

Cultural Differences in the Perception of User Experience

Harry Santoso¹, Martin Schrepp², Andreas Hinderks³, Jörg Thomaschewski³

Universitas Indonesia (Depok, Jawa Barat)¹

SAP SE, Cloud Platform User Experience²

Hochschule Emden/Leer³

Summary

Many products are developed for an international audience. But their design is often done by a small group of designers, that is homogeneous concerning their cultural background. In addition, the adaption of products to different cultural contexts is an expensive exercise and is thus in many cases not considered in the product planning. Currently, not much is known about the influence of cultural aspects on the interaction design of products, since empirical research in this area is quite difficult. We investigate how Indonesian and German students judge common products concerning their user experience. We present some first results and possible explanations for the detected differences.

1 Introduction

An interesting research topic is how the cultural background of users influences their perception of user experience (short UX). Obviously, this is a quite important topic for industry, since modern interactive products are usually designed for an international audience.

The overall impression of users concerning UX depends on their perception of different quality aspects, for example, efficiency, learnability, or novelty. If two culturally different user groups have a different opinion concerning the UX of the same product, this can result from the fact that the cultural background influences the way users perceive different quality aspects. Another possible reason is that the importance of quality aspects is judged differently.

Previous studies related to cultural aspects have been conducted in the area of usability (Caidi & Komlodi, 2003; Clemmensen, & Plocher, 2007; Duncker et al., 2005; Vatrapu & Suthers, 2010). However, the knowledge concerning the impact of culture on the perception of user experience is still limited. The goal of the presented study is to investigate if Indonesian and German students have different impressions concerning the user experience of products.

2 An evaluation with Indonesian and German students

Obviously Indonesian participants will not be able to judge the quality of products with German text on the user interface and vice versa. Thus, differences concerning the interface texts will be unavoidable. The goal was to find products that differ only in this respect, i.e. are identical concerning visual and interaction design and principal content for their German and Indonesian version. In addition, the selected products must be widely used in both cultures. The Amazon website and Skype fulfilled these requirements.

Both products were judged by groups of students from the Universitas Indonesia (Depok, Jawa Barat, Indonesia) and the University of Applied Sciences Emden/Leer. For the evaluation, the User Experience Questionnaire UEQ (Laugwitz et al., 2008) was filled out as an online questionnaire in the German and Indonesian version (Santoso et al., 2016). The UEQ is a semantic differential of 26 items that measures user experience concerning *Attractiveness*, *Efficiency*, *Perspicuity*, *Dependability*, *Stimulation* and *Novelty* (see www.ueq-online.org).

To investigate differences concerning the importance of the UX qualities represented by the scales of the UEQ, six additional statements were included in the Online questionnaire:

- *Attractiveness*: The product looks attractive, enjoyable, friendly and pleasant.
- *Efficiency*: I can perform my tasks with the product fast, efficient and in a pragmatic way. The user interface looks organized.
- *Perspicuity*: The product is easy to understand, clear, simple, and easy to learn.
- *Dependability*: The interaction with the product is predictable, secure and meets my expectations. The product supports me in performing my tasks.
- *Stimulation*: Using the product is interesting, exiting and motivating.
- *Novelty*: The product is innovative, inventive and creatively designed.

These questions could be rated on a 7-point Likert scale with the endpoints *Not important at all* (1) and *Very important* (7). Thus, for each participant we have the ratings of the 26 UEQ items and per scale a rating of the importance of the scale.

Figure 1 shows the scale means for the Amazon website (91 Indonesian and 98 German students) and Skype (144 Indonesian and 51 German students). For Amazon we can see clear differences in the evaluation, which are (except for Novelty) significant on the 0.05 level (T-test, two sided). In general, the Amazon website is rated much higher by German students than by Indonesian students. Even though the Indonesian and the German product version differ only in the language of the interface texts, the perception of their user experience in the two cultures is quite different. For Skype also differences are visible, but these are not significant on the 0.05 level except for *Stimulation* (mainly because the German data set is too small). In general, Skype is rated higher by Indonesian students than by German students.

