Chapter 6
Design of Multimedia Listening Software: Instructions, Tasks, Texts, and Self-Assessment Tests

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ABSTRACT
In this chapter, the principles and guidelines that should be borne in mind when designing and developing some digital elements such as ‘instructions’, ‘tasks’, ‘(reading) texts’ and ‘self-assessment tests’ in interactive multimedia listening software (MLS) for second/foreign language learning (SLL/FLL) are focused on. The stages of software design and development are categorized into six separate stages: (1) feasibility, (2) setting up a team of experts, (3) designing, (4) programming, (5) testing and (6) evaluating (Turel & McKenna, 2013, pp.188-190). Each stage as well as each digital element of interactive MLS is vitally important in the design and development process of cost effective applications. A wide range of principles and guidelines need to be taken into account at each stage as well as in the design and development of each element so that we can design and develop every single digital element of interactive MLS efficiently. As a whole, all of these can enable us to design ideal and customised/adapted MLS for SLL/FLL.

INTRODUCTION
Interactive multimedia listening software (MLS) consists of the use, functional combination and presentation, and instantaneous delivery of a wide range of digital elements such as sound (audio clips), video, (reading) text, unfamiliar items (i.e. lexis and syntax), (still or motion) visuals (i.e. pictures, icons, logos, graphics, charts, animations, supplementary visuals), glossary, help, captions, subtitles, tasks, activities,

DOI: 10.4018/978-1-4666-8499-7.ch006
self-assessment tests, feedback, speech rate, optimum combinations and so forth on the same digital platform. These are totally digital elements. They are also under the control of digital technology (i.e. programming) as well as (language) learners’ control.

The use, functional combination and presentation and instantaneous delivery of such elements on the same digital platform is called multimedia. When their combination is provided through links, - which not only provide navigational interactivity, but also functional interactivity - then multimedia is called interactive multimedia or hypermedia. These links within an interactive multimedia platform can be in the form of hyperlinks, hypertext, buttons, hotspots or hot-words so that (language) learners/users can retrieve information and/or navigate. When interactive multimedia/hypermedia enables language learners to make personal preferences, record these preferences, their individual needs and their learning goals, and then uses them throughout interaction with the (language) learners to meet their different background and personal needs so that they can learn better, then interactive multimedia/hypermedia becomes adaptive hypermedia (Turel, 2015a, pp. 2496-2497). Adaptive hypermedia is a relatively new route in the field of interactive multimedia (Brushilovsky 2012, p. 46) and comprises several different models (Kahraman, Sagiroglu & Colak, 2013, p. 60).

The focus of this chapter is the priority and design of certain digital elements such as ‘instructions’, ‘tasks’, ‘(reading) texts’ and ‘self-assessment tests’ in interactive MLS for second/foreign language learning (SLL/FLL). Not only do the most effective elements and their optimum combinations need to be given priority in order of importance in interactive MLS, but also such elements need to be combined and designed in the most effective and efficient ways. Otherwise, the combination of such multiple elements on the same digital platform can distract rather than aid (language) learners. To succeed, the most effective design of the digital elements in interactive MLS depends on mostly to what degree we are aware of the pertinent empirical findings in the fields of multimedia and SLL/FLL. Additionally, the factors affecting listening (Turel, 2014a, pp. 310-331) and what we target for achievement also need to be taken into consideration. Thus, while discussing the design of ‘instructions’, ‘tasks’, ‘(reading) texts’ and ‘self-assessment tests’ in interactive MLS for SLL/FLL, the pertinent literature and findings, and pedagogic and physiological aspects are taken into account.

**DESIGN OF SOME ELEMENTS**

**Instructions**

The design of instructions for the pre-listening stage, the while-listening stage, and the post-listening stage in interactive MLS are explained in detail in other studies (Turel, 2014b; Turel & Kılıç, 2015; Turel, 2015b). Here, we focus on the general points in terms of design of instructions in interactive MLS.

Instructions in interactive MLS should be crystal clear, short and meaningful, as such features of a task rubric play an important role in understanding and performing tasks (Figure 1). To this end, Watts (1997, pp. 5-6) says that “provision of uncomplicated, nontechnical on screen instructions to enable individual users to navigate easily and rapidly through the program” needs to be accommodated in interactive multimedia design.

Instructions in interactive MLS need to be explicit and focused (Figure 2), as explicit and focused instructions are more effective (Norris & Ortega, 2000, p. 483) and result in large gains (ibid: 500). Not only does such a design help language learners to better understand what they are supposed to do, but it also narrows down the scope of the instructions.
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