Groundwork to an Effective PD in ICT for Teachers in Tunisia

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This paper concerns itself with establishing a groundwork to improve the effectiveness of Professional Development (PD) for teachers in the field of ICT in Tunisia. We study the literature and research in the field of ICT in education from different countries to spot the features of effective PD in ICT. The obstacles of ICT implementation will also be mentioned. We aim at showing how effectiveness in ICT training requires special strategy of implementation that adheres to research findings and incorporates novel variables. The last part of the paper will try to highlight main conclusions and give some recommendations based on observations from the review of literature.

Keywords: Effective Professional Development, ICT, Tunisia

Review of the Literature

What is an Effective PD Training in ICT?

According to Darling-Hammond et al. (2017), an effective teacher PD training is defined as "structured professional learning that results in changes in teacher practices and improvements in student learning outcomes." (p. V). This definition foregrounds the importance of overseeing a structured PD plan which bears noticeable impact on teachers' behavior in the classroom, which, in turn, bears a noticeable impact on students' learning outcomes. Accordingly, an effective PD training in ICT revolves around the three elements of effective PD training, namely structured plan, teachers' behavior in the classroom and learners' academic outcomes.

First, at the level of plan, there should be a clear-cut distinction between the three thought schools that were delineated by Klement (2017), who explained that the research in these schools has focused on either learning networks, issues related to ICT tools, or ICT competences of pupils (p. 254). We can conclude here that ICT training can be either medium-driven, tool-driven, or capability-driven. Medium driven refers to the kind of training that aims at equipping teachers with skills to use distance learning mediums in classroom environments that are different from face-to-face classrooms. Tool-driven refers to the kind of training that focuses on mastering the ICT techniques and how to use them in the classroom to fulfill pedagogical requirements. Capability-driven training refers to the PD plan that concerns itself with the ICT competences that teachers have acquired "with respect to the employment of advanced ICT tools." (Klement, 2017, p. 254).

Second, at the level of teachers' practice and teachers' self-efficacy, PD training in ICT must recognize that teachers' capability of using ICT equipment and their favorable behavior toward ICT integration does not mean that they will use ICT in the classroom more often (Sanchez et al., 2012, p. 2). Accordingly, an effective PD training in ICT should target this gap between teachers' predisposition and their actual behavior by building teachers' ICT self-efficacy and self-confidence.

Third, at the level of learners' academic achievements, the literature reveals that the utmost advantage of using ICT is to create an engaging classroom environment. The study of Ghavifekr & Rosdy (2015) "proved that students learn more effectively with the use of ICT as lesson designed are more engaging and interesting" (p.188). This implies that PD must incorporate training that keeps up with the advanced digital level of the "digital natives", i.e., the learners of the 21st century. PD training should at least ensure that teachers have basic knowledge of the technologies that their students are making use of. It should help teachers to integrate the new technologies, whenever possible, in the classroom environment. The motivating quality of ICT tools should not be undermined by using outdated technologies compared to what students are using.

Features of Effective PD Training in ICT:

i. Content focused

Research has confirmed that effective ICT training is that which shows to teachers the usefulness of ICT strategies in the classroom. Sanchez et al. (2012) emphasized the correlation of use and attitudes (p. 1359). Ghavifekr et al. confirmed that when teachers "perceive ICT to be useful to them, their teaching and their pupils' learning, then according to the empirical evidence of previous studies (Cox, Preston & Cox, 1999) they are more likely to have a positive attitude to using ICT in the classroom." (p. 41).

ii. Active learning and knowledge transfer

In his quasi-experimental research, Sanchez et al. (2012) concluded that "the impact of traditional training on both attitudes and ICT use is very low (and not significant) which makes us understand that new training alternatives should be incorporated to Teacher Education programs." (p. 1363). This implies that PD sessions should be highly digitalized in such a way that allow teachers to practise, experiment and interact using ICT media and tools.

iii. Agents of training

Unlike ordinary pedagogical training, ICT training requires not only pedagogical support from inspectors, but also technical support from IT experts. According to Ghavifekr and Rosdy (2015) "Korte and Hüsing (2007) argued that ICT support or maintenance contracts in schools help teachers to use ICT in teaching without losing time fixing software and hardware problems." (p. 42). We think it is possible to provide distance technical support service to teachers, where teachers can find solutions in FAQs or direct interaction with IT experts.

iv. Realizability

The realizability of ICT training depends, first, on "the perceived ease-of-use" (Ghavifekr and Rosdy 2015, p. 179). Research identified wide range of criteria of ICT to be labelled by teachers as easy to use. Some of these criteria are "easy to learn, clear and understandable, easy to use, controllable, easy to remember" (Ghavifekr et al. p 41). Second, teachers need appropriate amount of time to learn ICT skills and enough time to implement those skills in the classroom. Ghavifekr and Rosdy (2015) concluded that "it is good if teachers are given more time to teach so that ICT integration in teaching can be a success." (p. 184).

Obstacles to Implement ICT Training in the Classroom

The review of the literature revealed that the obstacles to implement ICT training in the classroom fall under the same categories as the obstacles to implement any other PD training in the classroom, which were described by the work of Darling-Hammond et al. (2017), namely system related and school related. Bingimlas (2009) provided a thorough description of the literature of the different classifications of those barriers in their article too. Furthermore, qualitative and quantitative research about the obstacles to implement ICT in the classroom in different countries revealed almost the same recurring barriers, with some differences in the severity of each obstacle from one country to another.

Conclusions and Recommendations

The first conclusion is that any PD training program in the field of ICT must, first, be carried out according to a plan with precise and measurable pedagogical objectives, second, it must take into consideration teachers' attitudes towards ICT, their different needs and expectations of ICT and their individual abilities to master ICT tools, and finally, it must evaluate its impact on teachers' behavior in the classroom and students' learning outcomes.

Second, data about teachers' attitudes, expectations and technology-confidence can be acquired by survey research. However, teachers' fidelity to ICT training and students' learning outcomes can be assessed by feedback from inspectors' reports and students' examination achievements.

Third, PD training programs must fulfill certain features of effectiveness. Thus, the assessment of any existing ICT training plan should test the conformity of that plan to these features. We need to assess to what extent ICT training programs were effective at the level of plan before judging teachers' fidelity to them. Failure to meet the objectives of a training program in ICT can be the result of a poor plan rather than implementation obstacles.

Fourth, there are many obstacles to ICT implementation. They are of different types and acuteness. These obstacles need to be delineated by research. We cannot overcome them unless we are fully aware of them. However, the literature and research from other countries show that PD training should continue ICT programs for teachers no matter how acute obstacles are. On the other hand, the individual and collaborative efforts of teachers play an essential role in spurring the process of ICT implementation in schools. I believe that job incentives can play a major role here to encourage teachers to outperform many obstacles that happen at the level of school. Another strategy is creating an official, online platform that connects teachers to their inspectors, technical assistants, and each other.

Finally, at the level of plan, PD training in ICT is twofold because it must take into consideration not only the developments in pedagogy but also the tremendous updates in technology. Therefore, there should be consistent collaborative work between pedagogical and technological institutions to provide teachers quality training. Teachers should also be supported to get their personal ICT equipment such as iPads, data shows, etc.

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