory work, examination, curriculum, and course delivery. The sample comprised of 538 secondary school educators drawn from the different schools spread across Mauritius selected through stratified random sampling method, where each school was the stratum. A comprehensive questionnaire comprising various questions on ICT familiarity and use was administered to the sample prior to the training and after the training. The performance scores of the sample before and after training were compared statistically to find out the impact. The results of the study revealed that training in ICT tools application has a considerable positive impact on the professional duties and development of secondary school educators in Mauritius.

Keywords: Professional Development, Professional Duties, Secondary School Educators, Teachers, Impact of ICT Training.

INTRODUCTION

With the advent of technology and cyber networking, the world is seen as a global village and this has impacted all aspects of our life-the way we live, learn, assimilate, memorise, recall, work, entertain, study, and discover new things. The new generation students in Mauritius are flooded with complex gadgets, electronic games, an overflow of information, experiencing much engagement in contrast to the past generations who had simpler lives with creativity, traditional games, limited information, and

less stress. Along with the change, the education system is challenged. As rightly put by Prensky (2001), our students have changed radically. Today's students are no longer the people our educational system was designed to teach. In response to this new challenge, the Government of Mauritius together with the Mauritius Institute of Education, in collaboration with the Private Secondary Schools Authority (PSSA) is working together to bring about changes in the education system to reflect the new era of teaching and learning. 'What are these changes, how they are being

implemented and how successful they are?' still remain the concerns of many stakeholders in the education arena.

Real sustainable and effective progress in education is only possible when all stakeholders are consulted, the impacts of methodology or changes are minutely studied, and all proper training of educators, support and follow-up are done in complete synergy with each other. Technology is entering the veins of our society, of which education is of no exception. Students as well as educators are impacted by the advent of technology in many aspects of their life. The Government of Mauritius has introduced the use of ICT tools and applications into the secondary school education, as part of its agenda of making Mauritius, the cyber-island of the Indian Ocean.

The interactive white boards, multimedia DVDs, pre-programmed tablets have been introduced in some classes of secondary schools. Crash courses of ICT have been given to state secondary school educators at one go. All these are tangible aspects of the ICT implementation strategy that are being emphasized in the media. Those who come across this information just think that the government is really doing a wonderful job. Without any doubt, it is indeed a step towards the new education, but the question remains, how pedagogically are the educators prepared to deliver with this new change; how structurally correct are the infrastructures for this new intervention; and how efficient are educators in this new system? The whole curriculum of ICT-based instruction needs a new blend of approach and educators need to be correctly prepared to re-engineer their instructional methodologies of holding classes.

The term "Information and Communication Technologies" (ICT) refers to forms of technology that are used to transmit, process, store, create, display, share, or exchange information by electronic means. This broad definition of ICT includes, such technologies as radio, television, video, DVD, telephone (both fixed line and mobile phones), satellite systems, and computer and network hardware and software, as well as the equipment and services associated with these technologies, such as video conferencing, e-mail, and blogs (UNESCO, 2007).

The professional development refers to the activities to

enhance one's professional career growth (ERIC, 1979). The activities may include fulfilling the scheme of duties; individual development, continuing education, in-service education, as well as curriculum writing, peer collaboration, study groups, and peer coaching or mentoring (Aslam, 2013).

1. Review of Literature

Mauritius, being a developing country, has always been having a gap in implementing the latest technology trends as compared to developed countries. Despite its small size, the government sowed the seeds of many projects in making information technology the key tool of progress in the country. Anderson et al. (2002) document on ICT in Education reports that teachers need to be adequately prepared to implement a state-of-the-art ICT curriculum. Indeed, introducing any new curriculum calls for careful preparation, management, resourcing, and continuing support (Gokhe, 2002).

Bork and Dawson (as cited in Ramharai & Goodoory, 2003) reported that in many countries, ICT has been implemented for more than twenty years in schools and studies have been carried out in order to evaluate its impact on teaching and learning and the extent to which the resources available can help learning among pupils in the primary schools. But in many countries, adequate resources are not available, which is just a political eye-wash by stating that ICT is now in schools.

ICT can no longer be viewed as some sort of optional pedagogic strategy available in ever increasing sophistication and volume. They need to be seen as an essential aspect of teacher's cultural toolkit in the 21st century, affording new and transformative models of development that extend the nature and reach of teacher learning wherever it takes place (Leach, 2005).

