The Effect of Language in Answering Qualitative Questions in User Experience Evaluation Web-Surveys

Tanja Walsh  
Tampere University of Technology  
33101 Tampere, Finland  
tanja.walsh@tut.fi

Piia Nurkka  
Tampere University of Technology  
33101 Tampere, Finland  
piia.nurkka@tut.fi

Helen Petrie  
University of York  
Heslington, York, YO10 5DD, United Kingdom  
helen.petrie@york.ac.uk

Jaana Olsson  
Suuntaamo Oy  
33101 Tampere, Finland  
jaana@suuntaamo.fi

ABSTRACT
We investigated the effect of language in answering qualitative questions in user experience (UX) evaluation web-surveys. Two cross-cultural case studies of high tech sports watches with altogether 176 participants were carried out. Comparisons in answers were made among 72 native English speakers and 104 non-native English speakers. In the first study native Italian and native English speaking users were compared. Half of the Italians answered in Italian and half of them in English. We found that the response rate for participating to the survey among Italians answering in their native language was 64% compared to only 38% among Italians answering in English. The results of our case studies indicate that translating a UX web-survey into participants’ native language would motivate users to participate in the study, especially if the user sample needs to include more varied users. It is easier to describe more in details and give examples of experiences, express emotions, feelings and ideas in one’s own native language. The results suggest that if more descriptive qualitative data is needed from users, they are able to answer better in their own native language.

Author Keywords
User Experience, User Feedback, Qualitative Data, Web-surveys, Language

ACM Classification Keywords
H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

INTRODUCTION
Collecting user feedback in a fast and reliable way is necessary to minimize the risk of failed products in target market areas. User feedback gathered with UX evaluations during different stages of the product development lifecycle is important for the design of technology products and services, especially for internationalization and localization. However, according to Putnam et al. (2009) among others, data collection with global users is challenging for many reasons: for example, it is not easy to reach users in all needed target market areas. In addition, the selection of methods to be used in the actual data collection can be challenging as the application of common on-site user-centered research methods is not always possible. Constraints in using such methods are caused by, for example limited budgets, the challenge and ability to perform first-hand on-site research without extensive local knowledge, and time frames of product development that can limit the feasibility of field research (Putnam et al., 2009). Therefore, low-cost and agile ways of collecting cross-cultural user feedback are needed to complement the toolkit of UX research methods, (e.g. Viääänäen-Vainio-Mattila et al. (2008) or Putnam et al. (2009).

Over the past two decades researchers have made use of information and communication technologies, and found new ways to collect and analyze data (Benfield & Szlemdko, 2006). The internet has become a promising alternative to collect data replacing traditional paper and pencil and face-to-face methods for scientific and market research utilizing surveys (Singh et al., 2009). Following the increased use of online methods in social research (Glover & Bush, 2005), in UX research too, online methods have become desirable given their lightweight nature, speed and relative ease-of-use (Vääänäen-Vainio-Mattila et al., 2008).

A study on UX evaluation methods by Vermeeren et al. (2010) reveals that around half of the UX research methods surveyed could be used remotely. Hence, the potential of remote methods over field methods should be reviewed. Thus, feedback and data can be collected from users for example via web-surveys. While these new online methods for UX research make the data collection faster and reaches more users from different geographical locations and cultural backgrounds, the importance of understanding of cross-cultural issues in data collection becomes evident. According to Oyugi et al. (2008) cross-cultural issues should be addressed in the actual product,
but also in the methods used during the design and evaluation. Therefore cross-cultural issues need to be considered also in the selection of the methods to be used and in the design of a web-survey. The localization needs of the web-survey are important to assess (e.g. language, symbols, pictures) if the aim is for it to be completed by a cross-cultural sample of users.

The main goal in our two case studies was to investigate how the language of a web-survey effects answering by participants and to gain information about the importance of survey localization in UX evaluation. We collected data on the language effect on UX evaluation in two case studies concentrating especially in qualitative question types such as open ended questions and sentence completion tasks. In our two case studies we had altogether 176 participants from different countries with different native language speakers. We evaluated the UX of premium sports watches in case study 1 with 51 native Italian speaking users and 21 native English speaking users. In case study 2 we had a user sample of 61 non-native English speakers from different native language backgrounds and 43 native English speakers.

