

Three Birds with a Stone: Technology Integration in Language Education with Reverse Mentoring Model

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Abstract

Technology integration in education, how to do it effectively, how to help teachers gain the necessary competencies are among the most discussed topics in recent years. It is also known that in-service teacher training is full of problems and the desired outcomes cannot be achieved easily. Teacher training programs cannot equip future teachers with the required technological competencies. Reverse Mentoring Model suggested in this study is thought to help both pre- and in-service teachers to gain technopedagogical knowledge. By restructuring the teaching practice process, one of the most important components of teacher education programs, pre-service teachers, more equipped with technology knowledge, will mentor their in-service teacher during the teacher practice process, creating an environment in which both group of teachers will be learning from each other. The digital pool that will be developed as the output of the proposed model will include digital materials aligned with the curriculum.

Key words: Technology Integration in Education, Reverse Mentoring Model, In-service Teacher Training, Pre-Service Education, Teaching Practice, English Language Education, Digital Pool

Introduction

If the ultimate aim of education is moving learning beyond the classroom and encouraging lifelong learning, teachers should become the most hardworking students. A teacher group who is open to continuous learning both in their professional and personal lives will be the best models for their learners. The never ending rapid changes in the technological world in addition to the tremendous amount of information to learn make teachers' lives difficult to be able to cope with.

There is no doubt that discussions in recent years have focused on the place of technology in our lives, students' being digital natives surrounded with technology (Prensky, 2001), and its effects on their learning strategies, and as a result, the necessity of technology integration in teaching (Wang & Shen, 2011). Both the demands of learners and the competencies determined by decision makers require teachers to integrate technology in their teaching. However, it is not easy for teachers who are not digital natives themselves to be able to learn a new language and to teach with it at the same time.

With such rapid developments and high expectations, teachers' job is quite challenging. The fact that the language of technology used all over the world is English points out English classes as the first places to do technology integration. In their

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In their 2007-year report, National Council of Teachers of English [İÖÜK] requires teachers to be equipped with different competencies in the 21st century. Teachers are expected to be aware of the technology used by the students outside the classroom and carry it into the class as well as encouraging their learners to continue learning by themselves. Teachers are also expected to guide their learners towards critical thinking on the impact of technology on their learning and evaluate the reliability of the sources in addition to being aware of their technological competencies and get help from their students.

Similar to the IOUK report mentioned above, Ministry of National Education (MoNE) (MEB, 2008) indicated the necessity of teachers' being equipped with technological competencies as a requirement of professional competencies. Teachers are expected to encourage their learners to evaluate the sources with a critical eye and use them efficiently.

The Problems of In-service Training Programs

Despite the fact that 21st century learner characteristics are different and education should differ accordingly, problems are still being experienced in the integration of technology in education. One of the main sources of these problems stem from the teachers' not having sufficient professional competencies for using technology (Erdemir et al., 2009; Kılınç & Salman, 2006; Kocasarac, 2003; Koehler & Mishra, 2009; Yaşar et al., 1997). There is no doubt that teachers should be competent themselves for integrating new technology in their teaching. As indicated by Reinders (2009), technology integration in education has three requirements: teachers' being able to use technology, being able to create materials and activities using technology and teaching with technology. This proves that the effective use of technology in the classroom directly depends on teachers' being competent on the area.

Various in service training programs have been designed by the Ministry for helping teachers to gain the required competencies. Quite a big amount of finance has been spent for these trainings which address wide numbers and variety of audiences. For instance, according to the "Restructuring Panel and Workshop of In-service Trainings" report, organized by MoNE in 2010, 136,724,000.00 TL was spent on in-service training activities: 121.000.000,00 TL from the overall budget, 10.000.000,00 TL the funds, and 5.724.000,00 TL from the foreign loans (MEB, 2010).

Unfortunately, despite all the money spent it is difficult to say that these in-service training programs achieve the desired outcomes. There are problems both related to the content of the programs and the way the whole process is managed. Bümen, Ateş, Çakar, Ural and Acer (2012) analysed the last 10 years' studies focusing on in-service training programs in Turkey and listed the factors causing the failure of these programs as follows:

1. In-service programs are both qualitatively and quantitatively inadequate,
2. The content of these programs are determined without considering teachers' opinions,
3. Teachers state that they cannot find enough time and are unwilling to participate in these programs,
4. Programs generally do not go beyond transferring theoretical knowledge,
5. In-service programs are not continuous and systematic,
6. Trainers are incompetent and unprepared for the courses,
7. Programs are not designed considering the levels of the participants.

