

# Text-to-speech audio description for visually impaired children



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## Presentation outline

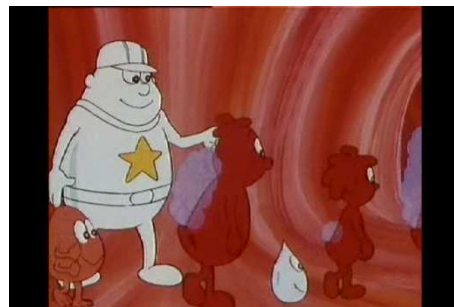
- About the project
- About the audiovisual material used
- The study
- The results of the study
- Questions/comments

## About the project

- aim: examine the acceptability and reception of an educational programme with text-to-speech audio description (TTS AD) by young visually impaired viewers

## About the audiovisual material used

- not a feature film
- educational animation series  
*Once Upon a Time... Life*  
*(Il était une fois... la vie)*
- episode titled *Blood*



## Challenges to be faced

- use of terminology (e.g. granulocytes, lymphocytes, macrophages)
- structure of AD
- phonetic, pronunciation and grammar issues
- question of intonation and punctuation
- selection of appropriate voice to read the AD script

## Why TTS AD?

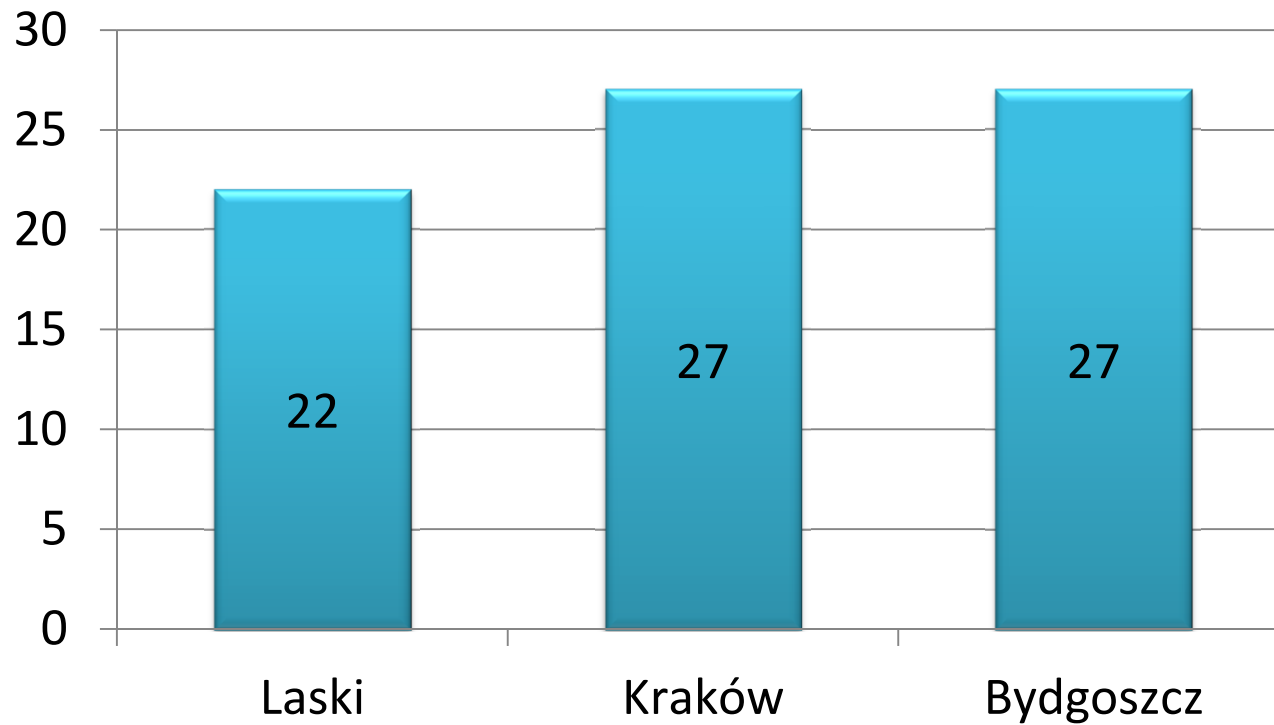
- cost-effectiveness
- more easily available alternative to the traditional pre-recorded AD
- making use of the software that many visually impaired people already have
- selection of voices
- increasing the total number of audio described films
- films available for everyone (people from big cities as well as small towns)