Let's look on the evaluation of the importance of the UEQ scales. Figure 2 shows these data for all four product evaluations. We can clearly see that the German students judged the importance of the pragmatic quality aspects *Efficiency*, *Perspicuity* and *Dependability* much higher than the importance of the hedonic aspects *Stimulation* and *Novelty*. For the Indonesian

students such a difference could not be detected. The differences between the importance ratings of the scales are significant for the scales *Efficiency*, *Perspicuity*, *Dependability* and *Novelty* on the 0.05 level (T-test, two sided).

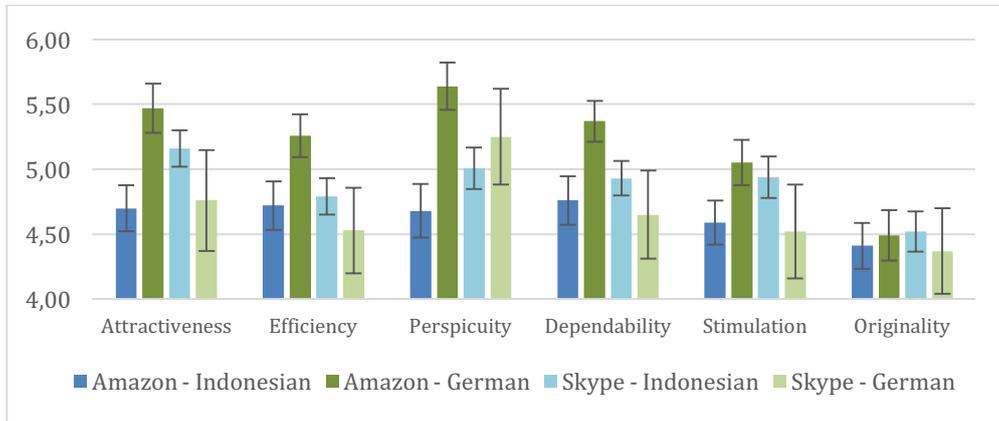


Figure 1: Results for the Amazon web site and Skype.

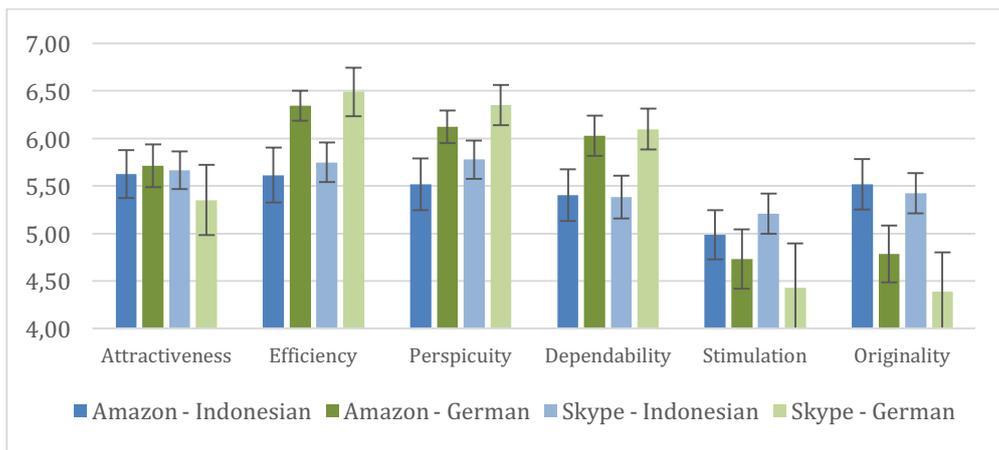


Figure 2: Judgements concerning the importance of the quality aspects corresponding to the UEQ scales.

3 Conclusions

Our data indicate that there are differences between the perception of user experience between German and Indonesian students. Both groups differ in the judgement of the products concerning the quality aspects represented by the UEQ scales and in their judgement concerning the importance of these quality aspects for the overall user experience of a product.

Are the differences caused by cultural differences or by other factors? One potential factor is the language of the interface texts. Clearly differences concerning the quality of the interface texts will have an impact on the user experience of a product. But this should impact mostly the scale *Perspicuity* and not so much the other scales. So, this seems to be not plausible.

