TECHNOLOGICAL FORMATION — ANALYZING TEACHERS' FORMATION COURSES ON THE USE OF NEW TECHNOLOGIES IN EDUCATION

Maria Eugenia Witzler D'Esposito
Applied Linguistics and Language Studies
Pontifícia Universidade Católica de São Paulo
Brazil

Andrea Almeida Perina
Brazil

Abstract

This communication examines two extension modules of continuous teachers' formation on the use of new technologies in education offered in two cities in the State of São Paulo, Brazil. The objective is to think about the formation provided and the aspects which are relevant to teacher's technological formation. The theoretical constructs are related to the new vision of learning (Delcin, 2005); the new education and the use of new technologies (Braslavsky, 2004; Martínez, 2004; Sacrístan, 2007); teachers' role (Kenski, 2001; Lopes, 2005); digital literacy (Almeida, 2005); and computer assisted language learning (Barros & Cavalcante, 2000; Warshauer & Healey, 1998).

Introduction

Due to the use of new technologies in education we have new interaction patterns, the redefinition of teachers and students' roles with knowledge being constructed in a different way. Therefore, we need to provide pre-service, in service and continuous education formation courses to teachers on the use of new technologies in education as well as to investigate the existing ones to know the kind of formation being offered and, if necessary, to redesign them so that they can meet the existing needs.

Nowadays, there is a new vision and concept of what teaching and learning is, with knowledge construction being shared, with new resources and the use of technologies in education. A new society (named information society) calls for the redefinition of roles, changes in the way courses and activities are designed. There is a new concept for literacy, a broader one, associated to the digital context. Elements that do not occur isolated but are intrinsically related. Thus, there is room for investigation and reflection which is the goal of this study: to describe and analyze formation courses for English language teachers that aim at contemplating the aspects mentioned above as well as developing digital literacy on its participants.

Theoretical Constructs

New dynamics in learning are needed because there are new ways of accessing information, thinking, reasoning, and many times with the chance of using new technologies in education (Delcin, 2005, p. 56). Learning to learn is the current dynamics to Delcin (pp. 61–62) and according to her, it is important to know how to ask questions, how to access information and, moreover, to know how to convert information into knowledge. Education should develop the capacity to propose and solve problems, make people curious, explore the doubt, rethink the thought, "develop argumentation, discussion, prediction, development, constant attention and the sense of opportunity" (p. 63).[1] Knowledge construction would, then, depend on the experiences people lived when doing some investigation and on people's own style in retrieving and organizing information. Delcin believes new information and communication technologies (NICTs)[2] have a relevant role, although its introduction in education does not aim at solving or extinguishing the existing educational problems.

Martínez (2004) emphasizes that the incorporation of new technologies does not aim at substituting the technologies that are currently being used (and will continue being used) (pp. 96–97). The goal is to complement them, so that the teaching learning processes become more efficient. Besides, access to information does not guarantee its conversion into knowledge; in order to do so, logical thinking, reasoning and critical judgment are needed.

To Braslavsky (2004) education is much more than technological support and the author assures that it depends on human components, ideals and values (pp. 77–81). But Braslavsky reminds us that information transmission and learning are distinct things, with learning being not connected to the new technologies as believed (p. 90). Sacristán (2007), on the other hand, sees education as a phenomenon and states that the most used metaphor to characterize it is *information society* (p. 43). Sacristán highlights that other ways of finding knowledge emerge as well as new environments in which learning is possible (pp. 42–47). Information is now a determining factor as well as the centre of productive relations, inclusion or exclusion. It indicates new relations among individuals, cultures and social classes but it is important to recall that to educate is not only to inform, but also to prepare citizens and develop personalities (p. 47).

---

[1] All in text citations, excerpts and illustrations that were originally in Portuguese have been translated to English by us. If inaccuracies appear they were also present in the original.

[2] The author understands by NICT not only Internet, but all the microelectronic, informatics and telecommunication technologies that make acquisition, production, storing, processing and data transmission possible (in the form of image, video, text, or audio).

Having in mind this new vision of education and learning, it is also important to think about the teacher's role. Lopes (2005) sees the teacher as a process organizer, that is, a driver on new roads (pp. 34–36). Lopes presents the teacher as an interface, since the teacher will build bridges between students and the information and will also drive and show ways, making the construction and acquisition of knowledge easier (pp. 40–41). The teacher is a researcher-educator, a promoter of bonds and sensibility. The teacher is responsible for supporting the student when she/he is organizing information, in developing critical analysis and reflection, and always counting with the unexpected.

