

A Review On The Innovative Use of Screencast Technique For Learning 3D Animation Software

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Abstract. A screencast is a digital video and audio recording of what occurs on a presenter's computer screen, and it can be used to create sophisticated, information-rich multimedia presentations. Previous research shows that the use of screencast as instructional media in the teaching and learning process is important, especially in learning the use of a software application for 3D animation software. A traditional book to learn 3D animation is less interesting and sometimes difficult to understand. In addition, individual students has differences in processing information as they are differ in terms of cognitive and learning style. However, the exact design effectiveness of screencast also depends on the cognitive style and learning style of the students. Students will easily process the given information, if it is performed in accordance with their preferred or dominant learning style. In this review, we describe the innovative use of the screencasting technique in education especially in learning 3D animation software. We also summarize the guideline process and screencasting development techniques reported by different researchers in an attempt to find a suitable technique for preparing screencast video tutorial for learning 3D animation software. The aim of this review is to summarize recent developments in research on screencasting in education and to try finding some challenging issues that need to be solved for future research.

Keywords : screencast technique, 3D animation.

INTRODUCTION

Multimedia technology usage in the teaching makes learning process more fun as well as it facilitates understanding of a content more effectively [1]. Screencasts are effective instructional format that can be used for tutorials, demonstrations, digital storytelling, and narrated presentations. Previous research shows that the use of screencast as instructional media in the teaching and learning process is important, especially in learning the use of a software application. Demonstration of procedural skills is needed for students to learn software applications.

The potential of using screencast in learning 3D animation software has yet been explored and deemed promising. A traditional book to learn 3D animation less interesting and sometimes difficult to understand. Students who are slow to understand the learning

have facing difficulties to produce animation as the level of students' understanding is different. Screencast is derived from the terminology used by Jon Udell in 2005, which refers to digital

video presentation [2]. A screencast is a digital video and audio recording of what occurs on a presenter's computer screen, and it can be used to create sophisticated, information-rich multimedia presentations. Screencasts are effective instructional format that can be used for tutorials, productive training, demonstrations, digital storytelling, and narrated presentations.

Previous research shows that screencast has many benefits in learning for any subjects. Therefore, the aim of this research is to review the benefits of using screencast in learning and summarize the guideline process and screencasting development techniques reported by different researchers in an attempt to find a suitable technique for preparing screencast video tutorial for learning 3D animation software in the future.

SCREENCAST FOR LEARNING

Nowadays, educators in a lot of disciplines are using screencasting for instructional purposes. Instructional screencasts and online video tutorials have been developed to teach a wide variety of topics, such as computer courses [3], instructional design and technology [4], object-oriented programming [5], undergraduate student research [6], assistive technologies [7], mathematical modelling [8], nursing [9], and the Dewey Decimal Classification System [10]. The aim of these screencasts and video tutorials is to teach learners about a topic and to demonstrate specific actions associated with the particular content area [11]. Digital video content is easier to develop than traditional video production. There is no need of high-tech cameras and production studio with expensive equipment anymore. Nowadays, a small digital camcorder or even a cell phone camera is perfect for capturing quality live shoots. Through user-friendly video authoring software, editing, combining or rearranging multiple video clips are performed with ease on personal computers, laptops and even cell phones. Furthermore, animation software can easily create animation videos; and screen recorder software can easily transform screencast into 'know-how' videos.

In terms of user control, digital video players allow teachers and students to control video viewing through functions such as speed up, slow down, pause, reverse, and replay that help prompt review and analysis of the digital contents [12]. As for learning, allowing user-control is essential for effective cognition and reasoning [13]. There are many benefits and advantages in using screencast for instructional purposes. In their learning environment, learners can view particular screencast at their own pace at anywhere and anytime. Screencasts may be designed to allow students to personalise their learning, highlight important information and listen at their own pace [14].

SCREENCAST TECHNIQUE FOR LEARNING 3D ANIMATION SOFTWARE

Learning 3D animation software such as Blender, Lightwave, 3D Max is not an easy task. A traditional book to learn 3D animation software is less interesting and sometimes difficult to understand. Eventhough, nowadays learners can easily find an online video on any topic that they desire but most of the video sharing sites available are not primarily educational [15].

The short video tutorials developed and shared online may be useful additional resource for teachers and students in learning software functions especially for 3D animation software. Screen capture software is a perfect tool for creating these short video segments. Screen capture software such as Camstudio, Camtasia, Robodemo and others have the capability to capture movements appearing on the computer screen. Furthermore, it has the capability to include narration and text for verbal explanation of the processes involved.

By using a screencast, learners can see how to complete a particular procedure and can observe what the actual screen looks like in completing the specific operation [10]. According to [16], online video-based instruction brings courses alive by allowing online learners to use their visual and auditory senses to learn complex concepts and difficult procedures. Ideally, screencasts may have a positive effect on learning because they provide multiple input channels by presenting an expert performing and describing a task [11]. Screencasting technology fits well with the instructional approach in that it presents digital video of the expert's actions for the learner to see while simultaneously presenting the expert's audio commentary on his or her actions.

Pre-recorded videos of computer-based steps have proven to be an effective means of showing how software applications work. Screencast technology is one of the most powerful tools for creating productive training, tutorials, and presentations. The digital video technology and video screen capture software allows educators to easily create and record original, high-quality prerecorded software presentations that can be used for inclass demonstrations and run by students for further review at their convenience on the Web.

