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“Optimizing Innovation in Knowledge, Education and Design”

EXTENDED ABSTRACT



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Assalamualaikum warahmatullahi wabarakatuh,



First and foremost, I would like to express my gratitude to the organizing committee of i-Spike 2023 for their tremendous efforts in bringing this online competition a reality. I must extend my congratulations to the committee for successfully delivering on their promise to make i-Spike 2023 a meaningful event for academics worldwide.

The theme for this event, 'Optimizing Innovation in Knowledge, Education, and Design,' is both timely and highly relevant in today's world, especially at the tertiary level. Innovation plays a central role in our daily lives, offering new solutions for products, processes, and services. By adopting a strategic approach to 'Optimizing Innovation in Knowledge, Education, and Design,' we have the potential to enhance support for learners and educators, while also expanding opportunities for learner engagement, interactivity, and access to education.

I am awed by the magnitude and multitude of participants in this competition. I am also confident that all the innovations presented have provided valuable insights into the significance of innovative and advanced teaching materials in promoting sustainable development for the betterment of teaching and learning. Hopefully, this will mark the beginning of a long series of i-Spike events in the future.

It is also my hope that you find i-Spike 2023 to be an excellent platform for learning, sharing, and collaboration. Once again, I want to thank all the committee members of i-Spike 2023 for their hard work in making this event a reality. I would also like to extend my congratulations to all the winners, and I hope that each of you will successfully achieve your intended goals through your participation in this competition.

Professor Dr. Roshima Haji Said
RECTOR
UiTM KEDAH BRANCH



WELCOME MESSAGE (i-SPIKE 2023 CHAIR)



We are looking forward to welcoming you to the 3rd International Exhibition & Symposium on Productivity, Innovation, Knowledge, and Education 2023 (i-SPIKE 2023). Your presence here is a clear, crystal-clear testimony to the importance you place on the research and innovation arena. The theme of this year's Innovation is "*Optimizing Innovation in Knowledge, Education, & Design*". We believe that the presentations by the distinguished innovators will contribute immensely to a deeper understanding of the current issues in relation to the theme.

i-SPIKE 2023 offers a platform for nurturing the next generation of innovators and fostering cutting-edge innovations at the crossroads of collaboration, creativity, and enthusiasm. We enthusiastically welcome junior and young inventors from schools and universities, as well as local and foreign academicians and industry professionals, to showcase their innovative products and engage in knowledge sharing. All submissions have been rigorously evaluated by expert juries comprising professionals from both industry and academia.

On behalf of the conference organisers, I would like to extend our sincere thanks for your participation, and we hope you enjoy the event. A special note of appreciation goes out to all the committee members of i-SPIKE 2023; your dedication and hard work are greatly appreciated.

Dr. Junaida Ismail

Chair

3rd International Exhibition & Symposium Productivity, Innovation, Knowledge, and Education 2023 (i-SPIKE 2023)

EMBEDDED VIDEO SURVEY

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ABSTRACT

The collection of data through questionnaires is a common method conducted by academicians. However, some respondents do not understand the statements given in the questions. Long statements can frustrate and bore respondents, resulting in unresponsive answers. As a result, researchers cannot obtain the actual results from questionnaire surveys. To solve this problem, we can embed a video in our questionnaire surveys to depict real situations and make the content easily understandable. Video surveys can easily grab the attention of respondents, leading to an overall increase in the response rate. Researchers can use web-based applications such as Google Forms to create forms for data collection and add videos from YouTube to the survey. Alternatively, researchers can use their own videos by embedding them using a URL. Video-based statements for questions can provide a lot of information in a short time, which is impossible with textual statements. Compared to textual statements, surveys using videos can readily capture and hold the attention of respondents for a longer duration. The advantages of using video surveys include obtaining honest feedback, increasing response rates, and bringing stories to life, as humans can interpret videos better than text. Currently, there is no work carried out on using embedded videos in questionnaire surveys, and previous works have not comprehensively considered this method. Good design of questionnaire will significantly give positive impact to the survey. Therefore, it is sensible to modify the common questionnaire method in order to improve the research outcome and utilize the full potential of using embedded videos for questionnaire surveys.