## Software used in the study

- freeware programme BESTplayer (version 2.0)
- text-to-speech application Ivona Reader
- female Polish synthetic voice named Ewa (manufactured by Ivo Software)

# Study participants

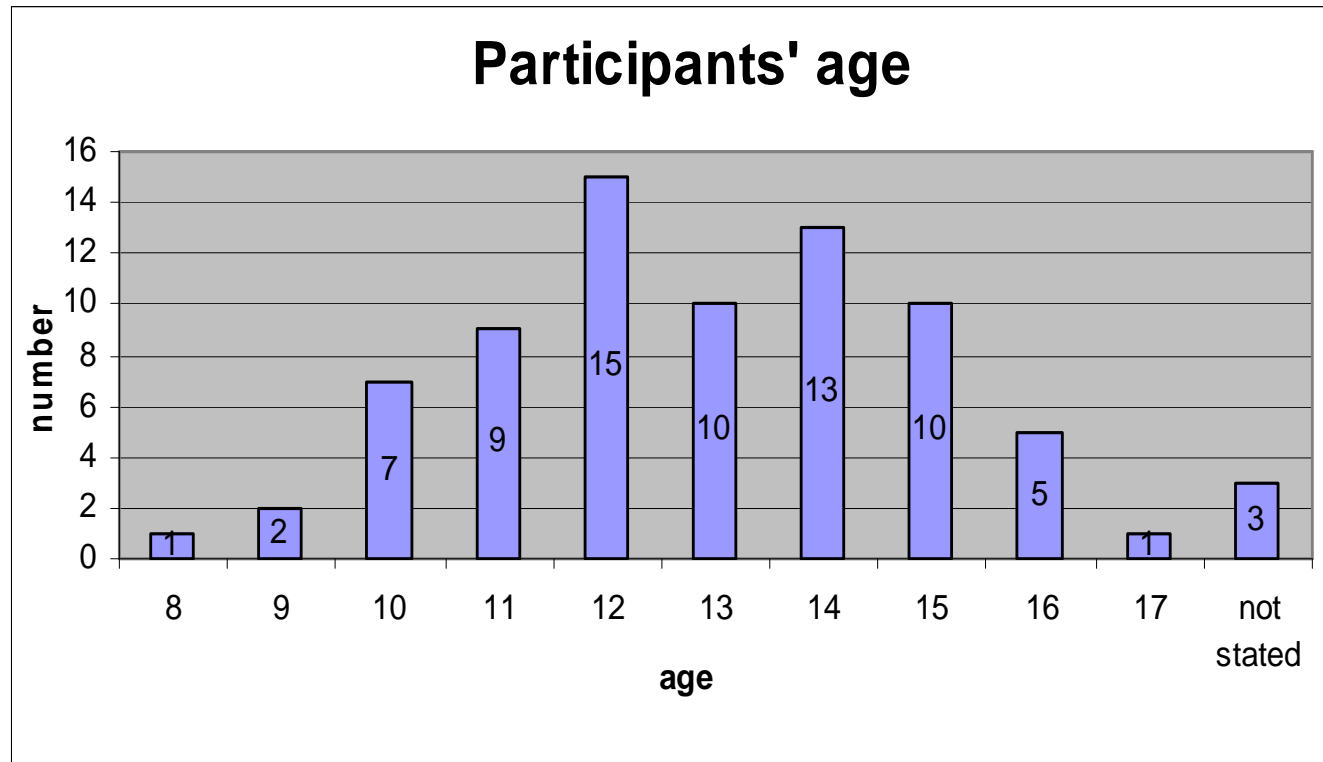
- 76 children (35 girls and 41 boys)





