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NEW IMAGE: ONLINE PROFESSIONAL DEVELOPMENT

AT A GLANCE

While schools strive to recruit teachers who have talent in teaching, we also agree that teaching is a skill which can be improved with time if teachers have appropriate support and opportunities to develop professionally because life-long learning is essential for continuous improvement in the profession. Professional development (PD) traditionally was provided on-site. However, in recent years, it has been raised at the level of eLearning. The purpose of this capsule is to present the empirical studies conducted on online professional development (OPD) so that we can learn from existing positive experiences and be mindful of its pitfalls.

Introduction

Teacher professional learning is of central interest because it helps support the increasingly complex skills students need to learn in preparation for further education and work in the 21st century. Sophisticated forms of teaching are needed to develop student competencies such as deep mastery of challenging content, critical thinking, complex problem-solving, effective communication and collaboration, and self-direction. Educators agree that teachers must stay current in the different aspects of education to be effective in the classroom and that they can develop the above listed skills in students if they themselves develop continuously to which professional development (PD) should contribute. PD effectiveness has been a concern for many as a venue for teachers to refine the pedagogies required to teach students with different learning needs (Chung & Kim, 2010; Ducharme, Ducharme, & Dunkin, 2002).

Schools offer different professional development opportunities to help teachers improve their instructional strategies. However, most of these initiative seem to be on-site. On-site PD seems to have some limitations: (i) it coincides with teachers' busy schedules, (ii) often times it seems to be offered to teachers teaching the same grade or the same content (limited inter-grade or inter-

disciplinary interactions; (iii) it limits the communication between the trainees and the trainers (in most cases lecture style of communication), (iv) provided instructional materials are limited (mainly printed handouts whereas for supporting development of 21st century skills in students Web 2.0 has also to be used). Additionally, time constraints often hinder teachers' meaningful engagement into discussions with their professional community. Taking advantage of the current level of educational technology, schools started looking towards online professional development (OPD) to create opportunities for educators to address the limitations listed above. In recent years, several studies have been conducted to develop an understanding of what effective OPD is and how to develop one. Some empirical research on teacher professional development is presented below.

Empirical Studies on OPD

OPD, PD or Both?

A number of studies compared teachers' perceptions on professional development (face-to-face) and online professional development. Sample studies are presented below.

Thomas (2009) conducted a study to assess teacher perceptions regarding the effectiveness of online courses as a delivery method for professional development. Participants were divided into two groups, educators who had participated in online professional development and at that point were teaching professional development courses online (instructors) and educators who had participated in the instructors' online professional development classes (online participants). Additionally, the study explored the rationale for professional development and the need for a revolution in the methods of delivery for professional development. In other words, the study focused on the opinions of instructors and online participants regarding the ability of online professional development to serve the profession. Results indicated an overall positive perception of online professional development by both groups. Instructors and online participants with more years of teaching experience were found to have a more positive perception of the effectiveness of online professional development. They also preferred to teach/participate in online professional development over face-to-face professional development. Additionally, participants who had participated in the largest number of online courses responded more positively that their teaching methodology had changed due to the courses they had taken. The ability to work anytime and the ability to work from any Internet accessible computer were selected by the majority of both groups as factors that influence teaching/taking online professional development courses and as benefits of online professional development. The majority of both groups selected slow Internet and lack of face-to-face interaction as the barriers to online professional development.

Rock (2017) conducted a quantitative retrospective causal-comparative study to determine the impact of the form of professional development (face-to-face *vs.* online) or the level of instruction (elementary or high school) on classroom teaching practices as measured by student learning outcomes. The sample was 432 Ohio teachers who participated in the Ohio Performance Assessment Pilot Project. There were 105 teachers who engaged in face-to-face professional development and 327 teachers who engaged in OPD. An independent samples t-test was performed. The results of the study suggested that there was no statistically significant difference between teachers who engaged in face-to-face professional development or OPD or teachers who taught elementary or high school. Hence a conclusion could be made that when the content of

professional development is comparable, the form of professional development and the level of instruction have minimal effect on student learning outcomes.

Pete (2016) conducted a study to identify whether an online development workshop would yield higher levels of compliance and satisfaction with professional development than a traditional professional development workshop in adjunct faculty. The study was supported by theories such as andragogy, self-directed learning, and connectivism. Archival data from 69 adjunct faculty randomly assigned to experimental and control groups were analyzed. The results of the study suggested that the levels of both compliance and overall satisfaction with professional development were higher in faculty taking the workshop online compared to their colleagues taking the workshop face-to-face.

