

SCORPION - Slide Coordinator to Review Presentation Items Optimally and Nonverbally

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1 Introduction

Online presentation reviews have become more common due to the pandemic. Although university students and adults often use presentation programs, they need to find newer ways to review them because existing communication means can have the following disadvantages.

Although myriads of social media applications have been made, they can be distracting. They can, for example, cause users to pay attention to other things. Video conference software can also cause digressions. Though software like PowerPoint has a function where users can add comments when pages have issues, the feature is asynchronous and inefficient when using it synchronously since reviewers need to write comments, wait for editors to fix the designs, and give new suggestions again. In other words, existing means can be too time-consuming or distracting.

This paper proposes a modified social media application for users to edit PowerPoint slides without seeing each other face-to-face. Although the main focus is on PowerPoint, other presentation programs can also be used. The research evaluates the application by determining if it is quicker and less distracting than existing means. It also determines if it is more function-wise satisfactory to find its possible areas of improvement.

2 Related Work

2.1 Design Principles of Presentation Slides

This subsection introduces that common slide design issues can be categorised and narrowed down as the proposed system uses the narrowed-down categories.

Any good designs have to think about the memory, attention, and perception of audiences[1]. Although memory is more about designing user interfaces than presentation slides, such as how GUIs are more user-friendly than CLIs as users do not have to remember command names, the other two concepts are applicable in this context. Attention is, for example, having the most crucial pieces of information stand out more than non-crucial ones. If they both have, for instance, a 12-pt font, audiences will not be able to know the importance. The concept of perception discusses the importance of the readability of page designs, such as making background and font colours have different colours.

2.2 Existing Research

A group of researchers decided to create a chat system capable of suggesting messages, such as “Can you pro-

vide some evidence?”[2]. According to the experimental results, moderators had better experiences managing things. However, as the researchers implemented a chat-box, it might still cause digressions for non-moderators.

Another group of researchers conducted a series of experiments to scrutinise the effects of moderation on the activeness of discussions[3]. The researchers discovered that keeping moderation to the minimum, such as only moderating when people began mocking each other, was more appropriate.

Not moderating messages can cause discussions to go off-topic, whereas having too much can affect the activeness of users. After careful consideration, we designed a web application specifically made for remote presentation slide editing.

3 The SCORPION System

3.1 Reviewers and Editors

The proposed system, or SCORPION (Slide Coordinator to Review Presentation Items Optimally and Nonverbally), is a web application. Reviewers use SCORPION to give feedback. In general, they do not edit things themselves. Editors fix the designs based on the feedback received.

3.2 Presumptions

Before using SCORPION, users have to know four things they do not have to worry about by combining points stated in [1]. At the outset, font types and font sizes (overall formats) are determined. In addition, nobody will choose to make terrible designs on purpose. Third, every necessary page and information, including graphics, is present and content-wise correct. Finally, everyone can speak the same languages equally.

After mentioning what users do not have to worry about, it is crucial to state what they need to beware of. At the outset, there is a “font colour issues” criterion. In addition, there is a “background colours issues” criterion. Furthermore, there is a “word issues” criterion. The fourth is a “layout issues” criterion.

3.3 User Interface

These criteria are represented as buttons (Figure 1). The topmost button is the next page counter. Reviewers have to press the button when they cannot find any design issues on, for example, the first page.

Underneath it, there are four design issue counters. Each button only has two states: the number zero to indicate no issues, and the number one to show some within

those four categories. When reviewers think that the second page is too bright in terms of its background, they have to press the background colour issue button. When they see that it has awkward word choices, they have to press the word issue button. Editors have to fix the second page when the counters get updated. When there are no more design issues, reviewers have to press the buttons again, causing it to decrement as a result.

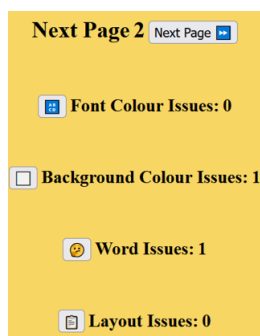


Figure 1: Page 2 has background and word issues

3.4 Implementation

When reviewers press the buttons, SCORPION stores their click counts into a server known as Firebase Real-time Database. Regarding editors, their tabs get refreshed every 2.5 seconds. The numbers shown on their devices are binary (0 or 1).

4 Evaluations

4.1 Experimental Procedures

Ten students, nine third-year students and one fourth-year student, participated in these experiments to determine the speed, distractedness, and satisfactoriness of SCORPION. SCORPION was compared with LINE as a normal communication method due to it being widely used amongst Japanese people. They opened SCORPION on their phones and PowerPoint files on their respective computers. The presumptions stayed the same with either application. Groups 1, 2, and 3 used LINE first, whereas Groups 4 and 5 used SCORPION first.

They edited two similar files about the objective of experiments prepared for them beforehand, each containing zero to four design issues per page. They edited them in a shared OneDrive account.

4.2 Results and Discussion

4.2.1 Objective Evaluation (Speed)

Table 1 shows the time in minutes taken for all five groups. In all of the groups, SCORPION made editing quicker than LINE.

From the perspective of SCORPION, the button-based interface made editing quicker than that of LINE. In general, typing messages is more time-consuming than pressing the appropriate buttons.

Table 1: A table showing the time taken for each group.

	LINE	SCORPION
Group 1	16:36	07:52
Group 2	09:35	06:12
Group 3	17:20	07:46
Group 4	06:25	04:30
Group 5	07:25	05:36

4.2.2 Subjective Evaluation (Distractedness)

For LINE, 40% of the participants answered that it was distracting. For SCORPION, 20% of the participants answered it was distracting. The difference was not significant. From the perspective of experiments, they might have hesitated to do something else when helping out their senior student from the same laboratory.

Nevertheless, most of those who answered that LINE was distracting mentioned receiving messages as a reason. From the perspective of LINE, such issues often happen with social media applications.

4.2.3 Subjective Evaluation (Satisfactoriness)

One of the editors wrote that SCORPION was easier to use than LINE. In general, when reading messages, one has to read every single word first. When using the SCORPION system, they only need to check the counters.

One of the reviewers wrote that SCORPION should be more specific when telling where issues are, which might enable SCORPION to be more satisfactory than LINE when reviewing presentation slides.

Another editor wrote that LINE might be too dependent on how well one could form sentences. From the perspective of experiments, reviewers should have been someone with more experience than editors.

5 Conclusions

In this paper, we presented the SCORPION system, an application to make remote editing of presentation slides quicker, less distracting, and more satisfactory than existing means. We discovered that it made editing quicker and slightly less distracting than LINE. As the areas of improvement, SCORPION should be more specific when telling where issues are.

References

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