Abstract
Media industries provide an increasing number of career opportunities for deaf graduates and professionals. However, communicating in written English, which is common practice in the media business, represents a barrier to sign language users. In general, English skills are necessary to communicate internationally, to use the Internet as well as to participate in academic or other specialized discourses. Deaf sign language users working in the media area only find a very limited number of adequate resources ("adequate" means that the target group's demand to have instruction also in sign language is respected). As most mainstream courses are oriented towards hearing participants and focus on speaking and hearing, they are not directly useful for deaf sign language users. Moreover, despite the necessity of being English literate, many schools and training institutions for the deaf outside the English speaking countries do not teach English as a foreign language regularly.
SignMedia offers a free interactive learning resource teaching written English through national sign languages. Online, learners immerse in a virtual game-based media environment where they perform tasks taken from various stages of the production process of a TV series to reinforce their English skills at intermediate level. One advantage of online learning is that users may determine their learning pace themselves. As the tool is permanently available, users can repeat lessons as often as they want to. After selecting one of the three available national sign languages, the users enter the world of "Sunrise Media Productions", the virtual company responsible for broadcasting the weekly soap "Beautiful Days". By working with written texts related to the media environment and having delivered all necessary explanations in their first language, deaf learners easily improve their English language skills.

1. Introduction
Communicating in written English still represents a barrier to many sign language users [1]. English skills are necessary for many everyday tasks, especially those connected to the internet and even for written communication with deaf people in other countries [2]. The media industry now provides an increasing number of career opportunities for deaf graduates and professionals. The European project "SignMedia" (2010–2012, official project website: http://www.signmedia.eu) therefore offers an innovative online course for the deaf target group. The project is funded by the Lifelong Learning Programme (Leonardo Da Vinci) of the European Commission. The involved partners are the University of Wolverhampton (coordinator) (UK), the University of Turin (IT), the University of Klagenfurt (AT) and the deaf led media production company Mutt&Jeff Pictures Ltd. (UK).
This communication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

2. State of the Art
If a deaf person uses their national sign language as the preferred language, the national written language is their second language. If they grow up outside of an English speaking country, English may be the third language they learn.
Several projects have already developed multimedia resources for the internet which use national sign languages as languages of instruction for teaching English as a foreign language (EFL) or English as a second language (ESL) to deaf learners. This approach assists independent learning and respects deaf learners' communication preferences [3].
The European projects “SignOnOne” (course for beginners, available at http://www.acm5.com/signonone-SignOnOne.html) and “SignOn!” (course for deaf adults with some knowledge of written English, available at http://www.acm5.com/signon2/index.html) are examples for this approach [4]. Others are the EU-project “DEDALOS” [2] and the English course within the “Vibelle” e-learning online portal hosted by the DESIRE-research group at the University of Aachen.
3. The “SignMedia” Project

The “SignMedia” consortium develops an interactive learning resource that teaches English for Specific Purposes (ESP) through British, Austrian and Italian Sign Language. It aims primarily at deaf media students, graduates and professionals with an intermediate command of written English. Naturally, it can also be used by other deaf learners for training their English and gaining some insight into media production. Hearing co-workers of Deaf media experts may use the course for improving their business related signing skills; sign language interpreters may get some additional information for respective specialised work. The final product will be available in autumn 2012.

4. Methodology

In the following, the methodology of the “SignMedia” learning tool is described.

4.1 Basic features

The learning activities show authentic scenes from the production process of a TV series. By that, deaf users can transfer their new language skills directly to their work in the media industry. A game-based approach was chosen as an additional “appetiser” which - if the game is interesting enough - increases the learning time in intensity and length because of the goal to finally solve a given problem [6]. Users don't only immerse in the English language, but also in the media environment, which significantly enhances the learning outcome [7].

The learning tool uses the above-mentioned bilingual approach: Written English is taught through national sign languages. Written English texts are combined with all necessary explanations in sign language.