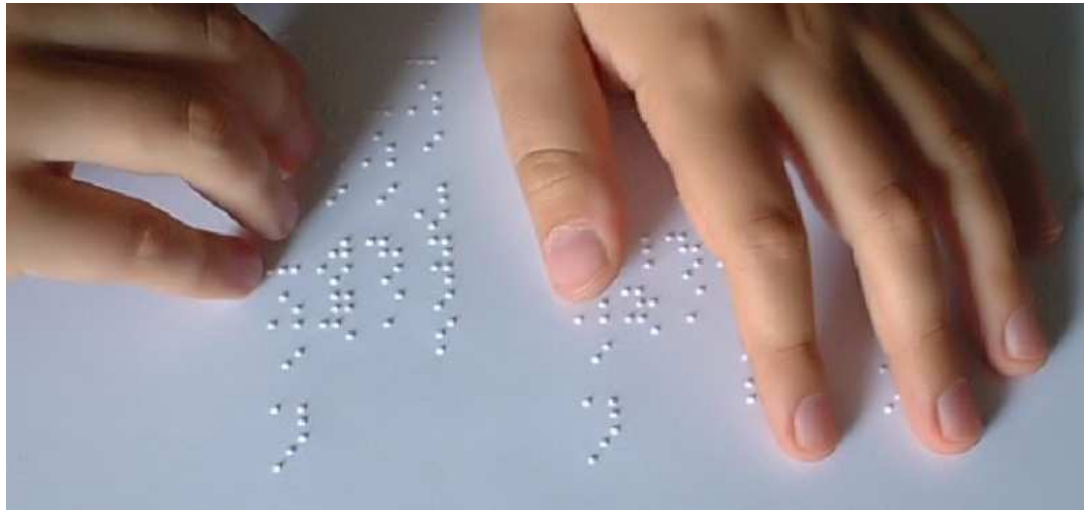
# Study participants

- aged between 8 and 17 years of age



## Procedure

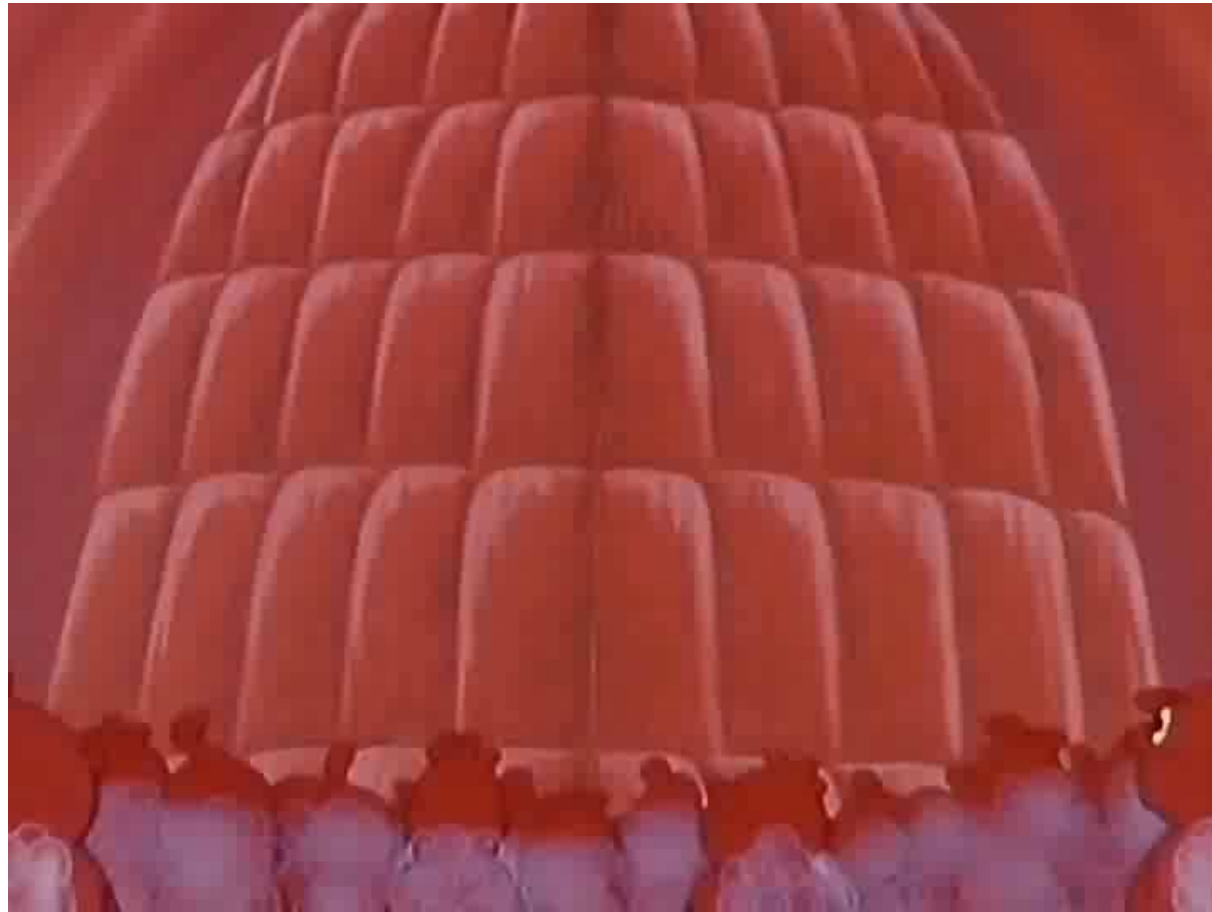
- two questionnaires (children + teachers)
- responses collected in three ways



