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Web-Based Tools and Environments for Teachers' Professional Development

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Abstract

Today, teachers and students spend most of their time on the Internet. They use the Internet not only for communication, playing games, having fun, listening to music, watching movies and sport games, shopping, and so on but also use for getting information about lessons, learning activities, researching and improving themselves. Using internet resources or web media it is possible for teachers to be able to access new methods, techniques, materials and activities related to their lessons, and be aware of their domestic and international colleagues' practices. By this way they develop themselves in terms of personal and professional aspects. In this study, web based applications, tools and resources that support teachers' professional development on the internet are introduced. In addition to Facebook, twitter, YouTube, blogs and wikis that teachers use personally, they can also benefit from e-learning tools such as Educational Information Network (EBA), which is offered to teachers by Ministry of National Education and webinars for professional purposes. These are not only a formal education and training portal, but also serve as a professional development tool for teachers. In this context, this study discusses how teachers can enrich learning-teaching practices through these web resources, how they can communicate in an informal way with their students and colleagues, and how they can improve themselves professionally.

Key words:professional development; teachers; internet; web based tools and environments

Introduction

Education has been one of the most important determinants of social change in the contemporary society where social, economic and technological developments accelerate this evolution. Therefore, the process of transition from the industrial society to the information

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society has affected the needs of both education and knowledge. Because education is crucial for the development of people's ability to use their potential more effectively and to shape development who underlies the basis of society and the most important source of wealth. Along with the rapid social change, teachers have also a great responsibility to educate qualified individuals who attach importance to knowledge. This is because one of the people who have undertaken the most basic task of contributing to the learning process of the individual is teacher. Teachers are also an existing psychological force that can have potential effects on students' cognitive, emotional and social development (Bandura, 1969). In today's educational system, where the constructivist learning approach is accepted teacher has both been the person who conveys knowledge and has been the person who shapes, guides and facilitates learning-teaching processes of students.

It may be possible for teachers to take part in the lives of individuals in accordance with the expectations of the information society, not only the development of their students but also their own development. In this sense, teachers are expected to be creative, critical thinking, questioning, researching individuals. Teachers must be individuals who learn to learn first beginning from the teacher training process to the end of their professional life. Because only the teachers who can develop themselves in professional sense will make a difference in a rapidly changing society with the new possibilities provided by scientific and technological development. The information age challenges the teaching profession and forces to change as is the case with all traditional institutions and professions (Özcan, 2011). In addition, many studies have shown that continuous professional development is an important element in successful educational systems in terms of enhancing teacher qualifications and student achievement. (Rockoff, 2004; Rivkin, Hanushek&Kain, 2005).

Despite the fact that the experienced development and change is on a global scale, but each community created its own education system; it can be said that each society has formed its education system and shaped this system according to the knowledge, experience and values that exist in its culture. Turkey is a country with a very good potential for teacher training. This is exemplified by the fact that the theoretical and practical education given in the faculty of education is a total of four years, the periodical restructuring of educational programs, and the availability of post-graduate training opportunities in the field of educational sciences. It is well known that proficient and self-proven teachers will increase the level of education. Teacher is the most important force that enables a school to succeed or fail, to develop the individual skills of the students, to train with values that are useful to them, the nation and humanity (Özcan, 2011). In other words, an education system is as good as its teachers (UNESCO, 2014: 9). Therefore, professional development is of great importance for teachers to be more productive in the process of teaching and learning. Fullan and Steigelbauer (1991) emphasize that professional development is the formal and informal learning experiences that an individual has through his / her lifetime, beginning with the teacher training process. Day (1999) defined professional development as a process that gave conscious and planned learning experiences that directly or indirectly benefited the individual, a particular group or a school to improve the quality of education in class activities.