All characters represented in the game use the respective national sign language. Technically, all texts were video-taped in a professional studio and then edited using chroma key digital image manipulation which allows changing backgrounds.

The course is designed for individual use; learners can determine their learning pace themselves: They can repeat lessons as often as they want to; they are responsible for their own learning progress which should increase their motivation for learning.

4.2 Plot and Log-In

Learners access the “SignMedia” learning tool at the website (http://www.signmedia.tv) and select one of the three available national sign languages. A simple registration is required to get a personal password which is used for logging in. Registration is necessary as it makes it possible to store individual scores within one’s personal account. When the users log in, they enter the world of “Sunrise Media Productions”, a virtual company responsible for the production of the weekly TV soap
“Beautiful Days”. An introductory video introduces the three main characters (shown in Fig. 1) as well as the company and its production work.

4.3 Story and tasks
Crissy, the users’ virtual co-worker, welcomes them in sign language and leads them through the learning tool. The learners need to complete several written tasks connected to the working steps of the TV soap production; e.g. filling out a risk assessment form or completing a story board. The tasks are presented on the learners’ desktop (cf. Fig. 2).

As some tasks depend on the knowledge gained in prior tasks, they will only become visible when the user has completed the basic tasks first. A tutorial including explanations on how to use certain functions of the learning tool is available (the respective buttons are shown in the bottom left of Fig. 2 and Fig. 3).

Each task is linked to a certain grammar topic (e.g. passive voice, articles, present tense). If further grammar explanations are needed, the learners can video-call Mark, the producer, via the “phone the producer” symbol on the right of their desktop. On demand, Mark signs the information required (cf. Fig. 2).

Each task is linked to several exercises: Crissy signs the respective explanations via a virtual webcam (cf. Fig. 3). The user has to edit texts, to match word pairs, to select the right words, to compile sentences by drag and drop or to choose the right answer from multiple choices. The written text provided includes links to a glossary where certain English terms are explained in and translated into the user’s national sign language.

Stars below a document symbolize successfully completed exercises within the respective task (cf. Fig. 2). After each exercise or task completed the users get signed feedback by their co-worker or by the executive producer: They either compliment the learners on the successful completion of the exercise/task or ask them to redo it. The more exercises and tasks have been completed successfully, the higher the viewing figures symbolized by the vertical bar on the left of the desktop (cf. Fig. 2). If users finish a task, they also win an award.
5. The Impact of "SignMedia"

The final product is an innovative learning tool for written English in the field of media. Using computers, learners improve their English immersing in the media environment. They will also learn about the process of a TV production. "SignMedia" supports the career progression of deaf media professionals by enhancing their confidence level. Naturally, every part of the course may be used as a part of in-class English courses for deaf people, or sign language courses for their hearing co-workers or the training of sign language interpreters.

6. Conclusion

"SignMedia" is a first step towards accessible English for Special Purposes courses for deaf learners. The accessibility via the users' sign languages fulfills the demands of the UN Convention on the Rights of Persons with Disabilities [8].

The "SignMedia" consortium promotes the re-utilization of the product for the generation of follow-up projects: e.g. the inclusion of other national sign languages or International Sign could make the tool accessible for more deaf people. The course can also be adapted to other thematic areas. The "SignMedia" structure may also serve for the development of learning resources for any national written languages.

Other possibilities of development are: the enlargement of the glossary towards a stand-alone product for a more or less complete "media dictionary" or the production of signed multimedia manuals on film production.

The continuing work on projects like “SignMedia” will enhance deaf sign language users’ quality of life by increasing the amount of accessible information. This accessibility will open a wider range of career opportunities in a variety of fields.

For every project or action an empowering approach is indispensible: deaf sign language users have to be involved in all stages and in diverse functions. As potential users they are thoroughly familiar with the needs of the target group. By that, all activities and, as a consequence, the results will be more sustainable and successful within deaf communities.
References