In addition to all these problems, according to Teaching and Learning International Survey (TALIS, 2013) not many teachers who participated in professional development activities found them effective. According to the same report, teachers stated the following reasons for not participating in professional development activities: these programs are not aligned with their teaching contexts, teachers cannot allow time for these activities and they cannot find appropriate professional development activities addressing their needs. All these problems conclude that desired outcomes cannot be gained from the current in-service training programs and indicate the need for alternative solutions.

Pre-Service Teacher Training and Technology Integration

The insufficient training of the pre-service teachers in integrating technology in teaching (Reinders, 2009; Rilling et al., 2005) is another source of the education problems. Although expected competencies from teachers have been stated in the reports of the various organizations and institutions, teacher training programs have not yet fully determined how teacher candidates should gain these competencies. How much teacher training content should include technology is still a matter of debate. The studies show that while academicians try to integrate technology in their own courses with their personal efforts (Solvie & Sunger, 2012), teacher candidates still suffer from how they can benefit from technology while preparing their own lessons (Willis et al., 1999).

The new generation of teachers, better equipped in the use of technology and use it intensively in their personal and social life, has been found to not have sufficient information on how to incorporate it with the instruction (Graham, 2008; Kabakci & Tanyeri, 2006). In their study, Stobaugh, McDonald and Tasselli (2010) found that while teacher candidates in mathematics, science and social studies use technology more frequently, foreign language teacher candidates have been identified as the group using it the least. Foreign language teachers have also been found to have a more positive attitude toward technology when compared with the teachers who graduate from

other areas (Gömleksiz, 2004). The main reason for this contradiction might be stated as the inadequacy of the foreign language teacher training institutions on education technology integration.

The studies also seem to confirm the above conclusion. Teachers indicate their social environments or individual efforts as the sources of their technology knowledge rather than their educational institutions (Kessler, 2006; Robb, 2006). In their study, Sharma and Barrett (2008) concluded that although teacher training programs include topics such as how to use electronic dictionaries, websites and smart boards and how candidates can create their own materials, all of this information cannot go beyond theory and guidance on how candidates can transfer this knowledge to a real classroom context is missing. What teacher candidates really need is to be able to establish the link between theory and practice and applying what they have learned in the courses in their own teaching (Luke & Britten, 2007). Studies in Turkey are reporting similar problems. Çoklar, Kılıçer and Odabaşı (2007) found teacher trainees experiencing difficulties in transferring their technology, pedagogy and content knowledge in teaching process. Similarly, Kabakci and Tanyeri (2006) observed that the content of computer and technology courses in teacher training programs include only theoretical knowledge.

Despite these problems experienced in the integration of technology in education; studies reveal that teacher candidates benefit from their acquired technological competencies both as a student and as a novice teacher. For example, Gomez, Schieble, Curwood and Hassett (2010), created a context in which teacher candidates and middle school students communicated via Moodle and examined how this dialogue contributed the cognitive process of future teachers. The results revealed that candidates improved their critical thinking and became better readers and writers while guiding students.

In a similar study, Pace, Rodesiler and Tripp (2010), concluded that technology instruction helped teacher candidates' knowledge of Web 2.0 tools and their applications in teaching, but more importantly, they became more collaborative, adapted a more positive attitude towards education and improved their problem-solving skills. Teacher candidates who participated in the study said they had a better idea of how well their students can learn to work in cooperation. Stuhlman (1998) found candidates having more contact with technology to have more student-centered approach and more confidence in their teaching skills. All these studies conclude that technology competence help future teachers to facilitate learning process of digital natives' as well as their own (Aydın, 2008; Brush et al., 2003; Leahy & Twomey, 2005; Nunan, 1999; Tan & Teo, 2012).

As a result, teacher education programs which cannot equip their future teachers with the knowledge of how to integrate technology would deprive them of the skills they would need in their professional development (Stobaugh et al., 2010).

Reverse Mentoring Model: A Solution to Both Pre-service and Inservice Teacher Training

This paper suggests restructuring the teaching practicum process, one of the most important components of pre-service teacher training, and combining it with the “Reverse Mentoring Model” as a solution to the problems experienced during both pre-service and in service training. It is believed that this model will enable the effective professional development of both groups of teachers. Knowledge and experience in mentoring are usually transferred from experienced to novice; reverse mentoring transfer from novice to experienced has been encountered in recent years frequently. “Reverse Mentoring Model” developed by the former General Electric CEO Jack Welch in the 1990s, has been widely used in various fields such as business, management, banking and as public relations (Chaudhuri & Ghosh, 2012).