Continuing professional development, in the most general sense refers to the sum of all the formal and informal learning that individual has undertaken throughout the his or her career including the processes of (pre-service training) preliminary to profession, performing the profession (in-service training) to the retirement and change in one's professional and personal role (Craft, 1996; Fullan, 2001, cited in CeylanveÖzdemir, 2016). The two theoretical perspectives come to the forefront when considering the factors that affect the



learning of the teachers who need to be good learners as well (Coburn, 2004; Nguni, Slegers&Denessen, 2006):

- Psychological factors (teachers' cognitive processes and motivations)
- Organizational factors (leadership, teacher collaboration, staff relations and communication, focus of audit, learning opportunities). All these variables suggest that professional development should be continuous.

Teachers experience a vast range of activities and interactions that may increase their knowledge and skills and improve their teaching practice, as well as contribute to their personal, social, and emotional growth. These experiences can range from formal, structured topic-specific seminars given on in-service days, to everyday, informal “hallway” discussions with other teachers on instruction techniques, embedded in teachers’ everyday work lives (Desimone, 2009). Teachers attend to short term in-service seminars, conferences, workshops and courses for professional development which usually organized by the Ministry of Education. In addition to these, teachers can contribute to their professional development through activities such as visiting other schools, conducting individual or joint research, forming study groups, participating in certificate programs, mentoring or coach, establishing informal dialogues with colleagues, and so on.

In addition to this, it is thought that the developing mobile and online technologies are also very effective in maintaining the professional development of the teachers. For the professional development of teachers, the availability and usability of computer and web-based programs is increasing (Laferriere, Lamon, & Chan, 2006). Departments of education, school districts, universities, foundations, professional organizations, and even broadcasters have all produced computerized programs in various forms (e.g., podcasts, webinars, online courses, and multimedia software programs) for teachers (Fisher, Schumaker, Culbertson, Deshler, 2010). Moreover, many organizations have embraced web-based and online programs because such applications make it possible for teachers to improve their professional development and reduce the cost of the organization's past problems (Walker, Downey, & Sorensen, 2008; Abbott, Greenwood, Buzhardt& Tapia, 2006).

For example, in Turkey, a website called www.eba.gov.tr has been designed by the Ministry of National Education for teachers. This website offers interactive materials that facilitates learning processes for students in class time, and provides an opportunity for complement and overcome learning deficits in off-hours. In addition, teachers also can benefit from this website. In this way, teachers have access to resources, materials and documents related to their lessons, and they can even use them on smart boards or computers in their classrooms.

In addition to the web-based services provided by such central authorities, there are also web sites created by private or non-profit organizations or individuals that serve the professional development of teachers. For example, through social networks such as YouTube, Facebook, twitter, teachers both can share their own practices with other colleagues and in educational settings they discuss and exchange ideas. Teachers can write articles, share their views, or even give seminars to their colleagues and students through web 2.0 tools such as blogs, wikis besides web based applications like webinars.

Method

Research Model

In the present study, which aims to introduce web based professional development tools and environments for teachers, survey model was used. According to Karasar (2005), the survey model is a type of research which aims to describe the situations existing in the past or present. Accordingly, in this study, a descriptive survey model was used in order to demonstrate web-based programs and activities aimed at contributing to the professional development of teachers and performing more qualified learning-teaching activities.

Data Collection and Analysis

In the study, the data were obtained by literature review based on internet or printed sources. According to Balcı (2006), literature review is a process consisting of collecting data and discussing the importance of the collected data, establishing the relation to the problem and classifying the information. In this method, the data is intended to collect by examining the present resources, documents and files etc.

Descriptive analysis technique was used in the analysis of the data. The collected data were examined by considering the purpose and the scope of the study then compared, the non-related ones were eliminated, the related ones were arranged and presented in the form of findings. The data obtained is limited to resources in the Internet and printed materials as of November 2016.

These kinds of activities are very important for teachers' personal and professional development by means of individual and informal ways. In this context, this study aimed to introduce the web-based tools and environments which contributed to increase the professional development of the teachers and in order to create awareness on this issue for the teachers.

Findings

In recent years, performing professional development activities on the internet becomes more and more popular both for presenting current information and accessing more people. Although, professional development activities usually carried out face to face with teachers, in the last years, web based in-service training and professional development activities have become crucial due to the assumption that teachers are working individuals. Web-based professional development can be accomplished by teachers in a variety of ways and mediums. In other words, there are many resources and tools on the Internet that help teachers to improve their professional development.