USER EXPERIENCE
The interest in HCI has moved from usability and functionality to understanding the quality-in-use of interactive products with a wider perspective to emphasize the importance of experiential aspects of interaction such as fun, enjoyment and pleasure. As a consequence, also a need for new approaches for designing and evaluating products and services has emerged. According to Hassenzahl and Tractinsky (2006) the aim of UX design is to create and enable the outstanding of experiences rather than just to prevent usability problems.

Thus, the value of a product does not depend only on the utilitarian aspects of the product but also, for example, on the social, symbolic and aesthetic aspects it provides for its users. Consequently, the success of products and services depends on a large extent of the level to which they promote a high-quality experience for their users (Law & van Schaik, 2010). UX is assumed to become the main success factor during the ‘loyalty decade’ in which returning customers is the measure of business success (Nielsen, 2008).

However, to benchmark competitive designs, to select appropriate design options or to improve the design, UX needs to be evaluated. A multitude of methods for UX evaluation exists but recent meta-analysis of empirical research on UX show there is still a need for further development (Bargas-Avila & Hornbaek 2011, Vermeeren et al., 2010).

According to Law and van Schaik (2010) one of the challenges is how to select appropriate measures to address the particularities of the evaluation context. The choice of an evaluation method depends on the experience targets, as well as on the purpose of the evaluation and other constraining factors such as time and costs (Vermeeren et al., 2010). Therefore, the primary criterion for an acceptable evaluation is that it is fit for the purpose: making informed and thoughtful choices about the correct methods for evaluation. In general terms, evaluating any human experience, also including UX, needs to address validity (in other words: are we measuring the right construct in the correct way) and reliability (in other words: can the findings be replicated) issues.

In the following section we will take a look at the characteristics of qualitative self-report UX evaluation methods such as sentence completion that we used in our case studies.

**Qualitative Self-Reporting UX Evaluation Methods**

Vermeeren et al. (2010) consider a “qualitative” method as a method without predefined measures meaning users can describe their experiences freely in their own words. Many UX researchers are passionate about using qualitative methods as predefined choice of answers might reveal only a fraction of the whole UX (Vermeeren et al., 2010). The qualitative approach with open-ended responses about experience is seen as one of the best ways of understanding experiences that are constituted around themes like aesthetics and affect. The focus is on the meaning of using technology and what kind of implications it has for users. Qualitative methods emphasize the details and richness of description (Bargas-Avila & Hornbaek, 2011).

While traditional qualitative techniques (e.g. interviews, focus groups, observations) are widely used, projective and constructive methods have also gained popularity in UX research (Bargas-Avila & Hornbaek, 2011). In the projective technique, participants are asked to make sense of an ambiguous stimulus – one that does not quite make sense in itself – by having to add to it (e.g. by filling out a picture or a sentence) (Soley & Smith, 2008). Soley and Smith (2008) explain the theory that by completing the missing part, participants project part of themselves into it, and hence information is obtained about the participants.

Projective techniques, such as association, completion and construction, have been used in clinical psychology to assess factors such as personality and motivation, and in marketing to study consumer’s attitudes (Soley & Smith, 2008). According to Boddy (2007) projective techniques, such as sentence completion, bubble drawings, collage, personification or word association, are a collection of practical research methods which, when used skillfully, can help researchers gain a deeper understanding from participants than would be possible with more direct questioning (Boddy, 2007).

In sentence completion participants are provided with beginnings of sentences that they then complete in ways that are meaningful to them (Soley & Smith, 2008). In UX research the sentence completion projective technique can be used to assess motivations and attitudes (Soley & Smith, 2008), to identify user values (Nurkka et al., 2009, Kujala & Nurkka, 2009a) and meanings (Kujala & Nurkka, 2009b).
Soley and Smith (2008) point out that the sentence completion tasks appear to be more useful across cultures than are measures, such as bipolar scales, because they are less likely to be culturally biased. Walsh et al. (2010b) found in their study of smartphone UX evaluation with a sentence completion method that there are cultural differences in how people experience the product and also in the way people respond to UX evaluation survey and share their experiences with the product. Walsh et al. (2010a) found that a remote online sentence completion survey is a relatively fast and easy way of gathering qualitative user data in an international context, although the analysis can be challenging.

