9 ICTs, ESPs and ZPD through microlessons in teacher education

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Abstract

This paper presents the initial results of the use of dialogic interaction enhanced by the use of technology in teaching English in different settings and subjects of teacher education. Technology is used in three different ways: as a support (video) for analysis through teacher-instructor interaction, as a means of social interaction and use of language for education between teacher and students (use of the computer for instruction), and as the creation of own designed materials for language training (through the use of technology). Data is obtained from video-recordings related to teaching and learning English as a foreign language by three different teachers in three subjects from Primary and Infant Education at Universidad de Alcalá. Results indicate that microteaching is not only valid as a training method but also to introduce new content and concepts that have not been previously introduced in the classes. The interaction in the Zone of Proximal Development (ZPD) between the teacher-instructor and the teacher-students also proves to have a powerful effect in motivation, teaching improvement and language for education skills development through self-reflection.

Keywords: ICT, microteaching, pre-service teachers, pre-school, dialogic interaction.

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1.   Introduction

Microteaching goes back to the early and mid-1960s where it was designed at the University of Stanford (Allen & Wang, 1996) and has been considered as one of the most successful techniques in teacher training. The main purpose was that future professionals were conscious of what we call 'educational ac' and that they acquire the pedagogic 'know how' (skill) defined in terms of observable behaviour. This project is based on the main features of these practices, which are: restricted and concise aims formulated in terms of teaching behaviour, independent of the lesson content; symbolic modelling (written and verbal instructions, description of teaching behaviour, verbal interaction) and/or perception (recording sequence, visual and audible in which a 'teacher' shows the behaviours to acquire); teacher-student performance in a simplified teaching situation (with 4 or 5 students; 5 minute lesson) and results analysis with a positive reinforcement of the reached aims.

2.   Literature review

Trying to define the concept, we find terms called 'training model', which came from microteaching sessions conceived (Ferry, 1983) as a transference model between a real and a simulated session. Sometimes, it is related with the teaching basic abilities (Turney & Col, 1973), with the stream of action-investigation (Smith & Lovat, 1991), with reflective teaching (Schon, 1983), or with the experiential-reflective learning (Kolb, 1984). Although these concepts will be reviewed in the next section, we picked Wallace's (1991) definition, which indicates, first, three basic conceptual aspects for the 'putting into practice'; to set the teacher's role, the length of the lesson, and the distribution of the students, and second, the several phases of the project, of which the first three stand out; the first stage entails preparation (*the Briefing*) in small groups before the second stage, the lesson production or performance (*the Teaching*). The third stage (*the Critique*) is maybe the most important one because authentic space for the reflective-experiential learning is developed. Therefore, we will pay special attention to this stage, not just in theory but also in practice.

The pedagogical model called 'reflexive-experiential learning' holds that the knowledge acquisition cycle is based on the reflection of facts previously experienced which, once conceptualised, become the backbone of the 'feedback' or 'active experimentation' (Kolb, 1984). In professional competence terms, we understand the main way for the improvement of teaching in general, and the teaching of foreign languages in particular. It is not only to establish a link between theory and practice, but is defined as a 'cognitive learning process' (Kelly, 1997) in which critical reflection reaches a special role.

Critical reflection entails and includes, among other considerations, the implementation of analysis and synthetic processes, the interaction between students and teachers, and search and information management. Some experiences with learning theory emphasise the importance of involving the students in projects which, based on meaningful learning, enhance critical reflection by the proposed activities, highlighting that the learning process itself takes on particular importance in the success. Virtual platforms become, therefore, very useful tools for interaction, analysis and synthesis, and evaluate information to build and share knowledge of the group as motivating and enriching elements in the teaching and learning process. Here, technology becomes, once again, prime location to meet and interact.

The use of technology in English for Specific Purposes (ESP) for teacher education through microlessons also implies operations such as "revision of time, planning and facilities for the practicing of subject skills" (Pool, Reitsma, & Mentz, 2013, p. 455) along with the provision of opportunities for interaction between the language teacher tutor and the teacher-apprentices. This interaction should lead to adequate opportunities to practice, analyse and reflect on the specific language as well as the methods and skills to teach foreign languages.

The use of technology in this approach to teacher education, however, changes the importance of traditional individual use of the specific language (Frye, 1971) by the teacher-learners into a more dialogic relation in which the interaction between the language teacher-instructor and the teacher-candidates is clearly marked by the mediation of technology to facilitate a dialogic ESP

discourse in the teacher-learners performance (Johnson, 2007) within the ZPD (Vygotsky, 1978).

Technology favours the possibility to reshape lesson planning and engage into collaborative working partnerships, which is mediated by the instructor either in face to face interaction (Casey, 2011) or in distance learning (Sarigoz, 2013) and is developed in the verbal interaction between the pre-service teacher(s) and the instructor. In this way, the microlesson is potentially enriched by the dialogic interaction. This development is clearly supported by the use of recording techniques as well as the audiovisual techniques used to include visual information that serves to construct the potential students' knowledge (Macleod, 1987). This interaction is also valid to develop new contents and concepts that may have formal and informal origins. Since many of these issues have not been put into test yet, it was necessary to observe whether students also engage in this dialogic context and how it is perceived by them.

3.   Procedure

Since the major goal of this study was to enhance ESP learning and ZPD interaction with technology through microteaching in teacher education, researchers considered to identify how Information and Communications Technology (ICT) can be used in these settings in three different instructive ways: as a support (video) for analysis through teacher-instructor interaction, as a means of social interaction and use of language for education between teacher and students (use of technology for instruction), and as a way to create their own designed materials for language training (through the use of technology).