Kenski (2001, p. 96) agrees with Lopes but for her the teacher is now an agent of memory, value, innovation, and educational memory. For memory agent, she understands the teacher who is able to accomplish interactions and exchanges among languages, spaces, time and knowledge, building bridges between students and technologies. The agent of values influences behaviors and attitudes and fosters identity and sociability. The agent of innovations helps in the comprehension, use, application and evaluation of available and utilized innovations. And the agent of educational memory deals with knowledge that is theoretical, technical, abilities, attitudes, pedagogical rites and other aspects taught and practiced in institutions that reflect specific ways of thinking, of feeling, of acting. These duties complement each other and are inseparable from the act of teaching/learning, thus, the teachers' role enlarges instead of being extinguished in this new learning/teaching context.

Along with these aspects and notions come the concepts of *alfabetização* and *letramento*,[3] terms that are related to digital literacy. Almeida defines *letramento* as the appropriation of reading and writing with the aim at practicing citizenship (2005, p. 172); this is, having conditions to access the culture of the literate society, using reading and writing in social practices. According to the author, writing is different from *alfabetização*, since it refers only to the ability of coding and decoding the writing, whereas *letramento* refers to apprehending this writing technology aiming at using it socially. Therefore, the access to the information and communication technologies (NICTs) needs to be integrated to a formation work which promotes conditions for the development and autonomy — the capacity to search, to select meaningful information, to interpret, to analyze, deal with and solve problems that favor the formation of critical citizens. To promote technological fluency is not simply learn a code or technology, it means using the information and communication technologies (NICTs) to evoke meaningful, autonomous and continuous learning, to allow citizenship and enable knowledge production that will lead to better living conditions for people and society.

---

[3] In Portuguese (language in which this paper was originally written) there are two terms to describe two different concepts of literacy. Since the English language does not offer the two terms, in this paper, we are going to use the terms *alfabetização* and *letramento*.

Offering computers and courses on computer use, aiming at promoting digital literacy, is not enough. These courses can allow people to make better use of technological resources but they may not favor "the formation of critical users as well as competent professionals to use the information and communication technologies (NICTs) in their activities" (Almeida, 2005, p. 176). At the same time they may generate development and promote exclusion, inequality and detachment. According to Almeida what information and communication technologies (NICTs) may bring, among other things, as effective contribution to the literacy are: dialogue; thought reconstruction; analysis of one's own representation (with the possibility of re-elaborating), and a new concept of mistake with space for analyzes, revision, reformulation and understanding that may lead to evolution and to learning (pp.183–184).

These issues do not emerge isolated but they are connected to the teaching-learning theories which help us understand how the computer resources support education at school, help us understand how students learn and what aspects of this learning may be explored by computer resources (Barros & Cavalcante, 2000, pp. 21–22). With behaviorism, there was the behavioral CALL (Computer Assisted Language Learning) that according to Warschauer and Healey (1998, p. 57) served its needs once it configures itself by repetition with the machine providing drills, grammar explanations and translation tests in various levels of language competence. Then, in order to serve the Constructivist approach, computer systems of non-linear access to information appear along with the emerging techniques of Artificial Intelligence that enabled various ways of searching for information with knowledge construction more adapted to the cognitive characteristics of the students. To follow the social-interactionism, the communicative CALL appears, in which the computer activities focused more on the ways computer is used, teaching implicit grammar, allowing and encouraging the students not to bond to pre-fabricated language and making use of the target language, with teachers trying to integrate students in authentic environments and language by means of tasks, projects and contents using different abilities (Warschauer & Healey, 1998, pp. 57–59).

The Modules

This communication aims at examining two extension modules of continuous teachers' formation on the use of new technologies in education offered in two cities in the State of São Paulo, Brazil. In order to do so, firstly, we will briefly present the courses — their objectives, contents, participants and results — and later on, compare and contrast them. For the illustrations we will use extracts provided by four participants (two from each course) who were chosen at random. For this present paper, all information collected in both modules received qualitative appreciation by the teachers/researchers.

Module Number 1
This 32 hour course of English Language teachers' formation for the use of the computer was offered as a *Lato Sensu* specialization in a private university in the State of São Paulo. The course had 22 participants who met once a week for 4 hours, during 8 weeks, adding up to 32 hours. The goals of the course were: (1) to discuss the concept of literacy

(*letramento* and *alfabetização*), (2) evaluate, and (3) create materials for the use in the English language classroom. Each meeting was divided in two moments: the first one was meant to be discussion and reflection about theoretical constructs in a classroom (totally equipped with multimedia projector, computer with broadband Internet access, projection screen and video cassette player) and the second moment, in which participants headed to a computer lab with twenty computers connected to broadband Internet, to experience the use of the machine and its resources, performing practical activities.