Keywords: embedded video, questionnaire, survey

INTRODUCTION

Questionnaires are used to gather information and can be answered by any number of respondents. A common questionnaire survey containing many questions to collect related information for analysis. Surveys are tools for gathering data from a population about knowledge, opinion, behavior or facts (Yaddanapudi, 2019). Therefore, questionnaire must be clear enough since there is no interviewer to explain uncertainty or to check the misunderstanding of respondents. Asking too many questions and giving long statements in

questions will cause the respondents frustrated and bored. This may result in unresponsive answers given by respondents. Questionnaire design is an important part of the research because an inappropriate questionnaire misleads the research outcomes. The design of the questionnaire used has a significant impact on the quality of a survey (Yaddanapudi, 2019). To overcome this problem, researchers can embedded a video in their questionnaire survey to show real situation and to make the video easily understandable. Human's brain can interpret video better than text. Video can show facial expressions, speech inflections, and eye contact that are crucial for triggering emotions and reactions. Information retention is significantly influenced by emotions.

PROBLEM STATEMENT

The use of common textual questionnaires in research studies often presents challenges related to respondent engagement and comprehension. Long and complex textual statements may cause respondents to get frustrated, bored and unable to respond. The accuracy and reliability of the data that have been collected are consequently compromised. Furthermore, long statements might not be able to effectively capture respondents' attention or deliver information in a concise and intelligible way. Hence, there is a need to investigate alternate approaches such as using embedded video surveys to increase respondent engagement and total survey response rates in order to enhance the validity of research outcomes.

OBJECTIVE

To improve response rate and obtained reliable answers through embedded video in the questionnaire survey.

DESCRIPTION OF THE METHOD

Questionnaire design is a very crucial and important part of the research because an inappropriate questionnaire misleads the research outcomes. **Figure 1** shows the process of embedded video surveys.