Trucano (2005) in a World Bank Program exposed some pertinent points about teacher technical abilities and knowledge of ICTs:

1.1 Preparing Teachers to Benefit from ICT use is about more than Just Technical Skills

The technical mastery of ICT skills is not a sufficient prerequisite for the successful integration of ICT into

teaching.

1.2 One-off Training' is not Sufficient

Teachers involve comprehensive, continuing exposure to ICTs in order to be able to assess and select the most suitable resources. However, the development of suitable pedagogical methods is considered more important than ICT technical mastery.

1.3 Few Teachers have Broad 'Expertise' in using ICTs in their Teaching

Very few educators typically have extensive understanding of the broad spectrum of ICT instruments and resources even in the most developed schools in OECD countries.

1.4 In OECD Countries, the use of ICTs to Promote 'Computer Literacy' is seen as Less Important than in using ICTs as Teaching and Learning Tools

The use of technology in daily teaching and learning operations seems to be more essential in OECD experience than particular training in "computer courses."

While technology skills development is seen as having a part to play in the teaching and learning system, it is more crucial as an enabler of other teaching and learning methods, and not too significant in and of itself. Schools that report the greatest concentrations of student ICT related abilities and experience are often not those with strong computer training demands, but rather those that have routinely used ICTs throughout the professional development of teachers and the teaching and learning process.

Ali et al. (2013) emphasized that in order to convince educators and administrators of the importance of using ICT in their teaching-learning system and administration, the training of teaching employees in pedagogical matters and administrators in administration should be improved.

The teachers need to be trained in educational software to teaching and learning along with computer literacy. They must also be trained in integrating ICTs into classroom activities. ICT tools enhance the training (Osakwe, 2013).

Ghavifekr and Rosdy (2015) found that training programs for professional development for educators played a key role in enhancing students' quality learning. They also cited

Winzenried et al. (2010) who mentioned that teachers who have completed ICT courses are more efficient in teaching through the use of technology instruments than those without training.

Lakshmi (2016) viewed that there should be professional development of the educators in parallel with the curriculum. Their professional practice together with their personal productivity is enhanced when using ICT. She defined this process in 4 stages: (i) The awareness stage: the educators become ICT literate and become aware of what tools are available for them to use and how to use them, (ii) The application of ICT: with the knowledge and skills acquired in ICT, the educators begin to apply different kinds of ICT tools/techniques/resources to their regular duties, (iii) Integration: with time the build-up in confidence in ICT enables the educators to integrate and overlap both tools and subject areas, and (iv) Change in professional practice: educators are competent and able to design more complex lessons including real-world projects using ICT tools. She proposed that there should be a structured programme for professional development of educators so as to be certain that they are properly equipped for an ICT driven curriculum.

2. Objectives of the Study

The objectives of the study are as follows:

- To identify the key areas of ICT application by secondary school educators.
- To find out the impact of ICT training with regard to various duties domains on the professional development of secondary school educators

3. Hypotheses

The following hypotheses were formulated for the study:

- There will be a positive impact of ICT training with regard to the class duties on professional development of secondary school educators.
- There will be a positive impact of ICT training with regard to the assessment and evaluation duties on professional development of secondary school educators.
- There will be a positive impact of ICT training with regard to the managing practice lessons duties on

professional development of secondary school educators.

- There will be a positive impact of ICT training with regard to the academic administration duties on professional development of secondary school educators.
- There will be a positive impact of ICT training with regard to the curriculum and pedagogical duties on professional development of secondary school educators.
- There will be a positive impact of ICT training with regard to knowledge and skills update on professional development of secondary school educators.
- There will be a positive impact of ICT training on the usage frequency related to professional duties and development of secondary school educators.
- There will be a positive impact of total ICT training on overall professional duties and development of secondary school educators.

4. Methodology

In order to find the impact of ICT on professional development of secondary school educators, the one-group pretest and post test experimental design was used. The educators were given training in ICT use for a period of about a month in their school setting. A comprehensive questionnaire comprising various questions on ICT familiarity and use was administered to the sample prior to the training and after the training. The questionnaire had questions related to various teaching-learning activities including preparing lesson plans, laboratory work, examination, curriculum, and course delivery.