# Questionnaire

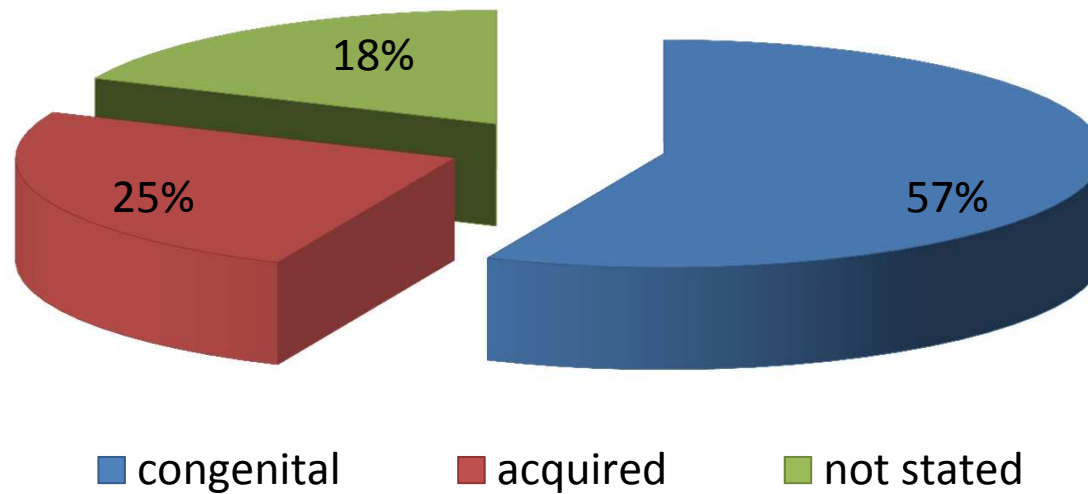
- Children:
  - personal characteristics (gender, age, type and degree of sight loss)
  - previous experience with AD and speech synthesis software
  - film's content
  - opinions on TTS AD
  - opinions on the use of synthetic voice
  - eagerness to watch other episodes of the series with TTS AD
- Teachers:
  - opinions on TTS AD and its use in educational films aimed at visually impaired children
  - such programmes as additional didactic tools used on the biology/environment classes in the future?

