Preface

USING COMPUTER TECHNOLOGY TO DESIGN AND DEVELOP INTERACTIVE MULTIMEDIA LISTENING SOFTWARE

Not only are we, as educators and materials developers, living in a digital age, but we are also required to meet the needs of today's learners who are in general digitally fluent and competitive, - as they are born into a digital world, where they can spend many hours in front of their digital devices -. Therefore, not only are today's learners known as 'digital natives', but they are also known to have different learning styles and preferences in comparison to the learners of just a few decades ago. As a result, today's learners expect computer based educational technology to be used more often and widely both in teaching and learning. In order to be able to meet such demands, we, as educators and materials developers, need to and have to respond to such learning demands and differences. This can be achieved through accommodating the digital–literate and wise learners with appropriate and efficient learning styles that meet their preferences across all fields as well as at all stages of teaching and learning. One of these subjects is second/foreign language learning (SLL/FLL). Fortunately, a tremendous amount of research has been conducted as well as published in the field of (a) using computer/educational technology for SLL/FLL (i.e. computer assisted language learning – CALL) and (b) the design and development of interactive multimedia language learning environments in a very wide range of different peer-reviewed internationals journals. However, no compiled book has ever been written or edited on the design and development of interactive multimedia listening software to date.

This book, *Intelligent Design of Interactive Multimedia Listening Software,* offers a unique way for designing and developing efficient and cost effective multimedia listening applications for the learners of any language (e.g. English, Arabic, Chinese, Spanish, Japanese, Russian, French, German, Kurdish, Turkish, Persian, Italian, Portuguese, Hindi, Urdu, Greek, Hebrew etc.) that is taught/learnt as a second/foreign language.

The fourteen chapters of the book, - which are authored by experts and specialists in the field of CALL and the design and development of interactive multimedia listening software as a part of SLL/FLL from a wide range of different countries -, cover (a) SLL/FLL and CALL overview theories, hypotheses, approaches and trends, (b) efficient design principles and guidelines for design of different elements of interactive multimedia listening software such as annotations, optimum combinations, tasks, activities, instructions, (reading) texts, captions, self-assessment tests, unfamiliar items, glossaries, aural texts, speech rate, and other relevant design issues, and (c) pertinent tools, applications and resources. These chapters present the results of original and empirical research covering these areas. In the same way, the chapters report results of both quantitative and qualitative empirical data on the actual design and development of a wide range of digital elements (or their optimum combinations) of interactive multimedia listening environments.

Intelligent Design of Interactive Multimedia Listening Software provides readers (i.e. undergraduate and post-graduate language and computer students; language and computer based education teachers, tutors, lecturers and researchers; educational institutions; commercial software companies and software developers, and individual software developers) with the most up to date compiled research, findings and practical design principles and guidelines in the field of multimedia listening software. This unique compiled book will enable all linguistic and computer based education scholars, students, institutions; software companies and software developers not only to better understand efficient and effective software design and development principles and guidelines, but also to empower them to design and create efficient cost effective multimedia listening software for any language as a part of SLL/FLL.

HOW THIS BOOK ORGANISED

The chapters in this book cover three key areas that are vital in the design and development process of interactive multimedia listening environments for any language as a part of SLL/FLL. These key areas are: (1) annotations, optimum combinations and captions, (2) tasks, activities and other design issues, and (3) tools, applications and resources.

Annotations, Optimum Combinations, Captions

In chapter one, "Effects of Annotations on Inferring Meaning within a Listening Comprehension Environment", *Jones* focuses on students' abilities to infer meaning from an aural text when processing it in one of four treatments: The aural passage (1) with no annotations; (2) with pictorial annotations only; (3) with written annotations only or (4) with written and pictorial annotations. Overall, students who accessed pictorial and/or written annotations most often inferred meaning significantly better compared to those who did not access such annotations. While the relationship of recall and inferencing was highly correlated based on annotation type, the relationship between vocabulary knowledge and inferencing based on annotation type was not strong.

In chapter two, "Annotating Abstract Vocabulary Using Multimedia", *Xu* reports a research study that investigated the effectiveness of multimedia vocabulary annotations (MVAs) in facilitating acquisition of a second language (L2) abstract vocabulary. The quantitative data resulting from the vocabulary assessments indicated that these students neither acquired more vocabulary knowledge nor retained this knowledge better by using MVAs than using traditional text-only annotations. The qualitative data collected from two questionnaires suggested that the participants had applied various strategies for assessing MVAs during the reading activity and they had encountered some difficulties in processing the visual information. The results are interpreted based on multimedia learning and visual perception theories. The implications of the results for designing multimedia L2 reading and listening materials are discussed.