4.1 The Sample

The sample for the study was pooled from the total of existing 68 state secondary schools using simple random technique. Only ten educators per college would be allowed to be trained using the master-trainers in a cascade model, whereby two head of departments from each college were trained by the researcher and then the trained educators trained the remaining eight colleagues. So, ten educators from each school were randomly selected thus making the total sample size as 680 (10 educators x 68 schools = 680 educators). Out of the given sample size, 538 educators responded to the program and were given questionnaires before the training. Then these respondents were given a training for about a month through master-trainers in a cascade model. The trainers focused on how to apply ICT tools in their day to day academic functions including the teaching-learning activities. After the training, they were monitored to apply ICT in their duties for two school terms (seven months including holidays). The same questionnaire was further administered to these educators and performance scores obtained for both prior and after training. In the post test administration, 466 responses were received. The respondents whose questionnaires were incomplete were removed from the analysis, thus making the sample size 466 in both pre-test and post-test. The sampling representation is shown in Table 1.

5. Reliability and Validity of the Questionnaire

Very often researchers have the tendency to see what they personally want to see in their study; therefore, they have to protect themselves from researcher bias. They also have to be very careful while selecting tools, their design and

Zone no.	Name of Zone	No. of Secondary Schools	No. of Secondary Schools to be selected	No. of Educators selected
1	Port Louis and North	23	23	230
2	Beau Bassin-Rose Hill, center and east	17	17	170
3	Curepipe and South	13	13	130
4	Quatre Bornes, Vacoas-Phoenix, and west	15	15	150
Total:		68	68	680

Maximum score in the component: 3

Table 1. Sample Representation

implementation, analysis and interpretation of data, and reporting of findings to ensure a high degree of reliability and validity.

The draft questionnaire was pre-tested in order to find out how it works before launching off on a full-scale survey. This often solves much unforeseen problems in field work and indicates any necessary changes which need to be made in the questionnaire (such as complexity of words used). Finally, a pilot study is a main rehearsal of a specific aspect of the study, such as method of data collection, data collection instrument, etc.

A pilot study was conducted among 50 participants and the only changes which needed to be made were the wording used in some questions.

The design of the questionnaire for this study was constructed according to the above guidelines and the factors formulated were done according to findings obtained in past relevant studies. The Cronbach alpha for the questionnaire in the pilot study revealed acceptable internal consistency (0.937).

There is a controversial issue related to questionnaires as very often participants may not write the truth for various reasons. Questionnaire has been used as one of the data collecting tools for this research. The questionnaire has been designed for secondary school educators. As the questionnaires were given to 680 educators, this diminishes the biasness to some extent. Moreover, the information provided by the educators were counter verified during the focus group discussion.

Prior to the pilot study, experts in the domain were given the questionnaire and consulted about the survey. Amendments in the formulation of the wordings were made. All experts found the survey suitable for the purpose intended. The experts were the director of ICT in Ministry of education, officials of the ministry, a lecturer in Mauritius Institute of Education, 2 head of departments in secondary schools, 5 educators, 2 rectors, 2 educational psychologists, and the 2 supervisors of this research work.

6. Analysis, Interpretation, and Results

6.1 Identification of Most Frequently used ICT Tools in Performance of Duties and Professional Development Inside and Outside Classroom

The respondents were trained in various ICT tools and the percentage wise usage is given below in Table 2.

Sr.no	ICT tool	Post-Training (%)
1	Desktop/laptop computer for use by Educator	87.77
2	Tablet	73.61
3	Email	79.61
4	Office suite (Word/Excel/Powerpoint/Access)	86.05
5	Internet usage (search engine, Forums and other Websites)	78.33
6	Printer	31.55
7	Scanner	40.99
8	Video Projector	49.36
9	Digital/Interactive Whiteboard	36.48
10	Smart Phone	97.21
11	You Tube or Video Channel	94.42
12	Social Networking Web sites	85.41
13	Online learning Platforms	60.73

Maximum score in the component: 3

Table 2. ICT Tools used by Respondents

As can be seen from the table above, the secondary school educators used smartphone, YouTube or other videos, social networking websites, Office Suite and desktop/laptop computers at the maximum (over 80%). The use of printer was at the lowest amongst all ICT gadgets. This could be attributed to the reason of non-accessibility of printers in many schools and less requirement of printed documents. Moreover, the printer ink is very expensive in Mauritius.

6.2 Impact of ICT Training on Professional Development

There were eight hypotheses set up with regard to the different training components and their impact on professional development of secondary school educators of Mauritius. The result related to testing of each hypothesis is given below:

Hypothesis 1: There will be a positive impact of ICT training with regard to the class duties on professional development of secondary school educators.