Web-Surveys in User Experience Evaluation
Harton et al. (1996) make a categorization of usability methods based on how the evaluators and the users are located relative to one another. In local evaluations they are usually in the same place at the same time. In remote evaluations, however, they are separated in space and/or time. One of the most popular remote methods is a remote web-survey where the data is collected over the internet.

There are many advantages for using web-surveys in collecting user feedback: They enable gathering vast amounts of data as they can reach a large group of people in a very short time compared to on-site user studies providing that participants have access to the internet, the needed equipment and also the ability to understand, read and write in the survey language, e.g. English if the survey is not going to be localized.

Web-surveys are also rather quick to make and there is a large variety of tools available for creating, administering and analyzing them. Web-surveys can also be used in all development phases of a new online product or a service (Luedemann & Muller, 2010). Luedemann & Muller (2010) point out that web-surveys are typically used as a supplementary method alongside other user research methods and not as the only research method.

The disadvantages of web-surveys include, for example, the risk of low response rates (e.g. Lozar Manfreda et al., 2008) or difficulties in addressing and finding the correct participants for the study (e.g. Nie & Erbring, 2000).

Also the quality of the research may be threatened by errors in coverage because not everybody has access or uses the internet as internet penetration is not evenly distributed across segments of the population. Samples skewed by such attributes may be a challenge as well as there being demographic differences between internet vs. non-internet users: internet users tend to be younger with higher educational levels (Nie & Erbring, 2000) and they tend to live in more urban areas than general population (E-Communications Household Survey Report 2010).

However, the problem with Internet coverage in general is diminishing with time: Internet usage around the world is constantly increasing (Internet Usage Statistics).

Web-surveys are also a rather restricted way of getting results because they should be simple and relatively brief. Global web-surveys also usually need to be translated and sometimes adjusted for specific local use (Luedemann & Muller, 2010), which requires resources and localization knowledge and processes. The translation process can be expensive and time-consuming and therefore many companies prefer not to translate surveys. They would rather provide the survey in English and ask participants to answer in English.

Translation of a survey and letting participants to answer in their own language facilitates participants’ ways of answering, especially in expressing their feelings and emotions, and therefore it is a recommended process (Luedemann & Muller, 2010). Languages are humankind’s principal tools for interacting and expressing ideas, emotions, knowledge, memories and values (Unesco, 2009). According to Unesco (2009) there are other “principle tools” such as pictures and icons, but language is persistent and flexible supporting both spoken and, written media (Unesco, 2009).

Added to this, the cognitive load is much higher if the the participant has to use a second language in answering because the brain must then work to translate the language while simultaneously trying to understand and produce the new information (E.g. Paas & al., 2004).

Thus, support for different language versions in the development and evaluation of technology products and services is almost self-evident with a cross-cultural user samples as only 8% to 10% of the world’s population speaks English as their primary language (Aykin, 2005).

Although, it can be self-evident, that it is easier to answer a web-survey in one’s own native language, it is not always possible to translate and localize a survey due to tight project schedules or budget limitations. Clemmensen & Roese (2010) found in their study that often participants in HCI studies have been picked because they could speak English. This could lead to a e.g. biased survey results.

Our study aimed to find out to what extend translation is necessary in order to elicit good quality user experience feedback with qualitative methods from global markets.

METHODOLOGY
In this section we will present the methodology of our two case studies. Our industrial partner in both cases was a Finnish company Suunto. Suunto designs technical sports watches, dive computers and other instruments used by active people. The products have a global customer base, and therefore Suunto was interested to understand, how web-surveys could be designed and used efficiently in gathering user data and the effect of language in eliciting qualitative data.

Case Study 1
In our first case study we evaluated the UX of a premium sports watch Suunto Elementum Terra (Figure 1) equipped with an altimeter, barometer and 3D compass. The user interface of the product was only in English whereas the user guides were localized.
 Participants in Case Study 1
A total of 149 native Italian speakers and native English speakers Terra owners who had bought the product and volunteered to become product testers when registering at the Suunto web-page (www.suunto.com) were invited to answer the survey in case study 1 (See Table 1). As an incentive to participate, the participants were included in a raffle of three Suunto outdoor devices (RRP 549 € each).