Basically, screencast presentations integrated with narration or text will facilitate the learning process[17]. This elements serve as additional information in the screencast to ensure effective learning [2]. Thus, the inclusion of text along with screencast or screencast with recorded narration helps in emphasizing the understanding of software application [2]. In creating an effective educational screencast for learning, educators need to become familiar and draw upon research in areas such as instructional design, pedagogy, educational psychology and accessibility. [14] also emphasise the need to focus on pedagogical design when producing short screencasts targeting individual topics to distinguish them from a repeat of lecture content [18].

GUIDELINES FOR SCREENCASTING

When creating screencast it should be pedagogically led rather than technological led, that is think about the learner. According to [19], although figure 1 presents the four steps as a linear process, the boundaries are fuzzy and similar to the ADDIE model, there may be jumps back and forth and reiterations. In order to capture screencast, there are both hardware and software requirements. There are many capture software options available with powerful capture and editing features such as Adobe Captivate and Camtasia, free options that simply publish what you capture without any editing such as Jing and Screenr.com.

There are four steps or guidelines for creating educational screencasts in terms of instruction and tips. The four steps are namely; prepare, capture, produce and publish as shown in Figure 1.

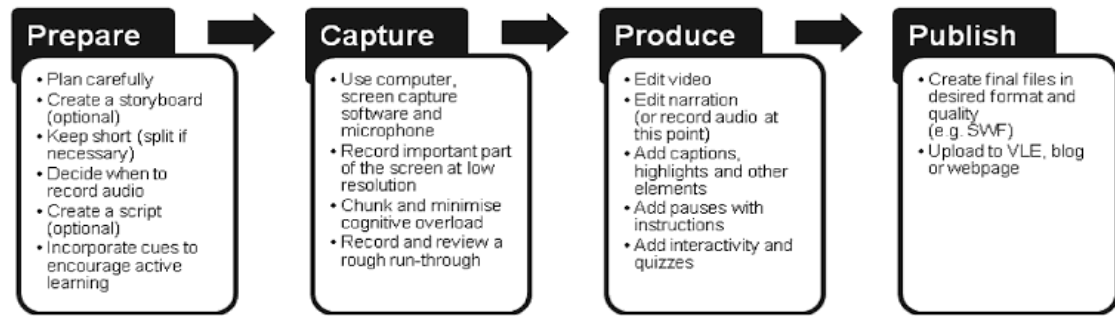


FIGURE 1. Steps for Educational Screencasts

Prepare

Plan your recording carefully. Know what you want to show, to do and what you want to say. Be aware of what your students already know. Creating a storyboard might be useful as it is a visual representation which illustrates the content, navigation and structure of the learning materials [20]. Storyboard can also be used to help the chunking of complex sections into simpler pieces. As a developer, they might think carefully how students are likely to use the screencast and what cues that can be incorporated to encourage them to be active when using screencast. Decide when to record the audio. For short simple screencasts, it can be decided to record narration as we capture the screen activity.

A teacher creates screencasts to help learning happen. Creating good screencasts depends on ‘planning a session with an eye to ward its being recorded and on thoughtful editing afterwards’ [21]. Careful planning and thoughtful reflection can assist in translating teaching activities into useful screencasts. Indeed, this preparation is key to the capture stage in the creation of educational screencasts.

Capture

After planning, the next task is to record. If recording audio, use a quiet room and ensure that there is no any other applications will interfere with the recording. Several tips when recording is to record only the application window or a defined area and to consider recording at low screen resolution (such as 800x600). For software demonstrations, make clear mouse movements at a pace that is suitable for learners to follow. Need to take into considerations of instructional design principles. Strategies to minimise cognitive load can be implemented as suggested by [22] are as the following; start with an outline and end with a summary; split content into small segments/chunks; sequence content logically; use words (text or audio, not both) with graphics; provide clear interface, navigation and instructions; remove unnecessary graphics, text and audio; and focus attention on important areas with visual or verbal cues.

Produce

The produce stage may be extensive, short or omitted entirely. Start with editing the video, removing glitches and unneeded elements such as video showing the loading of webpages. Edit the audio or record the narration at this point. In this stage modifications can be done that have been decided upon in the *prepare* stage: add captions as appropriate, whilst remembering not to overburden the viewer with too many

simultaneous elements; use text animation, highlighting and zoom effects to focus attention and reinforce important points; and add interactivity such as clickable zones and buttons, quiz elements or simply pauses with exhortations to think. The default menu (player) options can be modified if allowed by screen software capture in order to allow learners substantial control. Now the screencast should be ready to publish.

Publish

The publish stage of the screencast creation process involves creating the final screencast files in a technical format suitable for use by learners. There are a variety of options such as Macromedia Flash (swf), Windows Media Video (wmv), Audio Video Interleave (AVI) or executable (exe). A variety of platforms can be used to deliver screencasts like streamed via the internet for watching via a browser with suitable media player, but also downloadable for later viewing on a computer or portable device capable of playing video. For example, Adobe Captivate creates Flash files to be viewed via a browser, also creating the HTML code for launching the screencast. Windows executable files and AVI also can be created. It is straightforward to upload these files to a VLE, a blog, an intranet or the Internet. Decide whether to only allow the screencasts to be viewed online, or to permit downloading for offline viewing.

CONCLUSION

The use of screencast technique as an instructional material in the process of teaching and learning is important, especially in learning a software application especially for 3D animation software. Screencast technology as based on literature has giving great advantage in learning. In order to produce such a an effective and a quality screencast video, an instructional approach and pedagogical approach need to take into considerations. The guidelines for creating educational screencast can be used in order to give a good impact to the learners in acquiring the knowledge.

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