At the beginning of the course, I asked participants to answer a questionnaire aiming at: identifying needs and wishes; their view on the teacher and student roles; the access they had to equipment and Internet; their current use of the computer and representations of the participants in relation to the use of new technologies in education. The information and extracts bellow help us better picture the participants and helped the teacher/researcher pre-design the module:

Table 1: Data provided by module number 1 participants in the initial questionnaire

Participant	Julio	Elaine
Formation	Languages English/Portuguese	Translation: Portuguese/English
Use of computer	E-mail	Office and Internet
Access	Home	Home
Computador in classes	Never used it	To show images and to use electronic dictionaries
Teachers' role	Mediator	Mentor
Why to use the computer in the language class?	To simplify the teaching process	Provide the students with variety
How to use the computer?	As an extra tool	With specialized software to the teaching of English, or by means of an on-line radio.

When asked what is needed for the teacher to use the computer in the classroom the participants mentioned:

> No doubts that the teacher has to have full control of the machine and its resources, because without these the teacher could eventually become a student of his/her own students. (Julio)

> Handle the tools chosen for use, as well as its commands and particularities. (Elaine)

Based on the initial questionnaire information, the classes were designed. The theoretical and practical aspects approached were: learning approaches and computer resources;

teacher's role; the use of computer in education; CALL (Computer Assisted Language Learning); literacy (*letramento* and *alfabetização*); hypertext; word processor (Microsoft Word); slide show (Microsoft PowerPoint); Webquest; blogs; e-email and e-lists; search tools; and the design of a webpage in Html and Microsoft Front Page Express.

After eight weeks, the participants were questioned about the use of the computes in the classes they taught, as well as the teacher they believed they were at the moment. The extracts below show both aspects:

> Now, I can define myself as a teacher who is able to use a variety of tools and resources offered by the computer, consciously. (Julio)

> I feel competent to configure work in the Microsoft Office (Word, Power Point) and Internet. However, now, I am aware that there are ways, various ways to arrange a same content and to work with it, making better use of tools and resources as well as adapting content according to the need that the moment demands. (Elaine)

> I am certain that after this course, when teaching, I am going to be a teacher more aware than I was before. (Julio)

> A professional who helps the student build knowledge. A teacher who does not have prompt answers to everything, a teacher who allows the student to think, to create his/her own way, a teacher who, at the end of the process, takes part on the issue. (Elaine)

Through the answers, we can notice that significant changes occurred that lead us to believe that there was a certain level of *letramento* by the participants, once that there is concern with the use of the computer which goes beyond operational domain of the equipment.

Module Number 2

This 36 hour course for language teachers on the use of new technologies in Education was one of the modules offered as a *Lato Sensu* specialization in a private university in the State of São Paulo. The course had 18 participants and 4 hour meetings per week, adding up to 9 meetings. Its goals were: (1) to make teachers aware of the possibility of using new technologies, enabling them to use technological tools that would help on the teaching-learning of languages; (2) to provide a reflective view about the possibilities, advantages and limitations of the use of new technologies; (3) to develop critical sense and autonomy to evaluate, adopt and adapt the technological resources according to their teaching context and, (4) to know resources and become aware about the need of continuous research on the use of new technologies. Each meeting was divided in two moments: in the first one there was discussion and reflection in the classroom (equipped with multimedia projector and a computer connected to Internet) about theoretical aspects and in the second moment participants headed to a computer lab with twenty computers

connected to Internet to experience the use of the machine performing practical activities, using and exploring some tools.

At the first meeting, a questionnaire was answered by the participants. The objective was to identify their needs, wishes, and representations in relation to the use of new technologies in education and the teacher's role; their access to equipments and Internet; information about how they used technologies in their practice and formation; and their relation with technologies, more specifically, with the computer. The information and extracts below help us better picture the participants and helped the teacher/researcher pre-design the module:

Table 2: Data provided by module number 2 participants in the initial questionnaire

Participant	Monica	Sophie
Formation	Languages English/Portuguese	Languages Spanish/Portuguese
Use of computer	Word, PowerPoint, Internet and Photoshop	Word and Internet
Access	Home and work	Home and work
Computador in classes	PowerPoint	Video clips and PowerPoint
Teachers' role	Raise interest and curiosity	Make things more dynamic
Why to use the computer in the language class?	Interaction, more dynamism	Allow autonomy, develop search spirit, better performance (teacher and students)
How to use the computer?	Data show, access game pages, texts, chats	?