In chapter three, "Intelligent Design of Captions in Interactive Multimedia Listening Environments", *Turel* investigated 48 language learners' perceptions towards the presence of captions at the first listening (i.e. the while listening stage) in an interactive multimedia listening environment that aimed to enhance the language learners' listening skills as a part of learning English as a second language. The results reveal that captions should not be available at the while-listening stage in interactive multimedia listening environments for FLL/SLL. The availability of the captions at the while-listening stage in interactive multimedia environments (IMEs) for FLL/SLL seems to make language learners rely on

captions. Instead, the unavailability of the captions at the while-listening stage in IMEs for FLL/SLL seems to: (1) help language learners to focus on listening texts, (2) encourage language learners to try to understand listening texts without captions help and (3) encourage and motivate language learners to listen to/view the listening texts more.

In chapter four, "The Removal of Target Language Captioning Supports", *Leveridge* discusses the use of captioning support in second language instruction and its subsequent removal. Learning to listen in a second or foreign language may be quite difficult for some learners, especially in listening classes in a traditional classroom setting. Because of this difficulty, instructors often support the auditory materials with the addition of verbatim captioning as captioning provides a visual representation of what is being heard and is readily available through multimedia. Prior research has focused on the addition of captions, viewing captioning support as similar to other types of supports. However, captioning is unlike other instructional supports in that it provides the learner with an alternative route from which to gather complete comprehension, in turn fostering learner reliance on the support. Accordingly, the current paper argues that the removal of captioning supports may affect individual learners negatively due to this reliance, thus necessitating investigation. In turn, the work reports on an empirical study that gathered learner perceptions regarding individual reliance on captioning, and the addition and removal of captioning support. The data reveals that perceptions are affected by learner proficiency. Based on these perceptions, a framework concerning captioning support is created to assist language instructors and course developers to make informed choices regarding the addition and removal of captioning support.

Tasks, Activities and Other Design Issues

In chapter five, "Design of While Listening Activities in Interactive Multimedia Listening Software", *Turel,* and *Waraich* report the language learners' perceptions towards the type (priority) as well as the number of the while listening activities/questions (i.e. 'Clickable', 'Drag & Drop', 'Typing a letter', 'Typing a word') on screen at one time in a multimedia listening application. The results of the quantitate and qualitative data as a whole reveal the language learners believe the priority (i.e. type) as well as the number of the while listening activities (i.e. questions) on screen at one time can help as well as hinder their focus and comprehension during the while-listening of the learning process.

In chapter six, "Design of Multimedia Listening Software: Instructions, Tasks, Texts and Self-assessment", *Turel,* and *McKenna* focus on the principles and guidelines that should be borne in mind when designing and developing 'instructions', 'tasks', '(reading) texts' and 'self-assessment tests' in interactive multimedia listening software (MLS) for SLL/FLL. The design of 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 so that each digital element of interactive MLS can be designed and developed efficiently. As a whole, all of these can enable software developers to design ideal and customized/adapted MLS for SLL/FLL.

In chapter seven, "Design of Multimedia Listening Software: Unfamiliar Items, Glossary, Aural Texts and Speech Rate", *Turel,* and *McKenna* focus on the principles and guidelines that should be borne in mind when designing and developing 'unfamiliar items', 'glossary', aural texts', and 'speech rate' in interactive multimedia listening software as a part of SLL/FLL. The design of each of these digital elements of multimedia listening software is fundamental for cost effective applications. Therefore, a wide range of principles and guidelines pertinent to the design of the elements are discussed in this chapter, which can enable software developers to design and develop the elements of multimedia listening software efficiently.

In chapter eight, "Intelligent Design of Post-listening Tasks in Interactive Multimedia Listening Environments", *Turel* demonstrates through concrete examples how effective and efficient post-listening tasks for autonomous intermediate language learners can be designed and created in interactive multimedia listening environments as a part of FLL/SLL process. Firstly, the definition of autonomy is slightly touched on. Secondly, the categorisation of autonomy is briefly explained. Thirdly, a separate part on multimedia listening environments and the nature of the listening stages and tasks in such environments is presented. Mainly, what needs to be taken into account in order to be able to design and create pedagogically and psychologically effective and useful post-listening tasks for autonomous intermediate language-learners in interactive MLS is accounted for in detail.