The most frequent and efficient method for identifying learning acquisition, dialogic interaction and critical thinking is through self-reported data questionnaires and interviews (Kavaliauskienè, Kaminskienè, & Anusiene, 2007, p. 161), which are the means for data collection in the current study. The questionnaire, based on Johnson (2007) and Pool et al. (2013, p. 455), placed

reliance on quantitative data and contained twelve Likert-scale questions related to the use of interaction, ICTs and ESPs in microlessons where students selected in a scale from 1 ('agree') to 2 ('disagree'). Qualitative data were obtained from an open question concerning rationalisation of their experience and proposals for improvement. Succeeding data analysis, interviews were held in order to foster student's critical thinking about their own teaching-learning experience. This reflection was discussed in a dialogic relation between the language teacher-instructor and the teacher-candidates, therefore enhancing the ZPD.

This study used a microteaching practise to study learner's training, analysis and reflection on the specific language, as well as the methods and skills needed to teach foreign languages. The participants were thirty-four second-year full time students of English as a foreign language in BA (Hons.) Primary Education. The case study has been carried out outside class time in groups of three students along the twelve European Credit Transfer and Accumulation System (ECTS) contact hours assigned to the course. The action, designed to reinforce the contents of the subject, is divided in three different sections after Wallace (1991) and Seidel's (1998) model of qualitative data analysis: noticing, collecting and thinking.

The main project consisted of the preparation, presentation and video recording in class of a microteaching that developed activities, methods and strategies for teaching English in early childhood education. The most relevant topics were recapitulated in a glossary to be reviewed and considered during the action. The microlesson involved noticing language development, appropriate use of terms and concepts related to ESP in pre-school, interaction between group members to plan and time the lesson (e.g. face to face meetings, technological communication using different resources like Google Drive, Dropbox, etc.), co-construction and collaborative working, and creation of own designed (technological) materials for language training.

The evaluation process is an important part of any training program; therefore the second assignment required data collection and analysis. After watching their own microteaching video-recordings in YouTube or Dropbox, students

were required to work autonomously through a closed questionnaire about self-performance based on the four rubrics mentioned above.

Kvale (1983) defines the qualitative research interview as an "interview, whose purpose is to gather descriptions of the life-world of the interviewee with respect to interpretation of the meaning of the described phenomena" (p. 174). In the final phase, learners contribute their own thinking and proposals for improving interaction in the ZPD in a reflective individual discussion face to face with the tutor about their video recording presentation.

4.   Results and discussion

The results of the learners' responses and reflections on their own teaching after watching their video performance show that the developed process meets the objectives, as shown in Table 1.

The findings revealed that most respondents (97%) contemplate using ESP vocabulary and concepts related to teaching English in pre-school, whereas 88% used it if from the Glossary "Materials, methods & resources in Early Childhood Education", hence broadening their specific knowledge in the area.

All participants have indicated that in order to achieve teaching goals, lessons were correctly planned and timed (85%) in face to face meetings (84%), and using technology (85%) like e-mails, mobile telephone text messages and Dropbox in collaborative and partnership work (95%). Students have mainly considered that interaction and co-construction of learning deepens relationships (94%) and understanding between partners, leading, therefore, to improvement (91%).

Results have shown, however, that most students (94%) prefer to use traditional resources (flashcards, songs and realia) with the help of technology (YouTube, TEFL websites, etc.) rather than creating their own designed technological materials or programs for language training (6%). Analysis and specification of these data, both written and in personal interviews, indicates that students rated

highly the experience, exceeding our expectations in terms of commitment and interest in the project. Technology (videos) is used for microteaching evaluation and as a means of language and social interaction (students and instructors) not only through the computer, but also with mobile resources (telephone texting). An unexpected outcome showed that ICT was not used for the creation of own designed materials for language training through the use of technical programs due to the considerable amount of time that it involves.

Table 1. Reflection on microteaching video recording

ESP content and concepts	Agree%	Disagree %
Use of specific vocabulary and concepts related to teaching English in primary education	97	3
Development of (new) concepts from the Glossary "Materials, methods & resources in Early Childhood Education"	88	12
Interaction (lesson planning & timing)	**Agree%**	**Disagree %**
Lesson was correctly planned to achieve teaching goals	100	0
Lesson was planned in face to face meetings	84	16
Lesson was planned using technology (e-mail, dropbox telephone texting…)	85	15
Correct timing to achieve teaching goals	94	6
Co-construction & Collaborative working	**Agree%**	**Disagree %**
Collaborative & partnership working	94	6
Co-construction of learning' deepens relationships	94	6
Understanding between partners leads to improvement	91	9
Creation of own designed (technological?) activities/materials for language training	**Agree%**	**Disagree %**
Use of technological programs (Hot potatoes, Quia…)	6	94
Use of technological resources (YouTube, TEFL websites…)	100	0
Use of traditional resources	100	0

5.   Conclusions

From the statistical data obtained, the use of technology through microlessons is favourably valued not only as a training technique, but also to practice and

introduce new content. Analysis of the different learning-teaching strategies used in the videos led to self-reflection in a dialogic interaction between the language teacher and the teacher-candidates by means of technology (videos and internet) within the ZPD, according to the idea that development is defined both by what a learner can do independently and by what he/she can do when assisted by a more competent adult.

The present paper just showed that teachers can use information about Vygotsky's (1978) ZPD to organise classroom activities, providing planned instruction, scaffolding and cooperative learning with technology. These preliminary findings recommend further research on two additional phases; microteaching re-planning and re-teaching, to study how reflection and dialogic interaction within the ZPD can lead to improvement in the desired direction.

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