When asked what is needed for the teacher to use the computer in the classroom the participants mentioned:

> Operate it. If the teacher does not know how to use the programmes, he will not make good use of it. (Monica)

> Know how to use the multimedia, data show, create powerpoint presentations, etc. (Sophie)

Based on the data obtained in the questionnaire an initial plan, that suffered modifications due to other needs that come up during the module, was designed. The module addressed the following theoretical and practical aspects: new technologies and its challenges, CALL and its relation to the learning theories, computer in education, literacy (*letramento* and *alfabetização*), teacher's role, hypertext, distance learning and platforms, word processor, slide show, e-mail and e-lists, search tools, website visits, Webquest, Microsoft Front Page Express and the visit to two platforms.

At the end of the module, the participants were questioned about the use of the computer in their classes and the teacher they believe to be at the moment. The extracts presented below illustrate both aspects:

> I can create certain activities and know where to get different materials for the classroom (. . .) knowing when its use is really relevant. (Monica)

> I feel I have more options, for example: look for sites for the students, data show, Orkut, MSN, exchange of information between the students/ teacher and much more. (Sophie)

> I don't know if my future classes will capture the students' attention but I'm conscious about how to work with the contents.(Monica)
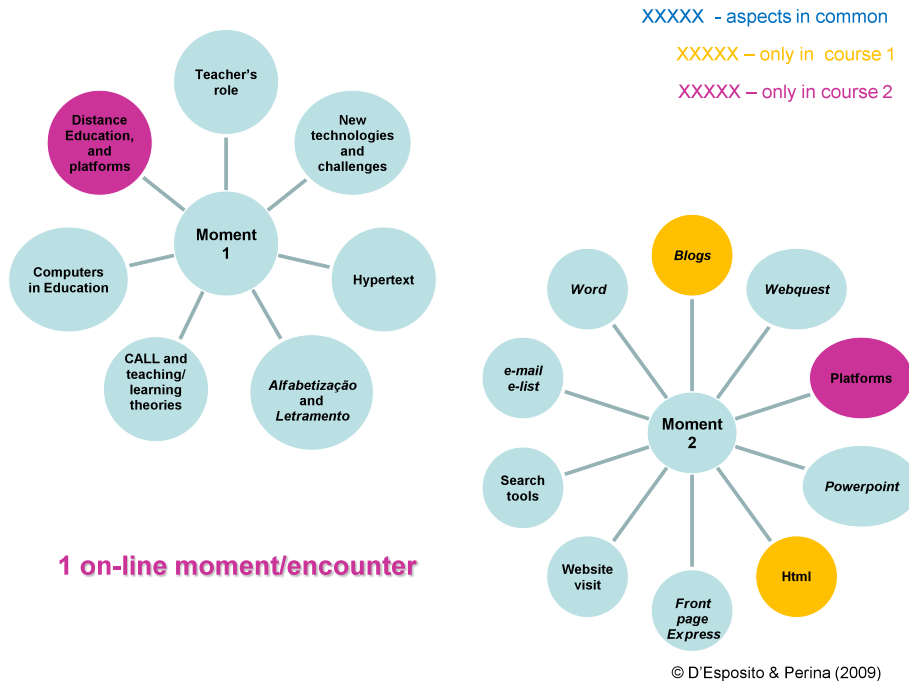
> Trustful (. . .) I feel freer when thinking about the activities. (Sophie)

The answers provided by the participants make us noticed significant changes that make us believe that there was a certain level *letramento* since there is concern with the use of the computer which goes beyond the operational domain of the equipment.

Comparing and Contrasting the Modules

As you could notice the modules had many things is common, once they had similar objectives and provided the participants with almost the same theoretical constructs and practice. It is important to pinpoint, though, that even if the courses were dealing with the same aspects and theoretical constructs, the readings were not the same and the teachers were not the same as well. Therefore, we had two teachers with different life experiences and practices, teaching similar courses with similar theoretical constructs, and dealing with different participants and contexts. The following figure compares both modules.

Figure 1: Comparing and contrasting modules 1 and 2

© D'Esposito & Perina (2009)

As the figure illustrates, both modules dealt with almost the same theoretical and practical aspects, even if they provided participants with different texts and practical experiences. When considering the theoretical aspects, both courses dealt with the use of new technology, changes and new challenges in education; the new teacher's role; CALL and the teaching/learning theories; the use of computers in education; literacy (*alfabetização* and *letramento*), and hypertext. The only difference was that course number 2 also covered distance education and the use of platforms, an aspect not addressed in course number 1.

When comparing the practical aspects both courses dealt with word processor (Microsoft Word), Slide show (Microsoft PowerPoint), e-mail and e-lists, search tools, website visits, Webquest, Microsoft Front Page Express. However, course number 1 focused on blogs and Html, while course number 2 offered their participants the chance to visit and explore two platforms.

