



# Quality of subtitles on German television for D/deaf & hard-of-hearing children

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# Introduction

There are mostly standardized SDH-guidelines throughout German speaking countries.

Still, no distinction is made between adult and child audiences.

**Aim of the study:** Development of SDH-guidelines for D/deaf and hard of hearing children from ages 8 to 12.

# General Information

The project takes place over a duration of two years and is funded by the European Fund for Regional Development.

Our project partners are ten schools for D/deaf and Hard of Hearing children in Germany and two German public broadcasting companies (NDR, KiKA).

# Method

- **Main Study** (2018): ~ 150 participants
- **Pilot study** (2017)

**Phase 1)** Quality assessment of subtitles currently used on public German television.

**Phase 2)** Modification of these subtitles according to findings from phase 1 and existing research.

**Phase 3)** Quality assessment of the modified subtitles in comparison to broadcast subtitles.

# Subtitling Quality Parameters

**Legibility:** Are the children able to read the subtitles entirely?

**Comprehensibility:** Do the children understand the contents of a subtitled TV-programme?

**Acceptance:** How do the children like the subtitles?

# Procedure

The participants were shown short sequences of subtitled TV-programmes for children.

After each sequence, the participants were asked to fill out a questionnaire containing questions on legibility, comprehensibility and acceptance.

# Participants

There were 34 children from ages 8 to 12 in the treatment group.

Their hearing loss ranged from mild to profound.

All participants had hearing aids or CIs, or both.

All participants used German spoken language at home. One participant also used German Sign Language.

# Findings: Current TV-Subtitles

Comprehension was better for the hearing control group than for the D/deaf and hard-of-hearing group.

Emotion recognition and speaker identification were found to be difficult.

The subtitle duration was criticized as too short.

Subtitles not matching the audio were criticized.



# **Subtitle Modifications: Setting up Common Guidelines I**

To facilitate speaker identification, subtitles were placed below the speaker and the subtitle colour was matched with features of the speaker.

# Subtitle Placement and Colour



# **Subtitle Modifications: Setting up Common Guidelines II**

For text reduction, omissions were used instead of paraphrases.

To facilitate emotion recognition, some prosodic elements were described in the subtitle.

# Enhancing Emotion Recognition



# **Subtitle Modifications: Testing Particular Enhancements**

In order to improve legibility and comprehension, we tested several modifications, for example:

- 1) High vs. low subtitling speed (15 vs. 9 cps)
- 2) Leading subtitles (cf. de Linde/Kay 1999), preceding the speech 5 to 10 frames
- 3) Typographical highlighting (cf. Zárate 2014) of key words

## **Findings: Modified Subtitles**

Children found speaker identification to be easier.

Typographical highlighting improved comprehension only at a higher subtitling speed.

Leading subtitles seemed to improve comprehension.

The description of prosodic elements did not help to improve emotion recognition.

Subtitling speed did not influence comprehension, but had an effect on acceptance.

# Perspective: Main Experiment

Statistical analysis is required to develop verified SDH-guidelines for children. Therefore, a greater number of participants is needed.

Since there were inconsistencies in our findings from the pilot study, several aspects need to be looked at in detail:

- 1) Subtitling speed
- 2) Typographical highlighting
- 3) Leading subtitles

**Thank you!**

We are looking forward to your feedback.



# References I

Jennewein, Nadja, 2016: *Barrierefreiheit im Kontext audiovisueller Medien: Eine Untersuchung des Medienhandelns hörgeschädigter Kinder mit Schwerpunkt auf TV- und Telemedienangeboten.* (Master Thesis).

Kramer, Evelyn, 2016: *Barrierefreies Fernsehen für hörgeschädigte Kinder mit Fokus auf die Untertitelungspraxis.* (Master Thesis).

Linde, Zoé de/Kay, Neil, 1999: *The Semiotics of Subtitling.* St. Jerome: Manchester.

## References II

Lorenzo, Lourdes, 2010: „Criteria for elaborating subtitles for deaf and hard of hearing children in Spain: A guide of good practice“. In: Matamala, Anna/Orero, Pilar (ed.): *Listening to Subtitles*. Peter Lang, 139–147.

Lorenzo, Lourdes, 2010: „Subtitling for deaf and hard of hearing children in Spain: A case study“. In: Matamala, Anna/Orero, Pilar (ed.): *Listening to Subtitles*. Peter Lang, 115–138.

## References III

Zárate, Soledad, 2014: *Subtitling for Deaf Children. Granting Accessibility to Audiovisual Programmes in an Educational Way.* (Dissertation).