Table 3 shows the Mean, SD, and *t* value of the pre-training and post-training impact scores with regard to class duties on Professional Development (PD) of the respondents who had received training and used ICT in their academic and related functions.

The *t* value of 18.67 is greater than the table value 2.58 and thus significant. This indicates the existence of a significant difference in the pre-test and post-test performance. More

PD Component: Class Duties	N	Mean	SD	df	t' ratio	Result
Pre-training performance	46	1.3039	0.82208	465	18.67	Significant at .01 level
Post-training performance	6	2.2305	0.65387			

Maximum score in the component: 3

Table 3. Impact on Class Duties & PD

specifically, the mean score is much higher in the Post-Training than the Pre-Training. Thus, it may be stated that the ICT training considerably increased the support of ICT tools to raise the performance of duties related to the conduct of class chores and subsequently the professional development of the secondary school educators. Thus, the hypothesis 1, which states that "There will be a positive impact of ICT training with regard to the class duties on professional development of secondary school educators" could be accepted and the measuring tool can be validated.

Hypothesis 2: There will be a positive impact of ICT training with regard to the assessment and evaluation duties on professional development of secondary school educators.

Table 4 shows the Mean, SD, and t' value of the pre-training and post-training impact scores with regard to the assessment and evaluation duties on professional development of the respondents who had received training and used ICT in their academic and related functions:

The t' value of 16.73 is greater than the table value 2.58 and thus significant. This indicates the existence of a significant difference in the pre-test and post-test performance. More specifically, the mean score is much higher in the Post-Training than the Pre-Training. Thus, it may be stated that the ICT training considerably increased the support of ICT tools to raise the performance of duties related to the assessment and evaluation duties and subsequently the professional development of the secondary school educators. Thus, the hypothesis 2, which states that "There

PD Component: Assessment & Evaluation	N	Mean	SD	df	t' ratio	Result
Pre-test performance	466	1.1871	.72510	465	16.73	Significant at .01level
Post-test performance		1.9455	.66173			

Maximum score in the component: 3

Table 4. Impact on Evaluation Duties & PD

will be a positive impact of ICT training with regard to the assessment and evaluation duties on professional development of secondary school educators", is validated.

Hypothesis 3: There will be a positive impact of ICT training with regard to the managing practice lessons duties on professional development of secondary school educators. Table 5 shows the Mean, SD, and t' value of the pre-training and post-training impact scores with regard to managing practice lessons on professional development of the respondents who had received training and used ICT in their academic and related functions:

The t' value of 21.01 is greater than the table value 2.58 and thus significant. This indicates the existence of a significant difference in the pre-test and post-test performance. More specifically, the mean score is much higher in the Post-Training than the Pre-Training. Thus, it may be stated that the ICT training considerably increased the support of ICT tools to raise the performance of duties related to the managing practice lessons and subsequently the professional development of the secondary school educators in Mauritius. Thus, the hypothesis 3, which states that "There will be a positive impact of ICT training with regard to the managing practice lessons duties on professional development of secondary school educators", could be accepted and the measuring tool can be validated.

Hypothesis 4: There will be a positive impact of ICT training with regard to the academic administration duties on professional development of secondary school

PD Component: Managing practice Lessons	N	Mean	SD	df	t' ratio	Result
Pre-test performance	466	0.5440	0.82920	465	21.01	Significant at .01level
Post-test performance		1.7232	0.85734			

Maximum score in the component: 3

Table 5. Impact on Managing Practice Lesson & PD

educators.

Table 6 shows the Mean, SD, and t' value of the pre-training and post-training impact scores with regard to the academic administration duties on professional development of the respondents who had received training and used ICT in their academic and related functions:

The t' value of 21.32 is greater than the table value 2.58 and thus significant. This indicates the existence of a significant difference in the pre-test and post-test performance. More specifically, the mean score is much higher in the Post-Training than the Pre-Training. Thus, it may be stated that the ICT training considerably increased the support of ICT tools to raise the performance of duties related to the academic administration and subsequently professional development of the secondary school educators in Mauritius. Thus, the hypothesis 4, which states that "There will be a positive impact of ICT training with regard to the academic administration duties on professional development of secondary school educators", could be accepted and the measuring tool can be validated.

Hypothesis 5: There will be a positive impact of ICT training with regard to the curriculum and pedagogical duties on professional development of secondary school educators.