Social Networks

One of the tools on the Internet that provides professional development of teachers is social networks. Although social network tools such as Facebook and twitter are usually used for communication or entertainment purpose, they can be used as a professional development



tool. Social network has an aim that allows learners or teachers to reflect on their teaching and learning experiences (Jones, Blackey, Fitzgibbon, Chew, 2010, Boyd & Ellison, 2007; Cited in Gülbahar, Kalelioğlu&Madran, 2010). Besides, social networking sites can be defined as web-based services in which the limits of the user information are wholly or partially open to other users within a certain system and the users who are connected within the system are listed and shared among them.

Teachers communicate with each other through these networks and share their teaching practices and experiences. In this way, a teacher can share knowledge, practice, or experience with thousands or even millions of colleagues. In the social networking medium, individuals can publish their own content and share it. In addition to this, they can find a common ground for mutual interests and expectations to create, share or discuss content in a collaborative way with rich communication and interaction (Mazman, 2009). According to Barcelos, Passerino and Behar (2010), such networks can also contribute in continuing teacher education or professional development, as they allow them to actually experience the advantages of “Internet Social Networks” functionalities and, therefore, feel confident to use social networking with their students (Barcelos& Batista, 2013).

E-Learning Tools

There are a large variety of e-learning tools that help students to learn or support the knowledge they learn in school and contribute teachers to develop themselves in respect to professional. These e-learning tools can be designed in formal or informal forms. Educational Information Network (EBA) and webinar are introduced as e-learning tools for professional development of teachers here.

One of the formal e-learning tools is EBA, which offered to teachers and students by The Ministry of National Education (MoNE). First of all, MoNE is responsible for the professional development of teachers in Turkey. This institution organizes various staff development programs at the central or local level such as workshops, seminars, courses, conferences, etc. in order to make teachers increase their knowledge, skills, experience and develop themselves professionally. In addition, MoNE designed a web site called www.eba.gov.tr (Educational Information Network), which aims to provide resources and materials on the internet both for the students and teachers. It also aims contribute to the professional development of the teachers. In this website (EBA), several videos, animations, e-books, e-magazines, audiovisual and visual materials, e-courses, measurement and evaluation activities (questions) are presented for the use of teachers. The resources and facilities offered by the EBA are intended to help teachers providing more qualified instruction and ultimately enhancing their professional development.

All e-content published by the Ministry of National Education in EBA is open to public use; teachers can share their activities as a report, products as an image or sound and also ideas, stories, drawings and photographs on the site. The fact remains that they ask or answer questions, write comments and dedicate them all for everyone's use. In this respect, the contents that presented and managed electronically facilitates accessing to information and learning with sharing the reports on education by the shareholders and using them effectively. So that the share process from different parts of Turkey can contribute to the providing equality of opportunity in education (Yılmaz, 2013). EBA also has a blog page to share teachers' problems, experiences, ideas and good practices in the learning-teaching

process. Teachers can both write their experiences on this blog and read the diaries of other colleagues.

In addition, there are various educational web resources on the internet and presented to the teachers' service which developed by the non-profit organizations or individuals. They also let teachers to benefit as a member or without membership. Teachers can use visual, auditory or multimedia materials and documents which they obtain from these sources. Thus, they can enrich their lessons and help students learn better. At each level of education (from the pre- school to the high school), there are websites that aim to meet the educational and professional needs of teachers in almost every field or branch.

Recently one of the most common tools among e-learning tools is webinar. Webinar is a union of 'web + seminar' which simply means a seminar over the internet (Verma and Singh, 2010). Webinar is a system that enables to make presentations, trainings, workshops, meetings and seminars on the internet by audio and video. It usually has a function that allows chatting and asking questions in real time (Buxton, Burns & De Muth, 2012). Teachers can use webinar to provide online training and more informal "work hours" discussions with all participating students. The main benefits of the webinar are: "Possibility of monitoring pre-recorded webinar, saving time and cost, instant and real-time file sharing, distance learning, ease of use for participants and interaction" (Mohorovicic, Lazic and Strcic, 2011).