Table 1: Participant information in Case Study 1

<table>
<thead>
<tr>
<th>Country</th>
<th>Language</th>
<th>Invitations sent</th>
<th>Responses Received</th>
<th>Response rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italy</td>
<td>Italian</td>
<td>50</td>
<td>32</td>
<td>64 %</td>
</tr>
<tr>
<td>Italy</td>
<td>English</td>
<td>50</td>
<td>19</td>
<td>38 %</td>
</tr>
<tr>
<td>USA</td>
<td>English</td>
<td>49</td>
<td>21</td>
<td>43 %</td>
</tr>
<tr>
<td>Total</td>
<td>(all)</td>
<td>149</td>
<td>72</td>
<td>48 %</td>
</tr>
<tr>
<td>Total</td>
<td>(Italian-English group)</td>
<td>99</td>
<td>53</td>
<td>54 %</td>
</tr>
</tbody>
</table>

To study the effect of language, the Italian users were divided into two groups: the native Italian group, who received the survey in the Italian language and the native Italian group, who received the survey in English.

The response rate in total within all users, all Italians and Native English speakers, was 48 % (N=72).

For the Italian users, the response rate was 52 % overall. For this group the response rate was 64% if answering in Italian which was significantly higher than if answering in English which only had a response rate of 38% (chi square = 6.76, df = 1, p < 0.01).

For the native English users the response rate was 43 % which was significantly lower than the response rate of the Italians answering in their native language (chi-square = 4.45, df = 1, p < 0.05).

The participants were all men with the average age of 43 years. The participants work in many different areas. The three biggest groups were “Professional (legal, medical etc.)” (N=11: 15 %), “Executive / Senior Manager” (N=8: 11 %) and “Self-employed / Entrepreneur” (N=8: 11 %). Most of the participants had owned the product for at least 7 months (N=51: 71 %).

Methods in Case Study 1
The web-survey in case study 1 was implemented in Webropol-online survey tool (http://www.webropol.com/). It consisted of background questions, statements and sentence completion tasks about UX dimensions: Functionality, features and usability; Look and feel; Identification; and Overall judgment. In addition, participants were able to give open-ended feedback after each UX dimension section. (See the sentence completion tasks in Table 2).

Table 2: Survey questions in Case Study 1

<table>
<thead>
<tr>
<th></th>
<th>1. Functionality, features &amp; usability:</th>
<th>2. How the product looks and feels:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sentence completion: This product is best for... This product is not suitable for... The problem with this product is... This product could be improved by... My expectations about this product...</td>
<td>Sentence completion: Using this product... I think the appearance of this product... I am happy with this product, because... I’m disappointed with this product, because...</td>
</tr>
<tr>
<td></td>
<td>Please, feel free to comment about the functionality, features and usability of this product.</td>
<td>Please, feel free to comment about the look &amp; feel of this product.</td>
</tr>
<tr>
<td>3. How does the product fit you as a person?</td>
<td>4. Overall judgment of the product</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sentence completion: When I use this product... The owner of this product is typically... If other people see me using this product, they...</td>
<td>Sentence completion: Compared to other watches, this product...</td>
</tr>
<tr>
<td></td>
<td>Please, feel free to comment about how this product fits you as person.</td>
<td>Please, feel free to give any additional opinions or comments about this product.</td>
</tr>
<tr>
<td>5. Language questions for Italian-English group: a) How did you feel about answering this survey in English compared to, if you would have answered in your native language? b) Did answering in English have an effect in the way you answered? How? Please explain. c) Understanding the questions and statements was (scale from 1 (= very easy) to 6 (= very difficult)) d) Writing the answers was (scale from 1 (= very easy) to 6 (= very difficult)).</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Furthermore, for the Italian participants answering in English, an additional section of questions about answering in English was added at the end of the survey.

The survey was developed in English and translated into Italian for the Italian-language group by a translation bureau. The answers received in Italian were translated into English and were then analyzed in English (See Figure 2).
The survey was open for 10 days for all the participants. An initial invitation was sent by e-mail with a reminder 5 days later. With the native English-speaking participants it is important to note that there was an unexpected 2 hour maintenance break in Webropol- online survey tool right after the first invitation e-mails were sent that prevented the participants from responding immediately after receiving the invitation. This probably had an effect to the response rate for this group. In both of the other groups, most responses were received on the first day, whereas for the native English-speaking group most of the responses were received after the reminder.