Final Considerations

Considering the objective of the modules was to enable language teachers to have contact with the use of new technologies allowing them to better use some tools that would help them in their teaching practice; reflect upon the possibilities, advantages and limitations of its use; develop criticism and autonomy to evaluate and use new technologies; have contact with certain resources and tools, and make participants conscious about the need

to constantly research about new technologies, we do believe that, in both courses, there was space for exchange, interaction, knowledge construction and respect to different ways of thinking (Delcin, 2005).

Besides that, we also believe that the information and excerpts collected via questionnaires, the final papers and materials produced by the participants, provide us with evidence that there was the development of the capacity to critically search, select information, dialogue as well as reconstruct thought (Almeida, 2005). The courses provided participants with theoretical constructs and the chance to experience practices in the laboratories that were not limited to operational aspect of the equipment. Therefore, due to these facts we tend to believe that both modules offered participants a level of *letramento* and we do hope they continue their studies and investigations in order to reflect on their practices.

By comparing and contrasting the modules and results we tend to consider that the theoretical and practical aspects covered by the courses helped these language teachers in their continuous formation on the use of new technologies in Education. The present study also helps us reconsider the modules content, their objectives, making us aware, for example, of the need to create more opportunities of on-line experiences for the participants.

References

Almeida, M. E. B. (2005). Letramento digital e hipertexto: contribuições à educação. (Digital literacy and hypertext: Contributions to education). In N. M. C. Pellanda, E. T. M Schlünzen, & K. Schlünzen Junior (Eds.), *Inclusão digital: Tecendo redes afetivas/cognitivas. (Digital inclusion: weaving affective/cognitive nets)* (pp. 171–192). Rio de Janeiro: DP&A Editora.

Barros, S., & Cavalcante, P. S. (2000). Os recursos computacionais e suas possibilidades de aplicação no ensino segundo as abordagens de ensino-aprendizagem. (Computational resources and possibilities of implementation in the studies according to the learning/teaching theories). In A. M. M. Neves & P. C. Cunha Filho (Eds.), *Projeto Virtus: Educação e interdisciplinaridade no ciberespaço. (Project Virtus: Education and interdisciplinarity in the cyberspace)* (pp. 21–32). Recife: Editora Universitária da UFPE; São Paulo: Editora da Universidade Anhembi Morumbi.

Braslavsky, C. (2004). As políticas educativas ante a revolução tecnológica, em um mundo de interdependências crescentes e parciais. (The educational policies and the technological revolution, in a world of growing and partial interdependences). In J. C. Tedesco (Ed.), *Educação e novas tecnologias: Esperança ou incerteza?(Education and new technologies: Hope or incertainty?)* (pp. 77–94). São Paulo: Cortez Editora.

Delcin, R. C. A. (2005). A metamorfose da sala de aula para o ciberespaço. (The metamorphosis from the classrrom to the cyberspace). In H. Assman (Ed.), *Redes digitais e metamorfose do aprender. (Digital nets and the learning metamorphosis)* (pp.56–83). Petrópolis, RJ: Editora Vozes.

Kenski, V. M. (2001). O papel do professor na sociedade digital. (The teacher's role in the digital society). In D. de C. Castro & A. M. P. Carvalho (Eds.), *Ensinar a ensinar. Didática para a escola fundamental e media.* (Teaching to teach: Didatics to the regular school) (pp. 95–106). São Paulo: Pioneira Thomson Learning.

Lopes, R. P. (2005). Um novo professor: novas funções e novas metáforas. (A new teacher: New functions and metaphors). In H. Assman (Org.). *Redes digitais e metamorfose do aprender (Digital nets and the learning metamorphosis)* (pp. 33–55). Petrópolis, RJ: Editora Vozes.

Martínez, J. H. G. (2004). Novas tecnologias e o desafio da educação. (New technologies and the challenge in education). In J. C. Tedesco (Ed.), *Educação e novas tecnologias: Esperança ou incerteza?(Education and new technologies: hope or incertainty?)* (pp. 95–108). São Paulo: Cortez Editora.

Sacristán, J. G. (2007). A educação na sociedade da informação. A orientação de um novo discurso. (The education in the information society. The orientation of a new discourse). In J. G. Sacristán, *A educação que ainda é possível: Ensaios sobre uma cultura para a educação. (The education that is still possible: Essays about a culture for education)* (pp. 41–67). Porto Alegre: Artmed Editora.

Warschauer, M. & Healey, D. (1998). Computers and language learning: An overview. *Language Teaching, 31,* 57–71.