With the rapid involvement of technology in our lives, the field of education has started to benefit from reverse mentoring in which digital native generation mentors more experienced teachers in using technology (Zachary & Fischler, 2009). Reverse mentoring model, as stated by Chaudhuri and Ghosh (2012) and Szebrat (2012) is a “win-win” situation: while the young generation shares their knowledge in a particular subject with older people, they benefit from their experience, that is, both groups mutually learn from each other in this mentoring model. As also indicated by Leh (2005), this model, creates opportunities where mutual learning takes place in a collaborative and constructive environment. While reverse mentoring shares many features and the advantages of traditional mentoring, as Chen (2013) suggests, the changing characteristics of the workforce, and especially rapidly improving technology necessitates changes in the dynamics of traditional mentoring. Murphy (2012) believes that reverse mentoring increases equity among the members of an institution and drives innovation in addition to bridging technology gaps and encouraging lifelong learning.

The studies in the field of education show that technology integration problem can be solved with reverse mentoring model. Franklin Turner, Kariuki and Duran (2001) point out that in-service teachers gained new skills with the mentoring they receive from instructional technology students. In a similar study Denton, Davis, Smith, Strader, Clark and Wang (2006) matched the K-12 teachers with pre-school teachers and found that participant teachers gained new technology knowledge as the result of this mentoring program.

There is no doubt that the teaching process is one of the most important components of teacher education. In this process, teacher candidates with the help of more experienced mentors find the opportunity to practice what they learned during training. As Kudat (2008) believes, communication between pre-service teachers and their mentors is extremely important. Mentor teachers are expected to be a guide from various aspects for the pre-service teachers (Kwan & Real, 2005). Pre-service teachers are expected to benefit from the experience of their mentors and become better

equipped for their future profession. Unlike the traditional models, both groups of teachers where they teach and reflect together in this co-teaching benefit from the process in many ways (Gallo-Fox & Scantlebury, 2016).

With the model proposed in this article, while mentor teachers who are more experienced in the field will guide teacher trainees, teacher trainees who are better equipped with the knowledge of how to use technology in education will simultaneously guide their mentors in technology use. So that both sides will mutually benefit from each other's experience. Mentor teachers will be able to benefit from this learning process which is designed according to their individual needs and which is aligned with their own curriculum. Thus, they will not only be able to use digital materials which are prepared for their own learners in their own contexts, but also will learn how to prepare these materials individually.

So what is this model and how will the process work? The processes of the proposed model are described below in Figure 1 below.



Figure 1. Reverse Mentoring Model

The most indispensable component of the Reverse Mentoring Model is equipping the pre-service teachers with the necessary technological knowledge which is alligned with the content and pedagogical knowledge provided by the teacher education programs. In this paper a course named “Digital Material Development” is suggested in order to prepare pre-service teachers with the necessary skills and knowledge. The

aim of the course is to increase awareness of how to integrate technology in education while enabling them develop digital materials. Creating an environment in which teacher candidates can learn from each other, follow the recent developments in the world, develop materials appropriate to the characteristics of the student group they will teach and most importantly become critical thinkers should be the main aim of the course. The content and the process of “Digital Material Development Course” are presented in Figure 2 below:

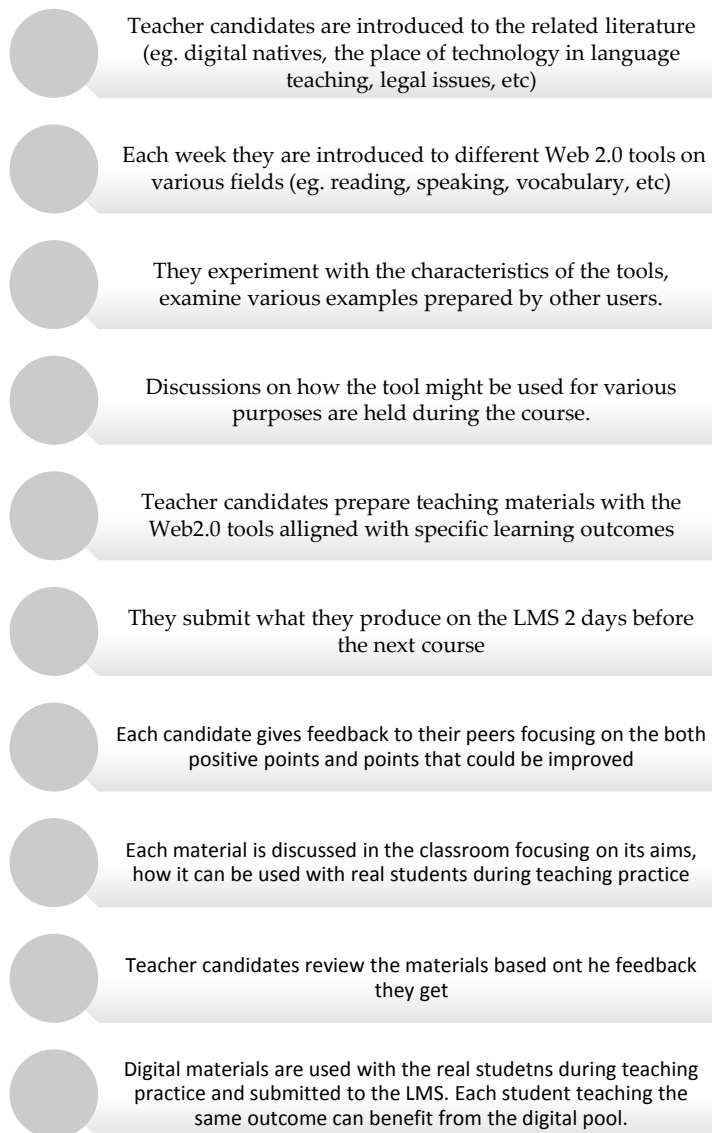


Figure 2. Digital Material Development Course

Training teachers with the necessary competencies which will be expected from them will minimize the problems they will experience when they start their profession. Training pre-service teachers how to use technology not just by informing them but by integrating technology as a part of their own education will lead people to use it more effectively. Studies conducted reveal that teacher trainees are open and willing to new developments and these kind of practices create learning opportunities which help their personal learning outside the classroom as well as being a good role model (Basal, 2015).

Benefits of the Reverse Mentoring Model

“Reverse Mentoring Model” which creates a framework where teacher candidates mentor their mentor teachers in technology integration during their teaching practice process is suggested as a solution for technology integration problem in this study. This suggested model will not only help both pre service and in-service teachers professional development but also the outcome of the process will be able to address the needs of the country. Three main outcomes to be obtained from this model can be summarized as in Figure 3.

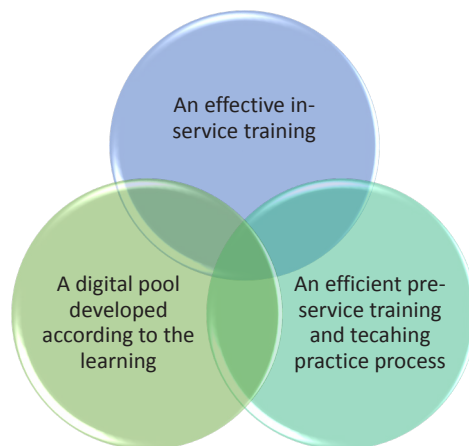


Figure 3. Three outcomes of the model

The most important of these benefits can be summarized for in-service, pre-service and the outcome that will be gained at the end of the process as follows:

For in-service teacher training;

1. In-service teachers will be able to learn the necessary knowledge from teacher trainees who closely follow the recent developments and who are adequately equipped with the necessary technological competencies.

2. In-service training will take place in their own contexts and will be able to directly respond to their needs.
3. In-service training will be converted into a continuous and context-specific form.
4. Teachers will be able to develop digital materials seeing practical real examples as models.
5. Throughout the whole process teachers will be able to learn from each other and continue improving themselves.

For pre-service teacher training;

1. Teacher candidates will be equipped with the necessary technopedagogical competences before they start their careers.
2. Candidates will improve themselves with the help of the knowledge and guidance of the experienced mentor teachers they work with during teaching practice process.
3. Pre-service teachers will find the opportunity of using the digital materials they have developed in a real classroom context and receive feedback from experienced teachers from students.

For the outcome at the end of the process;

1. Digital materials aligned with the learning outcomes and the needs and characteristics of Turkish students will be developed.
2. Digital materials will be collected in a pool and a rich source of digital materials that can be used by all the teachers all over the country will be created.
3. All the teachers will be able to contribute to the material pool, so teachers will learn from each other all over the country.

Conclusion

Current in-service teacher training models should be redesigned in order to help teachers to be equipped with the competencies expected from them. A new framework which does not require time and space from teachers and which is designed considering the needs and expectations of the teachers is essential. The frame suggested in this paper will enable teachers to gain technological competencies required from them as well as apply what they gain in their own teaching.

As a result, the proposed reverse mentoring model will serve both pre-service and in-service teacher training and will be a solution for the problems experienced during traditional in-service training models. Thus, both groups of teachers will gain technopedagogic competencies. It will be possible to have teachers and teacher candidates who can address the characteristics of target students with appropriate teaching

methods and techniques (Pedagogical Content Knowledge) (Bilgin et al., 2012) and can integrate technology effectively (Technopedagogic Knowledge) (Mishra & Koebler, 2006) have technopedagogic content knowledge (Kılıçer, 2011; Yurdakul, 2011). With “Reverse Mentoring Model” we will be able to take a step in finding a solution to one of the most important needs of our country. A continuous, need-focused and goal-oriented training will be carried out.

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