

## Chapter 14

# Designing In–Service Teacher Training for Computer– and Mobile–Assisted Foreign Language Learning: A Mixed–Methods and SWOT Analysis of the TELL–OP Training Module for Language Professionals

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### ABSTRACT

*The chapter discusses the importance of in-service teacher training (INSET) to promote the use of open natural language processing (NLP)-based technologies (NLPTs). The first section briefly outlines the affordances of technology for second language acquisition and emphasizes the potential of open NLPTs. The second section presents the overall INSET design used in the TELL-OP ERASMUS+ project led by a team of researchers from several European universities. Section 3 provides a quantitative and qualitative analysis of the questionnaires and feedback data from Belgian French-speaking teachers ( $n = 86$ ) on the TELL-OP online training module. A SWOT analysis (strengths, weaknesses, opportunities, and threats) is used to complement the teachers' feedback. In the fourth section, the authors put the course design into perspective using several theoretical models on the use of technology and open access resources in education, and provide suggestions for improving future similar INSET initiatives.*

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## INTRODUCTION

### **Affordances of Technology for Second Language Acquisition: Focus on NLPTs**

The affordances of technology for second language acquisition have regularly been put forward in the literature (some recent references include Hinkelman 2018, Carrió-Pastor, 2016; Caws & Hamel, 2016; Vandergriff, 2016). Gee & Hayes (2011, p.1) label technologies as ‘power-ups’ for language learning. Whilst the use technology for educational purposes may sometimes take time to trickle down to instructed settings, it seems fair to say that (at least some) technology is currently part of many teachers’ lives. As argued by Haines (2015, p.166), however, it is crucial to keep in mind that a “key aspect of affordance is that it is situated in the relationship between user and artefact, rather than being about tools that can be developed as independent components and integrated into any learning environment”. She thus defines affordance “as the potential that teachers perceive in a particular technology tool that will support learning and teaching activities in their educational contexts”. This chapter focusses on a type of technology, often less known to teachers, viz. open natural language processing (NLP)-based technologies (NLPTs). The rationale behind the research was twofold, i.e. assess the affordances that teachers might perceive in technologies that are often less known to them, and discuss the type of design that in-service teacher training (INSET) modules should ideally adopt for presenting, discussing and potentially using such tools in the language classroom.

Garbade (2018<sup>1</sup>) provides a simple definition of NLP as “the technology used to aid computers to understand the human’s natural language” and whose objective is “to read, decipher, understand, and make sense of the human languages in a manner that is valuable”. Meurers (2012) distinguishes two broad uses of NLP. The first one is the analysis of words, sentences, or texts produced by language learners that are analyzed by NLP systems to, for example, find mistakes. One concrete example would be the use of a programme to check the grammatical accuracy of a text. Such tools can for instance use algorithms to search part-of-speech tagged texts and look for patterns like [Plural noun + singular verb] as in *the chairs is* or [plural demonstrative determiner + singular noun] as in *those example* which would be cases of potential mistakes. The second main use of NLP tools is to analyze native language to, for instance, assess the lexical and syntactic complexity of sentences or texts and present reading material in the target language that is adapted to the level of language learners. Other examples include the generation of exercises or tests based on native language data, lemmatizers that reduce the various inflected forms of a word into a single form for easy analysis, word sense disambiguation to infer the meaning of a word based on the context. The few examples provided show the potential of NLP both for Second Language Acquisition (SLA) and for learning and teaching second/foreign languages. Regarding the link with SLA, Ziegler et al. (2017, p.209) argue that: “The strategic use of technology offers researchers novel methodological opportunities to examine how incremental changes in L2 development occur during treatment as well as how the longitudinal impacts of experimental interventions on L2 learning outcomes occur on a case-by-case basis”. As for the learning/teaching perspective, Alhawiti (2014, p.72) explains that “Natural Language Processing (NLP) is an effective approach for bringing improvement in educational setting. (...) Natural Language Processing provides solution in a variety of different fields associated with the social and cultural context of language learning. It is an effective approach for teachers, students, authors and educators for providing assistance for writing, analysis, and assessment procedures” (more examples of NLP tools and further discussion on the links between NLP and Second Language Acquisition can also be found in Schulze (2007) and Ziegler et al. 2017).

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