Table 7 below shows the Mean, SD, and t' value of the pre-training and post-training impact scores with regard to the curriculum and pedagogical duties on professional development of the respondents who had received training and used ICT in their academic and related

PD Component: Academic Administration	N	Mean	SD	df	t' ratio	Result
Pre-test performance	466	1.0046	.69906	465	21.32	Significant at .01 level
Post-test performance		1.9846	.73960			

Maximum score in the component: 3

Table 6. Impact on Academic Duties & PD

PD Component Curriculum & Pedagogy	N	Mean	SD	df	t' ratio	Result
Pre-test performance	466	0.8766	0.88783	465	19.56	Significant at .01 level
Post-test performance		1.9206	0.77832			

Maximum score in the component: 3

Table 7. Impact on Curriculum & Pedagogical Duties & PD

functions:

The t' value of 19.56 is greater than the table value 2.58 and thus significant. This indicates the existence of a significant difference in the pre-test and post-test performance. More specifically, the mean score is much higher in the Post-Training than the Pre-Training. Thus, it may be stated that the ICT training considerably increased the support of ICT tools to raise the performance of duties related to the performance of duties related to the curriculum and pedagogy, and professional development of the secondary school educators in Mauritius. Thus, the hypothesis 5, which states that "There will be a positive impact of ICT training with regard to the curriculum and pedagogical duties on professional development of secondary school educators", could be accepted and the measuring tool can be validated.

Hypothesis 6: There will be a positive impact of ICT training with regard to knowledge and skills update on professional development of secondary school educators.

Table 8 shows the Mean, SD, and t' value of the pre-training and post-training impact scores with regard to knowledge and skills update on professional development of the respondents who had received training and used ICT in their academic and related functions:

The t' value of 17.57 is greater than the table value 2.58 and thus significant. This indicates the existence of a significant difference in the pre-test and post-test performance. More specifically, the mean score is much higher in the Post-Training than the Pre-Training. Thus, it may be stated that the ICT training considerably increased the support of ICT tools to raise the performance of duties related to the knowledge and skills update and professional development of the secondary school educators in Mauritius. Thus, the hypothesis 6, which states that "There will be a positive impact of ICT training with regard to

PD Component Knowledge and Skills Update	N	Mean	SD	df	t' ratio	Result
Pre-test performance	466	1.8305	.74719	465	17.57	Significant at .01 level
Post-test performance		2.5933	.67232			

Maximum score in the component: 3

Table 8. Impact on Knowledge & Skill Update Duties & PD

knowledge and skills update on professional development of secondary school educators”, could be accepted and the measuring tool can be validated.

Hypothesis 7: There will be a positive impact of ICT training on the usage frequency related to professional duties and development of secondary school educators

Table 9 shows the Mean, SD, and *t'* value of the pre and post-test ICT usage scores of the respondents who had received training and used ICT in their overall academic and related functions:

The *t'* value of 32.48 is greater than the table value 2.58 and thus significant. This indicates the existence of a significant difference in the pre-test and post-test performance. More specifically, the mean score is much higher in the Post-Training than the Pre-Training. Thus, it may be stated that the ICT training considerably increased the usage of ICT tools in the overall performance of duties and professional development of the secondary school educators in Mauritius. Thus, the hypothesis 7, which states that “There will be a positive impact of ICT training on the usage frequency related to professional duties and development of secondary school educators” is validated.

Hypothesis 8: There will be a positive impact of total ICT training on overall professional duties and development of secondary school educators.

Table 10 below shows the Mean, SD, and *t'* value of the pre and post-test ICT impact scores on professional duties and development of the respondents who had received training and used ICT in their academic and related

PD Component ICT Usage Over all	N	Mean	SD	df	<i>t'</i> ratio	Result
Pre-test performance	466	4.08	2.947	465	32.48	Significant at .01 level
Post-test performance		9.01	2.422			

Maximum score in the component: 13

Table 9. Impact on Usage Frequency Related to PD

PD Component: Total Training	N	Mean	SD	df	<i>t'</i> ratio	Result
Pre-test performance	466	27.83	16.140	465	24.780	Significant at .01 level
Post-test performance		52.55	14.486			

Maximum score in the component: 13

Table 10. Impact on Overall Duties & Professional Development

functions:

The *t'* value of 24.78 is greater than the table value 2.58 and thus significant. This indicates the existence of a significant difference in the pre-test and post-test performance. More specifically, the mean score is much higher in the Post-Training than the Pre-Training. Thus, it may be stated that the ICT training considerably increased the support of ICT tools to raise the overall performance of duties and professional development of the secondary school educators in Mauritius. Thus, the hypothesis 8, which states that “There will be a positive impact of ICT training on overall professional duties and development of secondary school educators”, could be accepted and the measuring tool can be validated.