The participants were meant to answer the survey in the language they received the survey: native English-speakers had the survey in English, half of the participants from Italy in Italian and half of the participants from Italy in English. Two Italian users, who received the survey in English, contacted researchers via e-mail and asked whether they could get the survey in Italian. One participant in the group of Italians answering in English had to be excluded from the analysis, because the participant had used an online translator in completing the survey and therefore it was not known whether the participant had understood the questions correctly. This participant had translated the questions from English to Italian and then answered in Italian.

Analysis in Case Study 1
In case study 1 for the analysis of qualitative data an affinity diagram method was used (Holtzblatt et al., 2005). The analysis was done by two researchers. The response rates were calculated for each sentence completion task. The quality of the open-ended answers was analyzed between the native English-speakers’ group and the Italians answering in English-language group. The quality of the content of answers for the sentence completion tasks and open-ended feedback were evaluated by the researchers by analysing what kind of feedback was given: how it was written, what kind of words were used, how descriptive and understandable it was, how much it related to the product etc. The length of the answers (the number of words for each answer) was also calculated.

Case Study 2
In our second case study the main aim was to collect data on long-term user experience by six repeated web-surveys during six months of sports watch use (the Suunto Ambit see Figure 3) while at the same time investigating the effect of language in answering the qualitative questions in the survey.

Figure 2: Translation Process of the Italian UX Survey

Figure 3: The two variants of Suunto Ambit sports watch

In this study the questionnaire was in English for all users, and therefore we aimed at getting a user sample consisting approximately half native English speakers and half non-native English speakers (to allow comparison in their answering regarding style and quality of answers).

Language related questions were included in the first and the last survey. In the first questionnaire, there were questions about participant’s native language and English studies (How long have you studied English at school? 1 = 0-1 years, 2 = 1-4 years, 3 = 5-8 years, 4 = More than 8 years).

Both the first and the last questionnaires included questions on the experience of answering in English as a non-native speaker. The questions were 1-7 Likert-scale type of questions:

- Understanding the questions and statements in the questionnaire in English was...
  - 1 (Very difficult) – 7 (Very easy)
- Writing the answers in English in the questionnaire was...
  - 1 (Very difficult) – 7 (Very easy)
- How did you feel about answering this survey in English compared to, if you would have answered in your native language?
  - 1 (I would prefer to answer in my own language)- 7 (I am fine answering in English or in my own language. It doesn't make any difference for me.)
  - Why?

The main questionnaire remained the same on every survey, and consisted questions on recent memorable experiences with the product, on UX and satisfaction with the product, and life events, feelings and physical exercise of the participants. The user interface of the product at the time of the study started was English as a default, but could be customized to German, Spanish or French. In addition, five new languages were implemented later during the study (Finnish, Swedish, Italian, Portuguese and Dutch. Unfortunately, it is not known what UI language users were using or if they changed them during the six months of our user experience study.
**Participants in Case Study 2**

The participants for the study were selected among the customers who responded positively to an e-mail invitation to take part in the study by answering a short questionnaire with basic demographic, product purchase and usage questions.

The invitation was sent to 521 registered owners of the product of whom 190 (36%) expressed an interest to take part. 121 were chosen to take part based on three criteria: 1. Short usage time of the product; 2. Nationality; and 3. First come, first served: if there were too many participants for certain groups, the order of the enrolment mattered. As an incentive to take part, a participant would receive a product of Suunto worth up to 269 USD if he completed each of the six surveys.

During the study, 13 participants dropped out and a further four were excluded from the analysis due to missing data. The final response rate was thus 20% (104 registered owners of the product).

97 participants (93%) are male (See Table 3), 92 (88.5%) bought the device themselves, 10 (10%) received it as a requested gift, and two received it as a surprise gift. The age of the participants varies between 20 and 65 years: the mean age is 41 years old (mode 45 years). There are 15 different nationalities with the biggest nationality group being Americans (15, 14%).

Over half of the participants (58, 56%) are from Europe (15 participants do not live in their home country). Most of the participants have a university degree: Bachelor’s degree has 34 (33%) and 28 (27%) participants have a Master’s degree.

![Figure 4: How long have you studied English at school? (N=61)](image)

**RESULTS**

In this section we will present the results of case study 1 and 2. The results of case study 1 include response rate for the survey, answer times, length and quality of answers, and the questions about answering the survey in English. The results of case study 2 include answer times, and the questions about answering the survey in English.