Shaha, Glassett, Copas, and Huddleston (2016) conducted a study to explore whether an intentionally coordinated, integrated combination of PD and OPD will have positive impacts for educators quantified in improved student performance. Comparison of student scores on Reading and Math suggested 19% and 24% gain respectively. Analyses for Title 1 schools showed significant shrinkage of performance gaps with contrasted non-Title 1 schools. These gains outpaced the gains identified for each PD approach. Researchers concluded that educational leaders would be wise to undertake implementation of intentionally aligned and coordinated approaches combining PD with on-demand OPD.

Wynants, and Dennis (2018) conducted a study to explore the advantages and disadvantages of the online context from the perspectives of ten faculty who completed an online disability awareness program, designed using two models: Universal Design for Instruction and Community of Inquiry. Thematic analysis of the qualitative results indicated control of pace, flexibility, and continued access to resources were benefits of the online context, while lack of social interaction, intrinsic motivation, and accountability were challenges for faculty in completing professional development online.

Holmes, Sgner, and MacLeod (2010) conducted a mixed-methods study to examine the efficacy of a 5-week distance learning model that offered 2-credit courses for K–12 in-service teachers as a form of professional development. The findings of the study spoke to the value of establishing a sense of “presence” online and of the impact of online teacher professional development on the active classroom. Participants especially appreciated tools that promoted social networking and instant connections to the learning community. They strongly agreed that OPD experience had a positive impact on their knowledge of the course topic and related instructional practices.

Theodocion (2011) conducted a mixed methods sequential exploratory study to examine attitudes of educators teaching middle grades toward OPD in a suburban school district in the Southeast region of the United States. The study focused on perceptions of connectedness and learning in OPD. The findings of the study suggested that participants appreciated that they could rely on one another in the course for learning and that they had preference for immediate feedback and activities that required collaboration. The authors opined that the study contributed to positive social change by showing that online opportunities may allow teachers to collaborate with colleagues without restrictions of time and travel by creating a community of learners through Web 2.0 tools.

OPD for Different Disciplines

A number of studies explored OPD offered for different disciplines (e.g. physical education, ELA, Science). It was mentioned that disciplines in which positive teacher change does not seem to be well supported by traditional professional development (e.g. physical education) might benefit from OPD. Three sample studies are presented below.

Hall (2014) conducted a study to assess physical education teachers' usage of and satisfaction with the online site PE Central designed for professional development of teachers in physical education discipline (<http://www.pecentral.org/>), and to ascertain whether PE Central constitutes a valid source of professional development leading to changes in teaching practices and student learning outcomes. 333 physical education teachers (45 pre-service and 288 in-service) completed an online survey assessing the effects of using PE Central on their perceptions of usage, satisfaction, professional development, teacher change, and student engagement. Results of the study indicated that there was no significant differences between pre-service and in-service teachers' usage of and satisfaction with PE Central, but that on average the participants used the resource monthly and that higher percentage of participants were satisfied with the site. This example indicates that positive change in teachers can occur when they take online professional development and that a well-designed online professional development model can be a viable professional development option for teachers.

Stevenson, Stevenson and Cooner (2015) evaluated an online professional development program funded by the State of Colorado to address the need for highly qualified science teachers in high need rural school districts. The results of the evaluation provided positive results for participants' experience with OPD and valuable information regarding improvements to such programs.

Frazier and Boehm (2012) conducted a qualitative study to explore the perceived value of a video-based online workshop in "Watershed Management" as part of the Geography: Teaching with the Stars series, a 22 program professional development series for teachers of geography, social studies, and environmental science. Results of the study indicated that teachers were satisfied with the online professional development approach and its usefulness for enhancing and supplementing the traditional face-to-face approach to professional development.

Masters, De Kramer, O'Dwyer, Dash and Russell (2010) conducted an experimental study through randomized control trial exploring the effects of a series of three learning-community model OPD workshops on teachers' knowledge and instructional practices in the context of fourth grade English Language Arts. The results of the study suggested that there was significant effect on changes in teachers' knowledge and instructional practices, as they related to the targeted goals in vocabulary, reading comprehension, and writing instruction.

Exploration of OPD Effectiveness

Chitanana (2012) conducted a study to understand how the International Education and Resource Network Science Technology and Math (iEARN-STM) online professional development course supported teachers' learning through discourse in an online environment and to identify the constructivist learning principles that were behind the success of the course. The participants were 28 educators enrolled in the course who were either teacher educators or teachers, working in different educational institutions in different countries throughout the world. The results of the

study suggested that the design of the course appeared to have a positive impact on participants' collaboration with colleagues. The study seemed to confirm that the constructivist approach to course design and delivery provides a powerful structure for creating learning environments conducive to the development of professional skills among educators online.

