Detailed Items of Self-Reported Measurements

Note 1: All statements are rated on a standard 7-point Likert Scale:
1 – Strongly disagree; 2 – Disagree; 3 – Somehow disagree; 4 – Neither agree nor disagree;
5 – Somehow agree; 6 – Agree; 7 – Strongly agree

Note 2: There are [visual elements] in some items. For one task, visual elements are "space" and "shape"; For the other, visual elements are "color" and "typography".

RQ1. Explored design examples and comments. (adapted from [1][2])

- (Satisfaction) I am satisfied with the examples and comments I explored to learn [visual elements].
- (Helpfulness) Most of my explored examples and comments are helpful for me in learning [visual elements].

RQ2. Engagement in the learning process. (adapted from [3][4])

- (Concentration) Overall, I was completely involved, focused, and concentrated.
- (Sense of Ecstasy) I feel learning by exploring UI examples and critiques this time is special compared to other learning activities of example exploration made before.
- (Doability) I think my skills are adequate, neither anxious nor bored during exploring UI examples and critiques to learn [visual elements].
- (Sense of Serenity) I was so engaged in the process that I forgot about myself finding UI examples and critiques to learn [visual elements].
- (Timelessness Feeling) I was focusing on the task itself, and time passed quickly.
- (Intrinsic Motivation) I felt self-rewarded for exploring UI examples and critiques to learn [visual elements].

RQ4. Perception with DesignQuizzer / baseline interface (adapted from [5][6])

Note3: The statements below are for the DesignQuizzer condition. Change the "DesignQuizzer" to "Reddit interface" in the statements for the baseline condition.

- **Usefulness**
    - The use of DesignQuizzer enabled me to explore visual design knowledge from examples and critiques more efficiently.
    - Using DesignQuizzer improved my performance in learning visual design knowledge from examples and critiques.
    - The use of DesignQuizzer enhanced my effectiveness in my visual design learning from examples and critiques.
    - I found DesignQuizzer useful in my visual design learning process by exploring examples and critiques.
- **Ease of use**
    - I found DesignQuizzer to be flexible to use.
    - My interaction with DesignQuizzer was clear and understandable.

- o Interacting with DesignQuizzer did not require a lot of my mental effort.
- o I found it easy to get what I want from DesignQuizzer.
- **Intention to use**
  - o If DesignQuizzer is available there to help me explore examples and critiques to learn visual design, I would use it.
  - o I intend to be a heavy user of DesignQuizzer when I want to explore examples and critiques to learn visual design.

[1] Zhenhui Peng, Qingyu Guo, Ka Wing Tsang, and Xiaojuan Ma. 2020. Exploring the Effects of Technological Writing Assistance for Support Providers in Online Mental Health Community. In Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (Honolulu, HI, USA) (CHI '20). ACM, New York, NY, USA, 556–567. https://doi.org/10.1145/3313831.3376695

[2] Zhenhui Peng, Yunhwan Kwon, Jiaan Lu, Ziming Wu, and Xiaojuan Ma. 2019. Design and Evaluation of Service Robot's Proactivity in Decision- Making Support Process. In Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (Glasgow, Scotland Uk) (CHI '19). Association for Computing Machinery, New York, NY, USA, 1–13. https://doi.org/10.1145/3290605.3300328

[3] Heather O'Brien. 2016. Theoretical Perspectives on User Engagement. Springer International Publishing, Cham, 1–26. https://doi.org/10.1007/978-3- 319-27446-1_1

[4] Youwen Kang, Zhida Sun, Sitong Wang, Zeyu Huang, Ziming Wu, and Xiaojuan Ma. 2021. MetaMap: Supporting Visual Metaphor Ideation through Multi-dimensional Example-based Exploration. In Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI '21). Association for Computing Machinery, New York, NY, USA, Article 427, 1–15. https://doi.org/10.1145/3411764.3445325

[5] Viswanath Venkatesh and Hillol Bala. 2008. Technology Acceptance Model 3 and a Research Agenda on Interventions.Decision Sciences39, 2 (2008),273–315. https://doi.org/10.1111/j.1540-5915.2008.00192.x

[6] Thiemo Wambsganss, Christina Niklaus, Matthias Cetto, Matthias Söllner, Siegfried Handschuh, and Jan Marco Leimeister. 2020. AL: An AdaptiveLearning Support System for Argumentation Skills. InProceedings of the 2020 CHI Conference on Human Factors in Computing Systems(Honolulu, HI,USA)(CHI '20). Association for Computing Machinery, New York, NY, USA, 1–14. https://doi.org/10.1145/3313831.3376732