Teaching Accessibility with Personas

Claudia Loitsch, Gerhard Weber, Jens Voegler

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01 Personas

- **Personas are fictional characters describing a particular customer segment** [1]

- Personas help designers, developers and customers to create empathy with the end user and put themselves in a user’s way of thinking.

- A persona has a name, a picture.

- Describes characteristic, background, desire or a typical day.

- Describe perceptual and motor capabilities, interaction strategies with information technologies, barriers, or include design considerations.

01 Personas

Some examples

WAI [2]

- Stories how people with disabilities use the web
- Type of disability as well as accessibility principles are given.

01 Personas

Some examples

**Pilgrim [3]**

- Educational concept to impart tips how to make a web site accessible in 30 days.

- Day 1 to 5, personas are introduced.

- Personas describe combinations of physical and mental disabilities.

- Day 6 to 30, practical accessibility tips and for which personas these tips are helpful.
01 Personas
Some examples

AEGIS Personas [4]

- Derive accessible interaction models.
- Automatic assessment tool.
- Enable developers to perform an accessibility assessment that focuses on the specific Persona.

01 Personas

**General consensus**
- Personas are useful to impart accessibility knowledge, increase awareness of technological barriers and allow to talk about the target user in a personal and illustrative way.

**Dichotomy**
- Learning a user requirement from a persona versus understanding how barriers affect a large variety of different users.
MOOCAP

- **MOOC’s for Accessibility Partnership** (MOOCAP) is a European project on educating accessible design in ICT.
- Massive Open Online Courses (MOOC) are being developed and materials are published as Open Educational Resources (OERs).
- First course is on Digital Accessibility (DA)
02 Background

MOOCAP day-in-the-life stories
- Carole – blind
- Maria – partially sighted
- Alexander – colour vision deficiency
- Lars – deaf
- Susan – hard of hearing
- Mary – mobility and dexterity problems
- Tom – speech impairment
- Anna – dyslexia
- Monika – elderly

Creation
- Extensive experience with these types of people.
- Not obtained from field research.
- Introduced in the first week and are used repetitively during all course weeks.
03 In this Paper

Course material
- Selected material of the course week Mobile Accessibility are presented.

Educational concept
- A educational concept that uses personas repeatedly to built foundations of knowledge on accessibility.
- Focus on adoption of imparted knowledge and barriers to other user groups.

Evaluation of the course material and use of personas
04 Course Material and Educational Concept

General
- Short learning units (no longer than 6 min)
- Around 20 leaning units per week
- Media: article, video, quiz, discussion
- Creative tasks: create user stories

Example – the first 3 learning units:
1. **Article**: potential barriers on mobile phones. Carol, who is blind, uses the touch-screen of her new smart phone.
2. **Video**: a blind person and a physically impaired person explain their usage of a smart phone in a video.
3. **Discussion**: learners are asked to report on their own experiences, problems they know, and suggestions (by referring a MOOCAP day-in-the-life story or creating a new ad hoc persona).

Potential barriers on mobile devices
(Version 1)

As with the introduction of almost any new computer technology the mobile phone introduced barriers to people with a disability in the beginning. Nowadays these devices can be very useful to them. In this step we introduce you to a few examples.

Information often is needed while being not at home nor in an office. Smartphones allow many activities, such as searching the web, orienting in unknown surroundings and last but not least to call someone if help is needed. Accessible mobile phones have changed the level of independence people with a disability can achieve. Examples:

Carole (http://apji.eu/moocap/?page_id=33) is blind and when working on a desktop computer she uses a regular keyboard, a headset and a braille display. Okay, laptops are portable and come with a keyboard, but placing phone calls and sending SMS through Skype is not very convenient when on the move. Many smartphones
05 Evaluation

Overview

Research Questions

- Quality of the course material
  - understanding, scope, presentation

- Use of personas
05 Evaluation

Overview

Method

- Evaluation during seminar of the lecture series Accessible Documents.
- 50 students registered, 20-30 students usually complete seminar.
- Complete online course as one of the practical seminar tasks.
- 2 weeks to do the online course.
- Questionnaire after the completion of the online course
  - 4 questions to assess whether the aim to impart requirements of people with disabilities was achieved as well as the representation and the scope of course material
  - 3 questions concerning the use of personas
  - Likert scale (strongly agree, agree, neither agree nor disagree (neutral), disagree, strongly disagree)
  - Additional remarks for each question.
05 Evaluation

Overview

Material

- Course contents and MOOCAP day-in-the-life stories were uploaded to Moodle.
- Seminar was conducted online; No face-to-face classroom activities
- **Learning units:**
  1. Read the *MOOCAP day-in-the-life stories.*
  2. Read the article *Potential barriers on mobile devices*
  3. Watch the video *What are you using a smartphone for*
  4. Create a user story (as forum article) and report on accessibility issues.
  5. Watch the first video in the series *Everyday activities of people with disabilities*
  6. Watch the second video in the series *Everyday activities of people with disabilities*
  7. Read the article *Multimedia on mobile devices*
  8. Create a user story (as forum article) and report on what might help to engage developers in accessibility.
05 Evaluation

Overview

Participants

- 25 participants completed the course.
- All participants were students in computer science.
- Aged between 21 and 31 Years.
05 Evaluation

Summary of Results

Course Content
- overall positive feedback
05 Evaluation

Summary of Results

Course Content

• Videos used in conjunction with personas were especially helpful.

• Many comments such as:

  • “Videos were motivated the topic very much.”

  • “Instead of textual description of a persona, I would have preferred also videos of the persona itself, not only about application scenarios.”

  • “As we are talking about real people I prefer to have videos instead of written descriptions of Personas.”
05 Evaluation
Summary of Results

Use of Personas
- Overall positive feedback.
- Creativity task to create ad hoc personas was more challenging (60% of the participants find the creation of ad hoc personas not easy).
Evaluation

Summary of Results

Creativity Task - create user stories

- 51 user stories created during the course
- 27 user stories describe accessibility issues of people with disabilities
- 24 user stories describe developer perspectives
- 8 of the 51 created user stories refer to impairments that were not introduced during the course, e.g.:
  - Anna - multiple sclerosis
  - Lisa – motor neurone disease (or Amyotrophic lateral sclerosis)
  - Karl - one-armed
Example of an user stories:
Lisa is 40 and lives with her husband and children in Leipzig. One year ago she got the diagnosis motor neuron disease. […] She can still articulate well but she has difficulties to coordinate her arms and legs for which reasons she need a wheelchair.

A day in the life of Lisa
Thanks to her husband, Lisa can start a day without the need of a professional carer. After having breakfast together, she takes the public transport to go to work. She uses an app on her smartphone to get updated about latest connections or delay. She needs to hold the smartphone steady with one hand. With the other hand she can type. For large texts, searching information on the web as well as reading she either needs a storage place to put the smartphone or speech input. Zoom or wiping gestured are also difficult as her fingers are slow-moving.

Due to the disease, she had to give up her job in a big logistic company. Today she works in a call centre. She can operate the computer and the telephone service with a mouse and uses a headset. The service application is simple to use and Lisa has no problems in using it.
06 Conclusion

- Use more personas to teach requirements of user needs.
- Incorporate videos (e.g. video personas or people talking about their experiences) as they are more vivid than textual representations.
- Creativity tasks such as creating ad hoc personas help students to start discussing barriers and particular needs of people with disabilities.
Thank you for your attention

- All course material is available as OER:
  https://drive.google.com/drive/folders/0B1xSmiMx9252Ny1uakMzdHFmM28
»Wissen schafft Brücken.«