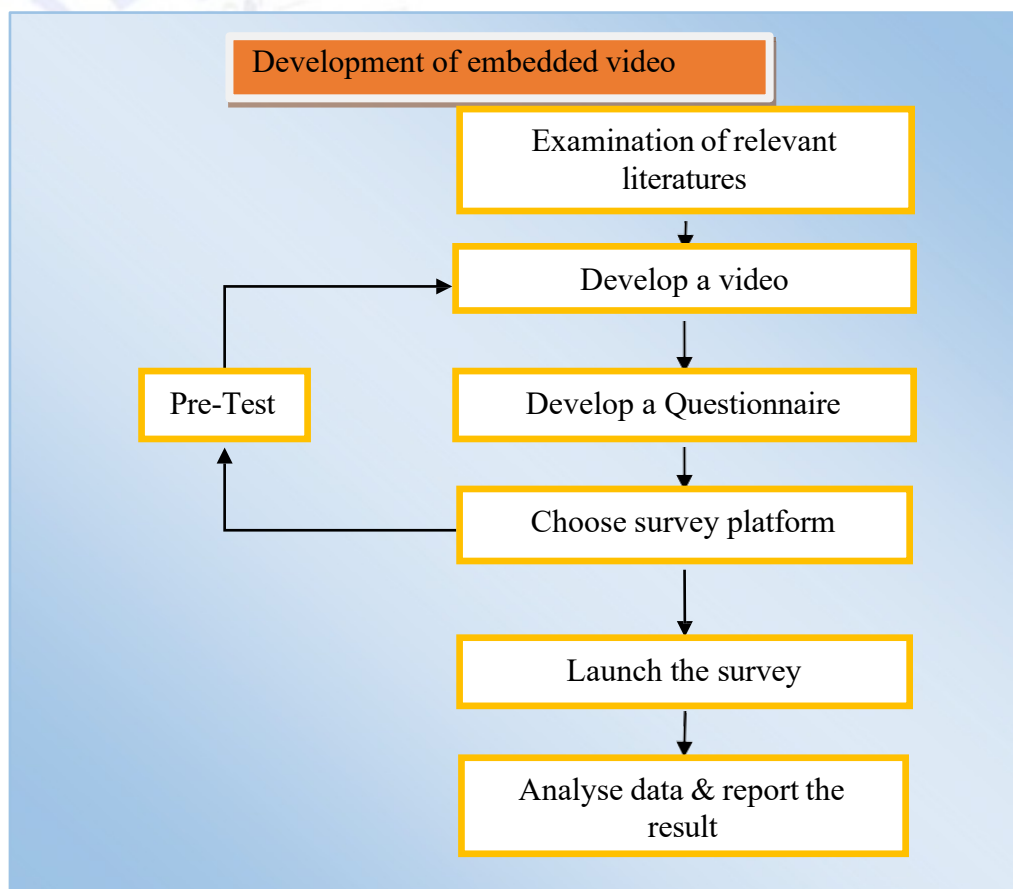


Figure 1: Process of embedded video survey

The steps to conduct a video survey are;

- i. Examination of relevant literature. Before designing a survey, it is important to review other surveys conducted on the same topic. Doing a literature review will help to understand the various components of a survey on that topic as well as calibrate the length and expected time of surveys (Brace, 2018).
- ii. Develop a video. Create a video that effectively communicates the survey questions or presents the scenarios or information that we want respondents to engage with. The quality of audio and visuals must be clear to convey the message effectively.
- iii. Develop a questionnaire. Prepare the survey questions that relate to the video content. The questions can either be asked within the video itself or displayed after the video ends.
- iv. Choose a survey platform. Select a survey platform that allows to embed a videos such as Google Forms and SurveyMonkey. Upload a video to a video hosting platform such as YouTube to obtain URL. This URL is used to embed video into survey. Then, arrange the survey questions strategically based on logical flow. Consider asking questions related to the video immediately after respondents have viewed it to ensure better understanding.
- v. Pre-test the survey. Test the video survey with a small group of participants. Evaluate their respond, gather feedback and make any necessary adjustment to improve the video survey.
- vi. Launch the survey. Distribute the video survey to desired respondents through email, social media or any appropriate channel to reach target respondents.

- vii. Analyse data and report the results. Analyse the collected data using appropriate statistical techniques. Summarize the survey results and make recommendations based on the survey outcomes.

NOVELTY

Common textual questionnaire survey is proven as an effective method to be used for data collection. Somehow giving long statements and questions in the questionnaire may result in unresponsive answers which mislead the research outcomes. Indeed at present, there is no work carried out on using embedded video in questionnaire surveys and previous works have not comprehensively considered this method. Therefore it is sensible to modify the common questionnaire method in order to improve the research outcome aiming to realize the full potential of using embedded video for questionnaire survey

EXPECTED OUTCOMES

It is expected that using the embedded video survey method can;

1. Improve participant engagement. Video surveys offer more engagement and attractive experience. Participants may feel motivated to give comments and responses when using video.
2. Increase data collection. Video surveys give respondents the chance to express themselves both visually and audibly. Hence allow for the collection of more detailed and comprehensive data.
3. Improved survey experience. Adding video to questionnaire surveys can improve the user experience all around. As a result, this can increase participants' willingness to provide thoughtful and detailed comments.
4. Visual content can promote memory retention. By presenting information through videos, participants may have better recall when answering the following questions. In surveys with complicated or detailed topics, this can result in more accurate and dependable results.

CONCLUSION

Researchers are continuing to conduct questionnaire survey as one of the methods of data collection. In the future, this innovation will lead to common practice among them because human's brain can interpret the visual much quicker than text. We can improve research outcomes by replacing a long statement and complex question with embedded video.

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