In chapter nine, "Interactive Multimedia and Listening", *Vo* presents the difference between listening and hearing, the definition of interactive multimedia, and interactive multimedia listening environments. Explanation is then given to why listening is so important. The chapter also addresses main types of listening, active listening process, and obstacles to listening. This chapter additionally shows the benefits of and rationales for listening using interactive multimedia resources in comparison with audio-only listening materials regarding visual support, authentic content, comprehensible input, vocabulary acquisition, and student motivation. The chapter concludes by suggesting some Internet sources and materials for listening practice as a part of learning English as a foreign or second language.

Tools, Applications and Resources

In chapter ten, "The Effectiveness of Multiple Media Tools in L2 Listening: A Meta-analysis", *Kang* recruits the most recently published empirical studies and meta-analyses available evidence on the effects of different multiple media tools on L2 listening comprehension. The results reveal a medium-to-large effect of multiple media tools on listening comprehension in between-group designs (Cohen's d = .69). The effects of individual multiple media tools have also been statistically synthesized. Further, moderator analysis could help L2 educators and test developers make decisions on applying different multiple media tools in the fields of L2 instruction and assessment. Specifically, subtitles/captions, as well as self-regulated listening and slow speed, are recommended to teachers and test developers as a means to improve learners' listening comprehension.

In chapter eleven, "English Major Students' Attitudes towards Movies and Series as Language Learning Resources", *Zengin, Doğan,* and *Cubukcu* present the attitudes of the fourth-year English Language Teaching (ELT) students towards strategies related to using movies and series as language learning resources. The current study demonstrates that foreign-language majors are not immune to downsides of a low-exposure English as a foreign language (EFL) setting. The participants state that only their family members - but not friends - are likely to cause a shift to the dubbed version of movie/series they view in the original language and with L2 captions otherwise. This study suggests that backseat TV systems on buses can provide solutions, which is welcomed by most of the participants, whose intercity travelling habits are found to be quite high.

In chapter twelve, "Using 3-D Virtual Learning Environments to Improve Listening Skills", *Zengin* discusses how three-dimensional virtual learning environments can be used in language classrooms to improve students' listening and listening skills, which are important for effective communication as a part of FLL. In this digital age, new technologies are repositioning listening as an important 'new' literacy where new resources can be used to provide a better learning/teaching context.

In chapter thirteen, "Google Search Applications in Foreign Language Classes at Tertiary Level: A Case Study in the Turkish EFL Context" *Zengin,* and *Kacar* report on how EFL majors in an English preparatory program and in their first year at a state university in the west of Turkey use Google searching skills receptively and productively in pedagogical tasks, to highlight how Google search tasks can be used to raise language awareness and to offer suggestions for effective integration of search techniques into teaching EFL at the tertiary level. Although the study focuses on the use of Google search techniques in writing tasks, it has some pedagogical implications for the teaching of other language skills (i.e. listening, reading, speaking and writing), as well. These techniques may help EFL learners with the development of language awareness, particularly awareness towards grammatical and lexical patterns, access to the reading materials of their own choice, the application of extensions converting text to speech with a different range of voices, and consecutive accuracy checks for the listening input and speaking output.

In chapter fourteen, "Turkish EFL Majors' Attitudes towards Multimedia-enhanced Wiki-mediated Blended Learning Environments: A Case Study", *Kacar* sheds light on a group of Turkish EFL majors' perceptions of a multimedia-enhanced wiki project in a freshman contextual grammar course. The results indicate mainly favourable student perceptions, pointing to the enhancing impact of wikis on student motivation to use the foreign language, on student creativity and autonomy, while revealing varying degrees of satisfaction with the collaborative work, on the part of the students, and the technical aspects of the project. The chapter also offers some pedagogical implications of incorporating a blended learning environment to EFL grammar courses and some suggestions on how to deal with the possible challenges and how to make the most of potential learning opportunities the wiki projects can offer in a blended collaborative learning environment with an emphasis on autonomy, creativity, and constructivism. The ways to feasibly implement wiki projects in foreign language classes are also be mentioned.

In conclusion, not only does this unique compiled book impact the field of CALL very positively in general, but it also contributes significantly to the design and development of interactive multimedia listening software in specific cases. Compiled with experimental and practical design principals and guidelines for the development of interactive multimedia listening software and CALL, this is a book that no undergraduate and post-graduate language and computer students; language and computer based education teachers, tutors, lecturers and researchers; language and computer educational institutions; commercial software companies and software developers, and individual software developers can afford to be without.

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