**Response Rates in Case Study 1**

One of the main findings of case study 1 concerns the response rates. With the Italian participants the response rate for open ended questions in native language (Italian) was 64 % whereas in foreign language (English) the answer rate was only 38 %, the difference being 26 %. The answer rate of 43 % in the native English-speaking user group is not directly comparable since the maintenance break in Webropol-online survey tool right after the first invitation e-mails were sent.

Parallel readings were found also within the response rates in the sentence completion tasks. With sentence completion tasks, the answer rates varied with the Italian-language group from 53 % up to 91 % (average 75 %) whereas with the Italian-English-language group the answer rates varied from 28 % up to 72 % (average 51 %) the average difference being 24 %. With the native English-speaking group the response rates varied from 57 % up to 90 % (average 81 %).

**Answer Times in Case Study 1**

In case study 1 there was a difference in the duration time in responding between the Italian-language group answering in Italian and the Italian group answering in English: In the Italian-language group the average answering time was 18:09 (min:sec) whereas in the
Italian group answering in English the average time was 24:05 (23 % longer). In the native English speaking group the average time was 20:00.

**Quality of Answers in Case Study 1**

When comparing the quality of the answers to open-ended question for different UX dimensions between answering in native language (the native English-speaking group) and answering in foreign language (the Italians answering in English group), the answers in the native language were longer and therefore more descriptive. On average, individual answers in native language had 52 words whereas the answers in foreign language had 13 words, the difference being 75 % (See Figure 5).

![Figure 5: The effect of answering language while compared the amount of words in open question answers.](image)

In the following there are examples of the open ended answers from both native English speakers and Italians answering in English:

**“Please, feel free to comment about the functionality, features and usability of this product:”**

“The watch looks great and feels great on the wrist. The bracelet would be better if the links were screwed in rather than the push pin system (easier adjustment). It functions well and the screen is gorgeous. The improvements I would suggest are: Weather graph such as on the Core & quot; Snooze&amp;quot; feature on the alarm; ability to scroll back to a previous setting in the menus - right now if you enter the wrong information you must continue through the whole menu before you can get back to enter a correct value.” (Native English speaker, male 45 years, accounting/financing)

“Good and nice watch, good precision in measurement” (Italian answering in English, male 45 years, accounting/financing)

**“Please, feel free to comment about how this product fits you as person:”**

“I guess that I am pretty a typical as a Suunto user in that I own a LOT of Suunto products. As a teacher, my students are constantly commenting on my watches that I own and keep asking me why I own so many watches. I tell them that I just like this particular brand.” (Native English speaker, male 38 years, education/training)

“I am a strive person who likes sports and adventure.” (Italian answering in English, male 32 years, healthcare)

In sentence completion tasks in case study 1 the difference was smaller both in the quality and in the length of the answers. The answers in the native language had on average 6.1 words whereas the answers in foreign language had 5.3 words, the difference being 13 %.

**Questions about Answering the Survey in English in Case Study 1**

We asked questions of the Italians answering in English-group about answering the questions in English: “How did you feel about answering this survey in English compared to, if you would have answered in your native language?”

Seven participants replied that compared to answering in their native language they did not have any problems in answering in English: For example: “no problem to answer in English” (male 75 years, self-employed/entrepreneur)

Three participants answered while it was preferable to answer in their own language, it was OK to answer in English: For example: “sure it’s easier to reply in my language but it’s ok also in English” (male 30 years, airplane pilot).

Three participants replied that they had some problems, for example: “easy questions resolved some minor difficulties with a translator” (male 41 years, professional e.g. legal, medical etc.).

Two participants had bigger difficulties with answering, for example “Italiano” (male 42 years, executive/senior management).

Three answers were not understood, because of bad English, for example “not necessary” (male 44 years, executive/senior management).

We also asked: “Did answering in English have an effect in the way you answered? How? Please explain.”

Eleven participants stated that answering in English did not have an effect in the way they answered: For example: “No. I think I tried to say exactly my thinking” (male 48 years, professional e.g. legal, medical etc.), “no it was like in Italian” (male 43 years, professional e.g. legal, medical etc.).

Three replied that it had some effect. For example: “a little more difficult, obviously, but I usually don’t use English in my work or social life” (male 50 years, professional e.g. legal, medical etc.).