Video Sharing Tools

There are many video sharing sites on the Internet such as YouTube, Dailymotion, Teacher Tube, Edutopia, Classroom Clips etc. for teachers. These video sharing sites make it possible to watch videos from various subjects, even to share videos through uploading. YouTube is the most known among them. YouTube has an educational video channel. YouTube Edu channel is just for education and it can be found primary and secondary education, university-level videos, and even lifelong learning. YouTube Edu also allows users to share videos online. Today, millions of educators or students publish educational or instructional videos on YouTube and share them with others. Videos on YouTube Edu also provide opportunities for learners as well as teachers' professional development. Teachers can open channels on YouTube so they can broadcast their educational practices or scientific studies as well. Hence, the use of this tool also provides teachers materials to use in the learning-teaching process which was submitted by other users. The use of these materials in the teaching-learning process provides facility in understanding for learner and lecturing for teacher. The effective use of YouTube and similar facilities can provide tools both to support teachers' instruction in the classroom and to accelerate professional development (Fulton, Glenn, & Valdez, 2004).

Similarly, in other video sharing sites, teachers and students can enhance their knowledge and experience by watching or sharing videos in almost all educational subjects. In fact they are also professional development opportunities for teachers.

Web 2.0 Tools

Blogs or weblogs, one of the Web 2.0 tools are increasingly used by teachers in recent years. Blogs are online personal notebooks that can be created without complex and advanced web knowledge, hyperlinked to other web pages that can be supported with text and graphics,



authors can get reviews about the articles, and chronological archiving of history messages. Messages created using weblogs can be shared with the whole world. In today's social networks, journals also provide online environments for individuals to identify and express themselves (Bonnie, Diane, Gumbrecht, & Luke, 2004, cited in Şenel&Seferoğlu, 2009). Blogging can be used to build a “community diary” around a large project in which a group of learners can establish and maintain thoughts and share their insights (Oravec, 2003, cited in Loving, Schroeder, Kang, Shimek& Herbert, 2007). Through these weblogs, teachers can write and share experiences with each other about their problems encountered in the teaching process or class in order to improve teaching practices. Furthermore the above mentioned EBA (Educational Information Network) which was designed by MoNE enable teachers to build weblogs in order to share knowledge and experience and communicate with each other.

Similarly, wikis increasingly gain importance in education therefore it is an ideal tool for collaborative works to be done by both students and teachers. A wiki is a group of web pages that allows users to add content, similar to a discussion forum or blog, but also permits other users (sometimes completely unrestrictedly) to edit the content (Arreguin, 2004). The distinguishing feature of Wikis from blogs, discussion forums and other online systems is that there is no direct coded structure in this technology: the pages are interlinked and can be customized, also not presented in a reverse chronological, taxonomic-hierarchical or other predetermined order (Duffy and Bruns, 2006). The number of Wikis is increasing day by day in the field of education. The reason for this is that the structure of wiki serves many educational purposes. In general, it can be said that wikis are used for the following purposes (www.egitimvewiki.blogspot.com.tr): "Sharing, interaction and collaboration, updating, virtual communities, individual follow-up, research and evaluation-feedback ". Students might use a wiki to collaborate on a group report, compile data or share the results of their research, while faculty might use the wiki to collaboratively author the structure and curriculum of a course and the wiki can then serve as part of each person's course materials (Mader, 2006). Moreover, teachers can contribute to both their teaching process and their professional development by using wikis to keep and store information. In addition to wikis, there are also various forums on the internet that allow teachers to discuss and exchange ideas in educational settings. These online forums also provide important benefits for teachers' professional development like blogs and wikis. But, the forums differ from blogs and wikis in terms of aim, usage and structure etc.