# FILM



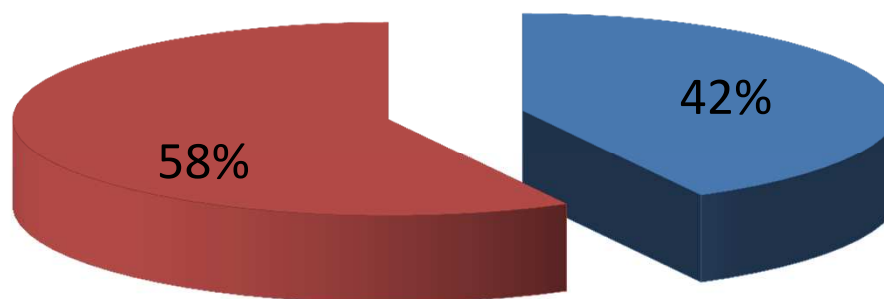
# Results

## Type of sight loss



# Results

## Degree of sight loss



■ blind    ■ partially sighted

# Results

## Content of the film

The role of red blood cells

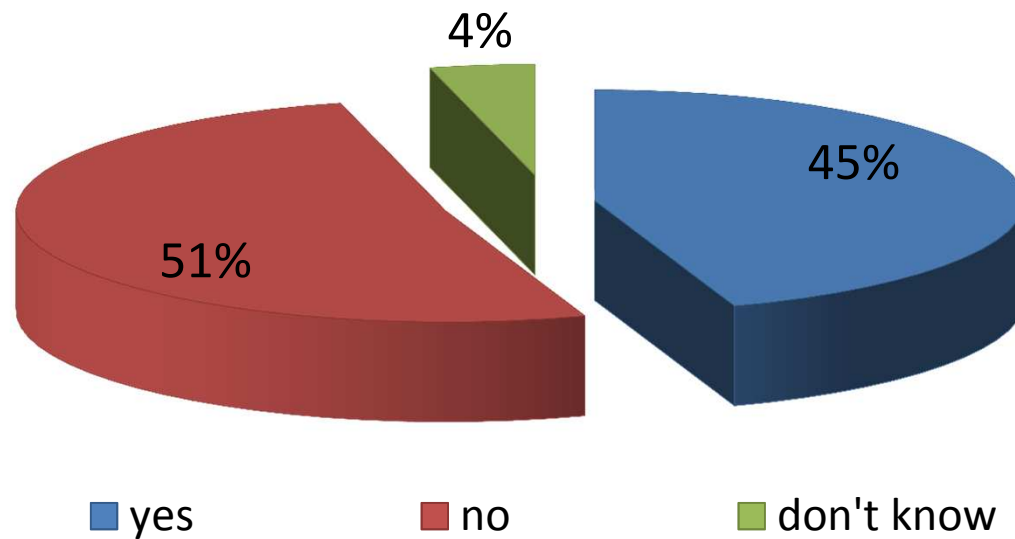


The role of white blood cells



# Results

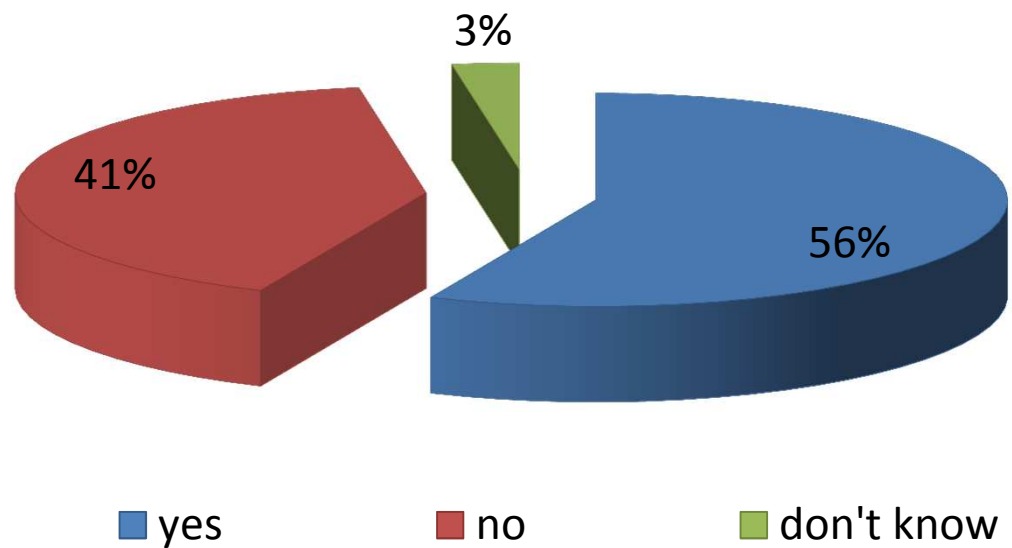
**Have you watched  
any films with AD?**