One participant replied that: “the answers were shorter and poorer of quality” (male 50 years, professional e.g. legal, medical etc.).

One replied that “using English, made the answering significantly harder” (male 42 years, executive/senior management).

Two answers were not understandable enough to be analyzed.
In addition the participants were asked to evaluate the sentence ‘Writing the answers was...’ on a scale from 1 (1 = very easy) to 6 (= very difficult). Based on their self-assessment, the participants replied with the average of 2.8.

The participants were also asked to evaluate the sentence ‘Understanding the questions and statements was...’ on a scale from 1 (= Very easy) to 6 (= very difficult). Based on their self-assessments, the participants found understanding the questions and statements a bit easier then answering as they rated on average 2.0.

**Answer time in Case Study 2**

In case study 2 the the average answering time for non native English speakers was 16:50 (min:sec). In the native English speaking group the average time was 15:43.

**Questions about Answering the Survey in English in Case Study 2**

In case study 2 we asked language related questions of the non-native English speakers.

The first language related question was to evaluate the sentence ‘Understanding the questions and statements was...’ on a scale from 1 ( = Very difficult) to 7 (= Very easy). Based on their self-assessments, the participants found understanding the questions and statements relatively easy, they rated them on average 5.9.

The second language related question was to evaluate the sentence ‘Writing the answers was...’ on a scale from 1 (1 = Very difficult) to 7 (= Very easy). Based on their self-assessments, the participants found writing the answers relatively easy, as they rated them on average of 5.7.

The third language related question we asked from non-native English speakers in case study 2 was:

**How did you feel about answering this survey in English compared to, if you would have answered in your native language? 1 (I would prefer to answer in my own language) - 7 (I am fine answering in English or in my own language. It doesn’t make any difference for me.)** Figure 6 gives the summary of the results for this question. The participants replied with the average of 5.2.

Users were also invited to explain why they had given a particular rating for the previous scaling question.

Five participants rated 1 (I would prefer to answer in my own language) 1 (I would prefer to answer in my own language) - 7 (I am fine answering in English or in my own language. It doesn’t make any difference for me.) and gave the reason for their rating as e.g. can express myself better, can give more detailed answers, can express myself faster/easier, can express feelings and emotions. Below there are some examples of the answers:

“I can express myself better” (Romanian)

“Easier to give more details and examples and describe emotional stuff” (French)

“Works fine with a little help of google translate :) but it would have been easier if it had been in my home language” (Swedish)

One user rated 2 and gave the reason for rating as:

“English is OK for me, but I would be able to write more about my experience, with more details, in my native language. ”(French)

Six users rated 3 and gave the reason for their rating as:

“Sometimes it is not easy to describe in English how I feel about things, and sometimes I have to lookup words in google to see if they are speld right, this takes a lot of time for me” (Dutch)

“Describing in the native language would give the opportunity to add more details when describing thoughts or feelings.” (Dutch)

“Words were not of my daily use” (Finnish)

Five users rated 4 and gave the reason for rating as:

“You cannot express yourself as quickly as in your mother tongue. ” (German)

“It’s always more easy to answer in your native language. You don’t have to think about the words you want to use. I don’t use the English language very often. Considering my age, you can imagine that I sometimes have to surch for words and that I don’t know some of the words that are used. “(Dutch)

Nine users rated 5 and gave the reason for their rating as:

“I prefer answering in my own language (especially for the orthography), but it’s not a big problem to answer in English.”(French)

“I’d like to speak and write more and better in English.”(French)

“I can manage with my English, but it would be easier to describe all my feelings and ideas with Finnish. I’m sure that I would write more to answers if I would write Finnish.” (Finnish)

“Often my spelling fail. ”(Swedish)

10 users rated 6 and gave reasons for their rating as:
“Sometimes I did not understand some words.” (Norwegian)

“I feel quite comfortable while communicating in the English language.” (Dutch)

“The adjective comparison was difficult (sometimes subtile)” (French)

“I could understand the questions well. My grammar isn’t very good, but I think you can understand all my writings” (German)

“I use English daily also at my work and thus it is quite natural to use it also now.” (Finnish)

21 users rated 7 and gave reasons for their rating as:

“I like speaking English. So even more attractive for me.” (French)

“No problems for me. If necessary I can use a dictionary and I hope you can understand my English answers :) ” (Swedish)