7. Major Findings and Discussion of Results

The study was directed to investigate the impact of training in ICT application for Secondary School Educators on their overall professional duties and development. For the hypotheses 1 to 6, the impact scores indicated were as follows: 0 means 'Not at All', 1 means 'A Little', 2 means 'To Some Extent' and 3 means 'Quite a Lot'. The results show that:

- The impact of ICT training with regard to the class duties and knowledge & skills update on professional development have a bigger impact with the score being less than 2 in the pre-test and more than 2 in the post-test. Earlier, the ICT application in those areas were of little help and support compared to the post training, where the help and support is now of some extent to quite a lot. The *t'* value in all areas mentioned above showed a significant increase in performance.
- The impact of ICT training with regard to the assessment & evaluation duties, managing practice lessons duties, academic administration duties, and curriculum & pedagogical duties on professional development had a considerable increase in the support and help in those areas. Earlier, the ICT application in those areas were of 'No Help/A Little Support' compared to the post training where the help and support is now to some extent. The *t'* value in all areas mentioned above showed a significant increase in performance.

For hypothesis 7, in Table 9, the impact usage score indicated: 0 as no usage of any ICT tool and 13 as using all tools as the maximum usage frequency. For hypothesis 8 in Table 10, the impact score on professional development would be 0 as no impact to 78 as the maximum impact.

The results show that:

- The impact of ICT training on the usage frequency increased considerably from 4.08 to 9.01, meaning that the educators were applying more tools in carrying out their duties and their professional development. The value of 32.48 shows a very significant difference between the pre-training and post training.
- The impact of the ICT training on the overall performance of their duties and professional development improved by nearly twice from mean 27.83 to 52.55. This means that the ICT training had a very positive impact on the overall performance of the duties and professional development of the secondary school educators in Mauritius.

8. Discussion of Results of Study collectively and Implications

The overall analysis of the results demonstrates that Training plays a key role into the impact of ICT on the performance of the professional duties and development of secondary school educators in Mauritius. Without proper training it can be observed that the ICT usage was less and its impact was weak on the professional duties and development. Post training and practice showed a significant improvement on the ICT usage frequency and a better impact of ICT on the professional duties and development. Thus, it can be said that appropriate training in ICT gives a good impact of ICT on the professional duties and development of secondary school educators in Mauritius. It implies that the authority must invest on good training and do it for all secondary school educators in Mauritius, so that it enhances ICT usage in their professional duties and development, together bringing the benefits ICT has.

9. Recommendation of the study

As rightly put by Jager and Lokman (1999) specific ICT skills

for Educators are not the main ICT implementation problem, but it is rather the fact how an Educator creates a powerful learning environment using ICT, how does he/she apply ICT?

From the study, it can be observed that training helped to enhance the knowledge how to properly use ICT tools, what tools to use when and where, in carrying the professional duties and development of an educator. It also points out that the existing in-service training in ICT is not adequate and needs to be reviewed. Hence, it is recommended that:

- The pre-service and in-service educator training using ICT tools need to be reviewed
- Regular refresher workshops on existing and new technologies and how to implement them in daily duties and professional development, need to be carried out
- More support should be given to educators, such as FAQs, tutorials, helpdesk support, regular visit of ICT technicians in schools
- Motivational perks (example Performance Management System) can be helpful in the beginning to start a good culture of ICT usage.

Conclusion

Proper ICT training on the implementation and application is required. It was noticed from the pre-training survey and during the training that most educators already had the required ICT skills, but they did not know how to apply the ICT tools in their daily duties and for their professional development. The training was thus tailored to show the educators how to use and apply the existing tools in their duties and professional development. Any training they received before this designed training was mainly to acquire the ICT skills. The designed training taken, helped to fill in this gap of how to apply their skills in their professional duties and development. All results show that the training has helped the educators to understand the power of their tools better and how to equip them in their daily professional duties and development. The government and other concerned institutions are made an appeal to include not only skill acquisition training, but also practical

implementation and application training of ICT tools in the pre-service educators' training and make an update for the in-service educators in both primary and secondary schools.

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