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INFORMATIONHIDINGUSINGAUDIOSTEGANOGRAPHY–ASURVEY

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ABSTRACT

Today's large demand of internet applications requires data to be transmitted in a secure manner. Data transmission in public communication system is not secure because of interception and improper manipulation by eavesdropper. So the attractive solution for this problem is Steganography, which is theartandscience of writing hidden messages insucha waythat noone, apart from the sender and intend recipient, suspects the existence of the message, a form of security through obscurity. Audio steganography is the scheme of hiding the existence of secret information by concealing it into another medium such as audio file. In this paper we mainly discuss different types of audio steganographic methods, advantages and disadvantages.

KEYWORD

Steganography,Cryptography,AudioSteganography,LSB.

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THECURRENTTRENDSOFAUGMENTEDREALITYINEARLYCHILDHOOD EDUCATION

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ABSTRACT

Augmented Reality has been widely used in various level of education such as higher-level education, secondary education (lower/upper secondary level), primary education, and ininformallearning.However,theimplementationinearlychildhoodeducationisstilllimited. Byusinglibraryresearchmethodology,theobjectiveofthispaperistoinvestigatethe existingworkofaugmentedrealityinearlychildhoodeducationbetween2009-2018.Based on the results, it shows that the publication of augmented reality in early childhood education increased slowly withinthesepast ten years. It hasbeenfoundthat the mainadvantage of augmentedreality is to enhance motivation. Early literacy has been found to be the most used topicwithsamplinglessthan30children.Finally,'Marker-based'augmentedrealityhas beenwidelyusedwithmobiledevicesandintermofdatacollectionmethods,'Test'hasbeenusedthe most in this field of research.

KEYWORDS

AugmentedReality,ChildComputerInteraction,EarlyChildhoodEducation,Preschool

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SELECTIONSORTINGALGORITHMVISUALIZATIONUSINGFLASH

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ABSTRACT

This paper is intended to develop an algorithm visualization, particularly selection sorting for an Algorithm and Programming course. Algorithm visualization technology graphically illustrates how algorithms work. This visualization can be used to explain how all data move to the proper position in order to be sortedin adisplay computer for education. Thisresearch consistsof 6 steps whichare concept, design, obtaining content material, assembly, testing, and distribution. Duringthe testingstep, theapplicationisrunandchecked toconfirm that itperformsexactlywhat the author has intended and the students can learn selection sorting algorithm by studying the visualization. Subjects of the research were students at Department of Informatics Universitas Persada Indonesia YAI for implementation of the learning. The data were analysed using the analytic descriptive method and interpreted ina narrative waybased onthe research findings. The algorithm visualization indicates that students increase their motivation and ability to program variety of sorting in programming language they learn.

KEYWORDS

Multimedia,Algorithm,Sorting,Flashmovie,ActionScript

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THEIMPACTOFVRGRAPHICALUSERINTERFACEONOCULUSTOUCH CONTROLLER AND OCULUS RIFT

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ABSTRACT

It is undeniably true that Virtual Reality (VR) has continuously been developed since 1800s and still have been produced till today. However, very few studies have attempted to study on the design of Virtual Reality Graphical User Interface (VR-GUI) that effectively empowers users to interact and immerse in a simulated world, via hardware and software with ease. Therefore, the aims of this research are to compare four different types of VR GUI Controller designs including (2D, 2D animation, 3D, and 3D animation) and to determine UI response time of the Oculus Touch Controller andcomparetheresults with UIresponsetime ofOculus Rift todeterminewhat VR GUI isappropriate for which ages. 168 participants were purposely selected, aged from 12 to 17, 18 to 33,and 34 to 45. The experiment results showed that VR GUI had a significant impact on UI response time resulted fromdifferent types of VR GUI controllers. Lastbut not least, analysisof VR GUIcontroller user data had suggested that VR GUI developers should design appropriate VR GUI controllers that match all agegroups inorder for themtoexperiencea fullyimmersive, perceptuallyreal environment asquickly and efficiently as possible.

KEYWORDS

VRGUI,OculusTouchController,OculusRift,VirtualReality,Generation,Interactive. Full

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ANALTERNATIVEGREENSCREENKEYINGMETHODFORFILMVISUALEFFECTS

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ABSTRACT

Thisstudyfocusesonagreenscreenkeyingmethoddevelopedespeciallyforfilmvisualeffects.Therearea series of ways of using existingtools for creating mattes fromgreen or bluescreenplates. However, it isstilla time-consumingprocess, andtheresultsvaryespeciallywhenit comestoretainingtinydetails, suchas hair andfur.This paper introduces analternativeconcept and methodfor retaining edgedetails of characters ona greenscreenplate, also, a number of connected mathematical equations areexplored. At the end of this study, a simplified process of applying this method in real productions is also tested.