One result is that German participants tended to judge the importance of pragmatic UEQ scales much higher than the importance of hedonic scales, for both evaluated products. For Indonesian participants such a clear difference is not visible. In general, Amazon is rated higher by German students than by Indonesian students, while the opposite result is observed for Skype.

So how can we explain these differences. One possible (but in the moment highly speculative) explanation is based on the approach of cultural dimensions (Hofstede, 2001). This is a model that characterized cultures on five cultural factors. For example, Indonesian culture is characterized as a highly collectivistic, while German culture as highly individualistic. Maybe this can explain why a tool for collaboration (Skype) has a better standing than a tool for the ordering of goods (Amazon).

In the next step of the project the focus is to identify the impact of concrete cultural aspects that influence the expectations of users towards product interfaces.

References

- Caidi, N. & Komlodi, A. (2003). Cross-cultural usability for digital libraries. In *Proceedings of the Joint Conference on Digital Libraries*, p. 415.
- Clemmensen, T. & Plocher, T. (2007). The cultural usability (CULTUSAB) project: studies of cultural models in psychological usability evaluation methods. In *Proceedings of the 2nd international conference on usability and internationalization (UI-HCII'07)*, pp. 274-280.
- Duncker, E., Theng, Y. L. & Mohd-Nasir, N. (2005). Cultural usability in digital libraries. *Bulletin of the American Society for Information Science and Technology*, 26(4), 21-22.
- Hofstede, G. (2001). *Culture's Consequences – Comparing Values, Behaviors, Institutions and Organizations Across Nations*, 2. ed. London, New Delhi: Thousand Oaks.
- Laugwitz, B., Schrepp, M. & Held, T. (2008). Construction and evaluation of a user experience questionnaire. In Holzinger, A. (ed.): *USAB 2008, LNCS 5298*, pp. 63-76.
- Santoso, H.B., Schrepp, M., Isal, R.Y.K., Utomo, A.Y. & Priyogi, B. (2016). User Experience Questionnaire: Development of an Indonesian Version and Its Usage for Product Evaluation. *The Journal of Educators Online JEO*, 13(1), 58-79.
- Vatrapu, R. & Suthers, D. (2010). Intra- and Inter-Cultural Usability in Computer-Supported Collaboration. *Journal of Usability Studies*, 5(4), 172-197.

Authors



Santoso, Harry

Harry B. Santoso is a faculty member at the Faculty of Computer Science, Universitas Indonesia (UI). He received his B.S. and M.S. from Universitas Indonesia in Computer Science and his Ph.D. from the Department of Engineering Education, Utah State University, USA. He teaches some courses at UI (e.g., computer-assisted instruction, computer and society, human-computer interaction). He is also the Head of Digital Library and Distance Learning Lab. His research interest includes metacognition, online learning environments, usability, and user experience.



Schrepp, Martin

Dr. Martin Schrepp studied mathematics and psychology at University of Heidelberg. He received a diploma in mathematics 1990 and a Ph.D in psychology 1993. Since 1994 he works in various roles at SAP SE. His work experience includes writing technical documentation, software development and user interface design. Main research interests are the application of insights from cognitive science to the design of interactive products, accessibility and the development of methods for evaluation and data analysis.



Hinderks, Andreas

Andreas Hinderks studied informatics at University Emden/Leer. After his studies, he acted as managing director of ebis GmbH, which developed a merchandise management system for kitchen retailers. Since 2010, he has been working as a product manager at RMT Soft GmbH & Co. KG, responsible for the user-centered and innovative design of business applications with a focus on process control. He is part-time student at the Emden / Leer University of Applied Sciences in the field of media studies. He is involved in the research group HS Emden / Leer in the field of usability and user experience.



Thomaschewski, Jörg

Dr. Jörg Thomaschewski is a professor at University Emden/Leer with a focus on usability and user experience, human computer interaction, requirement engineering, agile software development, internet programming, markup languages, and E-Learning. He is the author of various online modules, among others the module "Human-Computer-Communication", which is used at the Virtual University (VFH) at six university locations. He has extensive experience in usability training, agile methods, IT analysis and consulting.