

ICT APPLICATION AND PROFESSIONAL DEVELOPMENT OF SECONDARY SCHOOL EDUCATORS IN MAURITIUS

Girish Mautadin, School of Education, Apeejay Stya University, India
Ananda Padhan, School of Education, Apeejay Stya University, India
Mohammad Issack Santally, Pro-VC, University of Mauritius, Mauritius
(girish.mautadin@live.com)

ABSTRACT

The use of ICT has influenced our mode of learning and teaching in different ways. Its impact on education can be widely felt and many countries have included it as part of their curricular requirements. In order to find out the relation between the usage of ICT and the professional development of secondary school educators in Mauritius, a study was conducted, and the correlation technique was used to determine relationships. 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. A comprehensive questionnaire comprising various questions on ICT familiarity and use was administered to the sample. The result of the study revealed that the application of overall ICT tools in the fulfilment of the overall professional duties & development was significantly positively correlational.

Keywords: ICT tools, ICT impact, ICT Usage, ICT and Teachers, Professional Development, Professional Duties

INTRODUCTION

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 videoconferencing, 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).

The educators have also a multitude of technological gadgets such as smart-phones, laptops, personal computers (PC) at home, All-In-One Printer/Photocopier/Scanner, Dictaphone and so on. These are used throughout their daily tasks; be it at home to search for something on the internet (via smartphone/tablet/pc); at school to lookup for the meaning of a word; to send an article via whatsapp to a colleague; to have a group discussion on facebook or a teachers' forum; or to simply follow a how-to-do course on you-tube or an online learning platform to upgrade their skills.

All these methods of information acquisition, retention, interpretation and re-use may impact our ways of doing things be it at home or at work, and subsequently the related results. The secondary school educators, being the subjects of this study, had undergone a formal training in how to use the available ICT tools in performing their duties and related professional developments. After 7 months of applying those ICT tools in their overall duties and professional development, the impact of such usage was assessed through a survey and statistical analysis using the correlational method.

OBJECTIVES OF THE STUDY

The objectives of the study are as follows:

1. To identify the key ICT tools used by secondary school educators.

2. To find out the relationship between ICT tools usage and professional development of secondary school educators, with regard to various professional duties domains.

HYPOTHESIS

The following hypothesis was formulated for the study:

There will be a positive relationship between the overall ICT tools usage and overall professional development of secondary school educators.

METHODOLOGY

In order to find the relationship between the ICT tools and professional duties & development of secondary school educators., a 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 after the training. The questionnaire had questions related to various teaching-learning activities including preparing lesson plans, laboratory work, examination, curriculum and course delivery.

The sample for the study was pooled from the total of existing 68 state secondary schools using simple random technique. Ten educators from each school were randomly selected thus making the total sample size as 680. Out of the given sample size, 538 educators responded to the program and were given 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). A questionnaire was further administered to these educators and performance scores obtained. The respondents whose questionnaires were incomplete were removed from the analysis. In all 466 responses were treated as valid.

ANALYSIS, INTERPRETATION & RESULTS

- *Identification of most frequently used ICT tools in performance of duties and professional development inside and outside classroom.*

Table 1: Usage Frequency per ICT Tool, based on 466 educators

Sr. No.	ICT tool	Usage Frequency (%)
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 Web sites)	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

As can be seen from the table above, the secondary school educators used smart phone, you tube 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 use 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.

➤ 5.2 Correlation between ICT Tools Usage and the Professional Development

Interpretation of the Correlation Coefficient

Cohen (1992) established a set of guidelines for interpreting the strength of correlations. He claimed that a value of 0.1 is a “small effect”, a correlation of 0.3 is a “medium effect” and that a correlation of 0.5 is a “large effect”. As Schober & Schwarte (2018) quote, “Several approaches have been suggested to translate the correlation coefficient into descriptors like “weak,” “moderate,” or “strong” relationship. These cut-off points are arbitrary and inconsistent and should be used judiciously. While most researchers would probably agree that a coefficient of <0.1 indicates a negligible and >0.9 a very strong relationship, values in-between are disputable. For example, a correlation coefficient of 0.65 could either be interpreted as a “good” or “moderate” correlation, depending on the applied rule of thumb. It is also quite capricious to claim that a correlation coefficient of 0.39 represents a “weak” association, whereas 0.40 is a “moderate” association.” In line with these descriptive indicators, the interpretation of results is done in this study.

Hypothesis: There will be a positive relationship between the overall ICT tools and professional development of secondary school educators with regards to the overall duties.

Table 2 below shows the Mean, Standard Deviation (SD), the correlational strength and interpretation of the relationship between ICT Tools and professional development of secondary school educators, with regard to the overall duties.

Table 2: Correlation between ICT Tools and Overall Duties & Professional Development

Overall Professional Duties & Development	Mean	SD	r' value	Interpretation
Overall ICT Tools (Max Score: 13)	9.01	2.42	0.535	Positive Quite Good Correlation
Professional Duties & Development (Max Score: 78)	52.55 (67%)	14.486		

N = 466 respondents

The p value 0.000 is less than 0.05. It means the performance of the duties with regard to professional development has a correlation with ICT tools usage. The correlational strength is 0.486. Thus, it may be stated that the usage of ICT tools has a significant positive correlation with the overall performance of duties and professional development of the secondary school educators in Mauritius. **Thus, the hypothesis which states that “There will be a positive relationship between the overall ICT tools and professional development of secondary school educators with regards to the overall duties”, is validated.**

MAJOR FINDINGS & DISCUSSION OF RESULTS

The study was directed to investigate **the correlation between** ‘the application of ICT Tools in the overall professional duties & development of Secondary School Educators in Mauritius’ **and** ‘their performance in those professional duties and development’.

In table 2 the ICT tools support score on overall duties and professional development would be 0 as no support to 78 as the maximum support. For the hypothesis, the number of ICT components investigated is 13, so the max ICT tools usage score per respondent would be 13 and minimum 0. The mean score obtained here is 9.01, that is 69.31% of the ICT tools had been applied while performing their professional duties and related professional development.

The correlation between the application of those 69.31% of ICT Tools and professional academic functions show that there is a significant positive correlation between ICT Tools Usage and the overall professional duties and development. The correlational coefficient value 0.535 together with the mean value of 52.55 over 78 i.e. a score of 67% show that the respondents felt that ICT tools have helped them to perform their overall duties and professional development. It can thus be said the ICT tools had a significant positive relation with professional development of secondary school educators, with regard to their overall duties.

CONCLUSION

The study has demonstrated that in general for those educators who have used the ICT tools responded that ICT has helped them in their professional duties and development, thus showing a positive relation. With better support from the government, peers and other external factors mentioned above, the ICT usage might be more and consequently may have a higher positive impact on their overall duties and professional development.

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