KEYWORDS

DigitalCompositing,GreenScreenKeying,VisualEffects

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THEDEVELOPMENTOFADIGITALSTORYBOOKANDANAUGMENTEDREALITY (AR)-BASED PROVERBS APPLICATION

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ABSTRACT

LearningMalayproverbs is very important tosustaintherich heritage of theMalaycivilizationamong young generations. However, pilot study and literature review show that students face problems in understanding proverbs when learning using conventional method. Thus, this paper discusses the development of a digital storybook to help the learning of selected Malays proverbs under the unity theme using Augmented Reality (AR) technology. The application development was divided into two parts; development of the AR-based proverbs application and the development of a digital story. For the first part, the application was developed based on the combination of waterfall methodology, learning theory principles and AR application development guidelines. For the second part, the development is relied on the digital story development guidelines. This application development can serve as important guidelines for the developers to develop suitableapplications using AR technology to help students learn a range of important learning concepts.

KEYWORDS

Augmentedreality,digitalstorybook,learningtheory,Malayproverbs,mobileapplication.Full

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THE RESULTS OF THE BLENDED LEARNING ACTIVITIES COURSE OF INNOVATIONANDINFORMATIONTECHNOLOGYFORCOMMUNICATION AND LEARNING

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ABSTRACT

The objectives of this research were: 1) to find the effectiveness of theblended learning management activity package 2) to compare the learning achievement 3) to study memory retention and 4) to study the satisfaction with the blended learning activities. The research sample consisted of 3 0 1 st year students enrolled in the Innovation and Information Technology for Communication and Learning course in the 2nd semester of the academic year 2 0 2 0 in the Major of General Science, Faculty of Education, Rajabhat NakhonSi Thammarat University. Theresearchtools were: 1) a blended learning management activity package, and 2) an online questionnaire on the satisfaction of the learners with theblended learningactivities. Thestatistics usedinthedata analysis weremean, S. D.and hypothesis testing using t-test Dependent. 1) The developed efficiency was 8 0 .5 8 /8 7 .6 7 , which was the efficiency according to the specified criteria8 0 /8 0 . 2) The statistically significant comparison ofthelearningachievementafter receivingthelearningmanagement washigher thanbeforethelearning management at the.05 level. 3) Thestudyof memoryretentionafter 2 weeks of learning managementwas not significantly different at the .05 level and 4) The overall of the satisfaction blended learning activities were at the highest level.

KEYWORDS

BlendedLearningActivities,MemoryRetention,Satisfaction

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GAMIFICATIONELEMENTSANDTHEIRIMPACTSONTEACHINGAND LEARNING – A REVIEW

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ABSTRACT

This paper discusses the results of a literature review to identify the elements of gamification in learning that have been applied in previous studies and their impacts on student learning, withonlytaking intoaccounttherelated studieswithinthe last three years(2016 to2018).This isdoneto determine the most effective and suitable elements of gamification to be applied in our study and at the same time to identify research gaps that need to be fulfilled in future researches. The results ofthis review show thatgamificationhas positive impact onstudent learningparticularlyin their engagement and achievement. Furthermore points, leaderboard and digital badge are themost applied gamification elements in the studies. The findings will be used as a guide forusin designing a gamified collaborative learning activities in the 3-dimensional virtual world that will becarried out later.

KEYWORDS

Gamification,Game-basedLearning,VirtualWorld

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ANEVALUATIONOFTHEUSEOFAUDIOGUIDANCEINAUGMENTED REALITYSYSTEMSIMPLEMENTEDATSITESOFCULTURALHERITAGE

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ABSTRACT

Recently, museums and historic sites have begun reaching out beyond their traditional audience groups, using more innovative digital display technology to find and attract a new audience. Virtual, mixed, and Augmented Reality (AR) technologies are becoming more ubiquitous in our society and “virtual history” exhibits are starting to be available to the public. There are numerous studies focusing on AR, however a scant amount of research is being done at historical sites. An initial experiment used repeated measures (ANOVA) to compare and rank three different types of AR devices usedat a siteofculturalheritage. Afurther experiment was thenundertakento observe participants using two different AR devices with and without sound to determine if which device used or the presence of sound impact the usability of the device, or the user’s satisfaction/preference of specific devices. Several surveys, including demographic and usability surveys, were provided in order to collect a range of user data. A two-way repeated measures (ANOVA) were used to analyze the quantitative data gathered. No significant effects were observed based on the quantitative data provided by the surveys, indicating that all devices were equally usable and satisfactory, and that sound did not have a significant impact in this instance. However, thequalitativedata indicatedthat users mayprefer usingAR technologyonasmartphone device and preferred to use this device paired with sound.

KEYWORDS

AugmentedReality,AudioGuide,CulturalHeritage,HumanComputerInteraction(HCI),Usability

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TRANSMISSIONOFSUCCESSFULROUTEERRORMESSAGE(RERR)IN ROUTINGAWAREMULTIPLEDESCRIPTIONVIDEOCODINGOVER MOBILE ADHOC NETWORK

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ABSTRACT

Videotransmissionover mobilead-hoc networks is becoming important asthesenetworks become morewidelyusedinthewireless networks. Weproposea routing-aware multiple descriptionvideo coding approach to support video transmission over mobile ad-hoc networks with single and multiple path transport. We build a model to estimate the packet loss probability of each packet transmitted over the network based on the standard ad-hoc routing messages and network parameters without losing theRERR message. Wethen calculatetheframeloss probability inorder to eliminate error without any loss of data.

KEYWORDS

NetworkProtocols,WirelessNetwork,MobileNetwork,Virus,Worms&Trojan Full

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