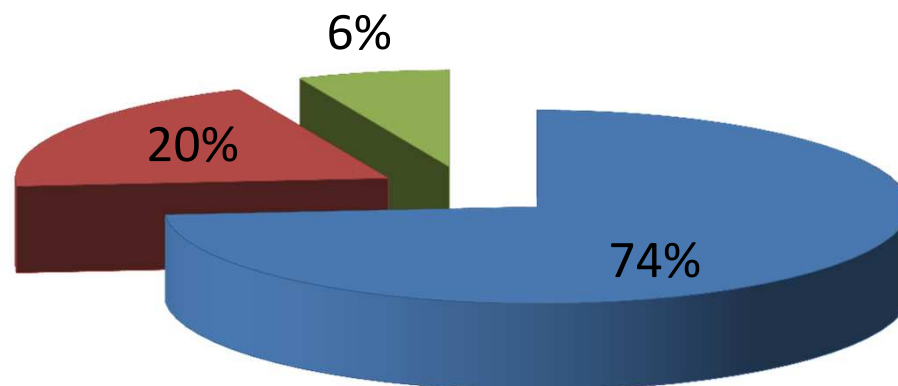
# Results

**Do you use speech synthesis software  
at home or at school?**



# Results

**Did you like the voice of the synthesiser?**



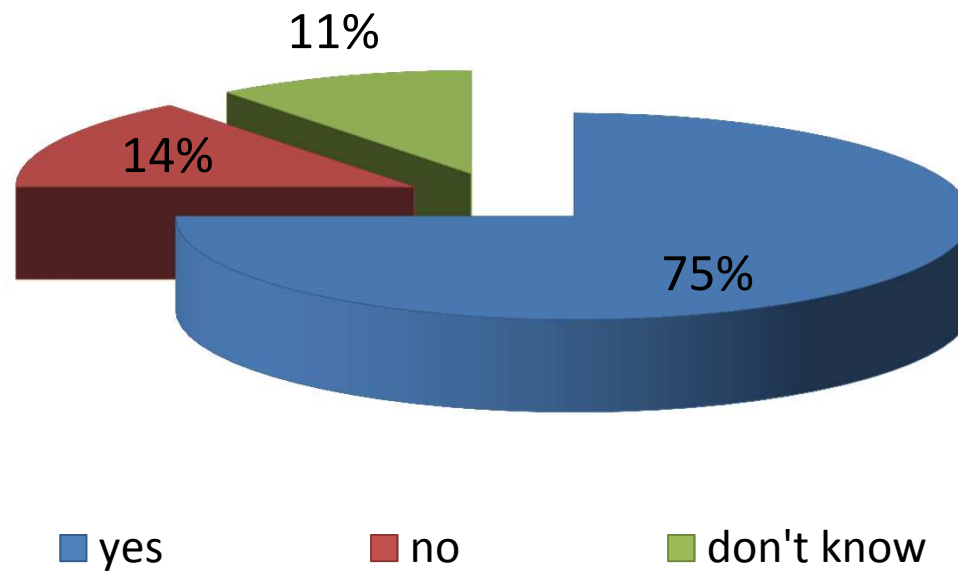
■ yes

■ no

■ don't know

# Results

**Would you like to watch  
the next episodes of the series?**



## Participants' feedback

"I'd really like to watch more episodes. Up till now I have watched films without AD. My parents described me the action of the film. But I prefer films with AD." [Boy, 13 years old]

"I liked the voice and the series is really interesting. If there were more episodes, I would definitely like to watch them." [Girl, 14 years old]

"I want to watch the next episodes, because thanks to them I can better understand what is going on in my body and that is very interesting to me." [Girl, 15 years old]

"I'm very happy that there are films with AD. I think this one was faultless. If I didn't know this was a synthesiser, I would think a real person was reading the text. In general, good and clear AD." [Girl, 13 years old]

## Teachers' opinions

- positive about films with TTS AD
- helpful and comprehensible AD script
- films with AD as an interesting and clear way of providing essential information to visually impaired children
- motivating function of the film
- not used films with AD on the lessons, but would like to include them into biology/environment courses if available

## Conclusions

- challenging task
- demanding group of receivers
- sensitivity and creativity of the audio describer
- other disabilities of children
- promising results
- experience with speech synthesis software
- immense potential of TTS AD but the need for further studies still remains

# Questions and comments?

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More information on the subject available at:

[www.avt.ils.uw.edu.pl](http://www.avt.ils.uw.edu.pl)



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