Yoo (2016) conducted a mixed methods study to examine the effect of 148 K-12 teachers' and school educators' learning experience in OPD on their self-efficacy. The Teachers Self-Efficacy Scale (TSES) was administered twice with a five-week interval. Additionally, all participants' descriptive self-analysis of their own score change was examined to identify teachers' attributions of their self-efficacy change. The findings of the study indicated that teacher self-efficacy increased as a result of their OPD experience.

Prestridge and Tondeur (2015) conducted a study to identify the most effective elements required in OPD to enable teachers to improve their use of Information and Communications Technologies (ICT) in their classrooms. Four schools were involved, with twelve classroom teachers participating in a year-long OPD. The program was designed to enable individual learning pathways and draw on the many professional learning opportunities available through Web 2.0 tools and Internet resources. The study explored the process of online ICT professional development to contribute to the conceptualization of how teachers learn in the 21st Century. Findings indicate that teachers need to: engage in three elements - investigation, reflection, and constructive dialogue; build a sense of group and individual online presence, and be supported by mentorship that responds to the various cognitive and affective demands of autonomous learners.

Collins and Liang (2014) conducted a study to investigate which tasks in an online professional development module were ranked by in-service educators as relevant to their work with English language learners (ELLs). Participants were asked to rank the relevancy of 36 online tasks from an OPD module on a 11-point scale ranging from -5 ("Least relevant to my work with ELLs") to 5 ("Most relevant to my work with ELLs"). Semi-structured interviews followed to explain decisions. As a result of data analysis, two factors emerged, indicating that participants' perceptions on task relevance differed by professional roles and educational settings. The participants also favored didactic online tasks over interactive tasks.

Vu, Cao, Vu, and Cepero (2014) examined factors that contributed to the success of online learners in an OPD course. Data were collected using an online survey and learners' activity logs in an online professional development course for 512 in-service teachers. The findings showed that there were several factors affecting online learners' success in online professional development a few of which were age (successful online learners were between 25 and 34 years of age), self-discipline (learners needed to have self-discipline), seeing the course as administrator expectation (learners needed to see the course as their school administrators' expectation).

Collins and Liang (2015) conducted a study to identify the features of high quality OPD designed to support teachers with formative instructional practices (FIP) to enhance classroom instruction. 895 educators participating in the FIP OPD responded to a survey. The results of the study suggested many inconsistencies between the high quality OPD that theories suggest, and the actual OPD designed, delivered, and implemented. The study identified specific aspects of this FIP OPD that can inform future online professional development in order to improve quality in other large scale or statewide school improvement initiatives.

McNamara (2010) conducted a study to investigate OPD models. K-12 teachers from fifteen states, who participated in some type of online professional development were invited to complete a survey to provide insight about the impact of online professional development on their teaching, learning, and classroom. Of the 328 teachers who responded, three people were interviewed to learn more about their particular OPD experience. The results of the study suggested that participants highly valued OPD because of a number of factors: (i) convenience, accessibility, and ability to self-pace and differentiate learning, (ii) its unique potential to foster reflection, deep thought, and analysis particularly when there is the potential to interact with an online professional learning community over time. Additionally, the findings suggested that teachers thrived on the interaction and sharing of ideas between colleagues in job alike situations and when they participate with face-to-face school or grade-level teams online, they reap even greater learning benefits. The majority of participants found that OPD helped them improve their knowledge of curriculum and instructional strategies as well as their technology skills. They learned ways to improve their classrooms to meet the needs of diverse student populations and helped validate effective practices that were already firmly in place.

Reeves and Pedulla (2013) conducted a study using data from a large-scale OPD initiative to investigate antecedents of self-reported changes in teacher knowledge, classroom practice, and student achievement. The results of the study confirmed that OPD evidenced for the validity of the teacher-practice-student achievement conceptual framework. The study confirmed that teacher knowledge predicted improvements in classroom practice, which in turn predicted improvement in student outcomes.

Conclusion

In the current stage of educational technologies there is sufficient evidence in previous research that OPD has advantages. Its design has been studied in relation to different disciplines that used it. The effectiveness of OPD seems to have received considerable amount of attention and successful OPD models have been sought. Teachers participating in OPD seem to find it more accessible and more suitable for their different needs than face-to-face professional development.

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