Results and Suggestions

Nowadays, people spend a significant part of their time on the Internet. Individuals usually use the Internet for communication, playing games, having fun, listening to music, watching movies and sport games, shopping, and so on. At the same time, they use it for social, cultural and commercial purposes such as organizing or participating in various activities related to information, research, learning, work or occupation for educational and professional purposes. Via Internet, it is possible to reach the information they need in almost every aspect, follow events and developments that are happening all around the world, and develop themselves in many areas. In this context, teachers have the opportunity to access new methods, techniques, materials and activities related to their lessons using internet resources or web tools. Likewise, internet makes them aware of the practices of their domestic or foreign colleagues and thus to develop themselves in the personal and professional aspects.

Like almost every individual in society, many teachers commonly use social networks such as Facebook and twitter on the internet in a widespread manner. Although these social networks are mostly used for communication and sharing of personal information, teachers can make educational exchanges with their colleagues through these settings. For example, teachers can share their video or photograph of an activity in the class with colleagues in a friend group on Facebook, or through twitter teachers share their views on a problem in class and discuss it with colleagues. In a study by Akgün (2016), teachers reported that social networks are beneficial in terms of interaction with students, student follow-up, communication with colleagues, information acquisition, material support for lectures, information and resource sharing, task assignment, communication and easy access to information. On the other hand, in Tonbuloğlu and İşman's study (2014), teachers stated that social networks provide opportunities such as access to information or people (to colleagues and students), sharing of knowledge and interaction.

In many countries teachers are offered internet resources by education ministries or educational institutions in order to enrich and enhance their teaching practices as well as to contribute to their professional development. In Turkey, the Ministry of National Education has created a web site for teachers called "Education Information Network", with an extension of www.eba.gov.tr. This e-learning tool allows teachers to create blogs or read them by their colleagues besides a large number of multimedia applications. In this web environment, teachers can upload their teaching practices and activities to share with colleagues. In EBA, teachers are also allowed to share information, news, videos, materials, sounds, documents and magazines they have. EBA has blogs (diary pages) to share teachers' problems, experiences, ideas and good practices in the learning-teaching process as well. Teachers can contribute to their teaching process and professional development by sharing their experiences on the blogs.

Today, internet based applications are widely used in distance learning and education. The Webinar system, which is one of the e-learning tools becomes increasingly widespread in the field of education, brings great convenience to distance education and allows distance interactive lectures, conferences and meetings (Erturan, Çevik, Gürel and Çağiltay, 2012). Teachers can watch seminars or conferences via webinars given by field experts, even as a field expert, they can perform webinar activities and in this way contribute to their professional development.

Another web environment where teachers can benefit from educational and professional aspects is video sharing sites such as YouTube, Dailymotion, Teacher Tube, Edutopia, Classroom Clips etc. For example, on YouTube Edu or TeacherTube teachers can watch teaching practices, experiments, animations and lectures on their field of study all over the world. Moreover, teachers can open channels on YouTube so they can broadcast educational practices or scientific studies. In this way, teachers contribute to their professional development.

One of the tools that teachers can use to see mistakes and deficiencies and improve the quality of their teaching practice is blogs. Blogging can be used to build a "community diary" around a large project in which a group of learners can establish and maintain thoughts and share their insights (Oravec, 2003, cited in Loving, Schroeder, Kang, Shimek & Herbert, 2007). Especially studies about the use of blogs in education showed that through blogs, teachers communicate better with students, improve the ability of expressing oneself and make positive effects on their professional development (Arık and Seferoğlu, 2015).



Furthermore, Hou, Chang & Sung (2009) found that blogs serve as a channel for teachers to share information and experience and according to Brandon (Cited in Hou, Chang & Sung, 2009) blogs may be used for promoting teachers' interactions and acquisition of professional knowledge and development. However, in some researches, it has been found that teachers do not know much about these web tools (Horzum, 2010; Loving, Schroeder, Kang, Shimek and Herbert, 2007).

As a result, such web based educational tools or environments can contribute to the increase of teachers' knowledge, understanding and experience, their students to learn better, improving themselves in different ways and their professional development. In this context, it may be suggested to inform teachers such web resources or tools, and beyond that, to ensure that teachers benefit from them effectively, both at the level of Ministry of National Education and the schools.

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