“I come from a multilingual family and grew up in many countries from different regions of the world. Although Thai is my main language, my first spoken language is Spanish and attended International schools (US English) throughout my school years. I am more verse in English and Spanish. I can speak fluent Thai, but below average in reading and writing.” (Thai)

“In addition to studying English in school I have spent one year as an exchange student in the USA, worked abroad with English as working language and still today big part of my work is documented in English.” (Finnish)

“I work in international company and talk 50% in English and most of the documents I create are in English. So it’s just normal to apply English as language for all communication.” (German)

“Reading and understanding English is usually not a problem. Daily in my work I need to be able to read, understand and explain myself in English.” (Dutch)

“Expressing myself in English is not that difficult for me. Please excuse my mistakes with grammar or spelling.” (Dutch)

“English is the language taught in our schools and is considered the international language of learning, commerce and trade.” (Chinese)

“I have finished part of my schooling in Canada and worked all my life in Canada. I work in English and German, using Croatian very seldom. I feel more comfortable with English.” (Croatian)

“I only need English nowadays when watching movies, reading magazines etc. So, it’s nice to use it.” (Finnish)

“It is actually more straightforward to write in English than in French.” (French)

“I have been living in the US.” (German)

“Because I am most comfortable with writing in English formally compared to my native language.” (Malay)

“I’ve done both my undergraduate and graduate studies abroad and in English language.” (Finnish)

“I like speaking English. So even more attractive” (French)

DISCUSSION AND CONCLUSIONS

In our two case studies with real users of highly technical sports watches, we investigated how the language used in the UX evaluation web-survey affected the elicitation of qualitative user experience feedback. Furthermore, we investigated how the users would be able to answer if they could not to use their native language in reading and answering the survey.

Response Rate in Case Study 1

We found that language of the survey had an effect on response rate. In case study 1 the Italian users, who had to answer the survey in English, had 26% lower answer rate in the survey than the Italian group, who answered in Italian. Italians answering in English did not consider it hard, but it is possible that those who felt more confident in answering in English responded in the first place and those who did not, just did not answer at all. That could also explain the lower response rates among Italians answering in English-group.

When planning a survey only in English with cross-cultural user sample it is good to be prepared for lower response rates and therefore send the invitation perhaps to a larger sample and reserve more time for recruiting users to the study. In our studies the users who were invited to participate had all volunteered for the study and they were well educated with English skills, but still, not all of them answered. Our studies would indicate that translating the survey into users’ native language might increase the response rate, especially if the sample needs to include more varied users. However, if translation is not possible, our results show that statements with tick box are easier for non-natives to answer in comparison to writing answers to open-ended questions, but as mentioned previously, in UX evaluations, qualitative data is also needed to assess the different experiential aspects.

How easy was it to answer in English?

The majority of participants in both studies answered that they did not have difficulties in answering the survey in English. Most of them gave positive feedback on answering in English. The users were educated and in case study 2 most of the users had been studying English at school for over 5 years. Some of them were using English daily at work or had been studying their degrees in English. They did, however, point out that they could express themselves better if the survey was in their own language: It would be easier to give more details and examples of experiences. Furthermore, using own native language is better for expressing emotions and describing feelings and ideas.

Some users reported to have used a dictionary or online translators to help completing the survey. They also
commented that it would be quicker to write answers in their own native language without having to look up words and spelling from the dictionaries.

**Length of the Answers**

We compared the length of the answers in open-ended questions and sentence completion tasks between answering in native language (the native English group in case study 1) and answering in foreign language (the Italians answering in English in case study 1). We found that the answers given in the native language were longer: 75% longer in open ended questions and 13% in sentence completion.

**Quality of Answers**

We also found in case study 1 that the answers were more descriptive and richer in describing the UX when using native language. Thus, if more descriptive qualitative data is needed from users, our studies indicate that users are able to answer with richer language in their own native language. For future work we will analyse at the content of the answers to gain more insight on the quality of answers.

**ACKNOWLEDGEMENTS**

We thank Tiina Taskinen and Christian Nordström from Suunto for co-operation during the studies. This research was supported by the Finnish Doctoral Program in User-Centered Information Technology (UCIT) and the Finnish Funding Agency for Technology and Innovation (Tekes) through the project SUXES.

**REFERENCES**


Soley, L. C., and Smi...

Soley, L. C., and Smi...