Team Kaleidoscope – Smartphone Tutorials

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Introduction

How can we benefit smartphone users by implementing interactive tutorials? This is the question that our team has set out to answer. Today, there are many functions and features that numerous smartphones have to offer but the general user won’t come across them or learn how to use them effectively as well as efficiently. This is an important question to consider as phone companies spend time and money designing and developing these unique features into their phone products. However, if they aren’t being used or are hard to find, then it is money wasted. We also have to keep the user experience in mind. If someone who has never used a smartphone before goes out and buys their first smartphone, they will more than likely be overwhelmed by the many features that are presented before them.

We know that there are online tutorial videos as well as user guides; however, our research experiments have shown that those aren’t efficient learning methods that lead to users being able to use all of the features of a smartphone to their maximum potential and efficiency. This is why we have researched into ways of implementing interactive tutorials that will take the user through all of the functions and features of the smartphone when they turn it on for the first time. We want this to be an interactive experience so that it increases the learning and retention that the user will receive versus watching a 30 minute video. The user will be able to follow along and do what the tutorial teaches them to do in real time.

By successfully implementing these interactive tutorials we will be able to increase the user experience and benefit everyday users with the convenience of knowing how to use their smartphone to its potential. The smartphone industry is a relatively new industry and it is
growing at a rapid pace, making this a very important question to research and answer. This will affect not only the phone companies but every person who uses a smartphone as well. This will also expand knowledge in knowing how to design effective interactive tutorials that increase user retention and maximize learning potential.

**Background, Related Work, and References**

Currently there are not many research papers that cover the exact research question that we have proposed. There are several papers that discuss the effectiveness of varying types of tutorials from video-based to interactive tutorials:


This paper discusses the varying styles, or types, of teaching techniques within a classroom lecture setting. It’s relevant to our proposal because it helps describe the effectiveness of different techniques.

**Effects of alternative training methods on self-efficacy and performance in computer software training.** Gist, Marilyn E.; Schwoerer, Catherine; Rosen, Benson; *Journal of Applied Psychology, Vol 74(6), Dec 1989, 884-891.*

This journal article compares the difference between self-learners and their counterpart and how well they react to software tutorials. This is relevant to our research because of differences between one’s ability to quickly pickup on materials will differ person to person.


This report is of a study of the effects of computer-assisted teaching methods in introductory psychology classes. The use of technology towards class materials and its efficiency may be related to effectiveness of software tutorials.

Methods

After we proposed our research project, we sat down and started to go to work. As a team, we decided what our research attack plan would be. We agreed on conducting a survey to a wide variety of random users to get initial data regarding smartphone learning and usage. We set up an online survey with questions that asked the users if they had a smartphone and how easy or difficult it was to learn how to use it. The survey also asked users their preferences on learning about all of the features and functions that the smartphone has to offer.

The last question and its responses are what we wanted to take the most from the survey, because it provided us with data on what medium users prefer to use to learn new software. The four different media that we presented to the users to choose from are: “Listen to someone instruct you on how to learn the new functions and features,” “Read about the features in a manual or guide,” “Watch a video teaching you the features,” and “Participate in an interactive tutorial.” This doesn’t reflect if one medium is better than the other but instead shows what medium is preferred over another.
We wanted to be able to narrow down our target audience based on the data we collected from the initial surveys. At the beginning of this project, we figured we would be focusing on college students and young adults. However, after analyzing the survey results, we could see that the majority of the age range 46-55 preferred to learn from an interactive tutorial over the other options. Therefore, we have decided to focus our continued research on this age group.

After analyzing the results from our quick survey, we have decided to conduct a brief experiment that will quantify the question we asked about how a smartphone user would want to learn about a new feature or function. We can do this by creating a specific task for a user to perform, for example, asking a user to enable a pin code in order to unlock a phone. Each of us designed a specific process to teach a user how to perform this new task. For example, one method will be written instruction, another being a video tutorial, a voice recording, and lastly an interactive tutorial. The model of phone that will be tested on will remain the same, as will the task that the user will be asked to perform. After each instruction we will ask the user to perform the task on their own, while we will be timing how long it takes to complete each task. The only variable that we will be testing is how a user will retain instructions and be able to replicate the given task. Each of us will complete their respective process on multiple users in order to, hopefully, create a pattern. We plan to test four different participants on this experiment. Each of us plans to conduct one session of the experiment, and they will take place on campus. Figure 1 shows a screenshot of the retention test, which participants will be asked to complete after given their respective instructions.
Figure 1
Results

After we made the survey and gathered data from users over a week’s time, we got the data back and ran analytics on it to get statistical data. 36% of the 167 participants in the survey preferred to have someone tell them how to work the features of their smartphone. 28% would want to watch a video while 27% would want to participate in an interactive tutorial. Only 8% would want to read about them in the manual guide that came with their smartphone. Results from the survey are shown in Figure 2

![Survey Results](image)

Figure 2

Results from our experiment are shown in Figure 3. We tested over 50 participants in this experiment. The average time for each age group/teaching method is portrayed in the graph. The interactive tutorial teaching method is the most effective at the retention test
compared to the other three methods, for both age groups.

![Average Time by Teaching Type](chart.png)

**Figure 3**

**Discussion and Conclusion**

Our research question was “How can we benefit smartphone users by implementing interactive tutorials?” We’ve learned from our survey that most users would not prefer to use an interactive tutorial to learn a new feature on a smartphone. This came as a surprise and was somewhat contradictory to our initial background research. This was the main reason we set out to quantify which teaching method was actually better for the participant, even though it may not be what they think they want. Our experiment answered the question, “Can we benefit smartphone users by implementing interactive tutorials?”, because the results show
that users are able to reproduce the task given in the most efficient time when compared to the other three teaching methods.

We were very limited by the amount of time that we were given to research and perform studies on our research question. We think that, if given more time, we would be able to conduct more thorough experiments. We would also be about to answer the original research question that we proposed, of how we can benefit smartphone users. This research can have an impact on the smartphone industry by allowing companies such as Samsung, or Verizon Wireless, to help their customers get the most out of their feature intensive smartphones, thus creating a better customer experience. As a research team it is unlikely that we will pursue any further within this topic.

Website and Video Links
Website: http://ducso9.wix.com/kaleidoscope
Video: https://www.youtube.com/watch?v=Qu0mM9bdKfk