

The application of computer graphics education essay



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People that have learning difficulties show deficits in attention, language, and have a lack of interest in teaching and learning environment and also in educational contents. In class they find that it difficult to cope with the subject that has abstract concepts. For example, student that has down syndrome and autism. Therefore, the solution to this is using one of the Computer Graphics applications, the Virtual Reality where in this application they use visual graphic in educational process. The Virtual Reality application gives advantages to some areas such as environment understanding, from literal to symbolism, and social abilities. Based on the Bogdashina O. book, Sensory perceptual issues in autism and asperger syndrome, the sensory profile of people or student with learning difficulties may be different from those who normal. The Virtual Reality application is being used in the case of Virtual School and Virtual Supermarket. The Virtual Supermarket is one of the successful examples of Computer Graphics application in commercial. Then Virtual School has made and still under process and development. Both these case is familiar to everyone in this world. That's why the application of these two environments has been studied by applying the techniques and application of Computer Graphics.

Another application of Computer Graphics in education is as the motivation for Mathematics subject that need students to use a lot of thinking process. Computer Graphics can be a tools for increasing the awareness in the sciences subjects such as Mathematics among students. Because of the application of the real time, interactive, and visual feedback, students can easily observe the effects of the use of Mathematics in produce a good designs. Nowadays, the use of computers in some school has increase due to

the increases in the use of technologies. This is due to the decreases in the percentage of the sciences subject such as Mathematics and Science. After introduce the computers to all school this problem has been solving through time. Through this solution, it shows that the use of computers affects the students in their learning process. In this case, Computer Graphics has been used to illustrate how problem solving give advantages from applications of Mathematics thinking to graphics problems. Graphics tools as the representative has been used as the teaching aids for the teachers to teach their students in class. The area of Computer Graphics is widely used in many of applications for specific purpose.

There are many examples of the successful of the Computer Graphics technology in commercial application. Some of the examples are the virtual stimulators for training in driving vehicles, entertainments, visualisations, 3D representations of future buildings or houses, computer and console games, film scenes and the characters that produced using Computer Graphics. One successful example of Computer Graphics technology in commercial application is Virtual Supermarket. Technique that use in this application is three dimensional (3D) graphic. This application consists of 3D supermarket where it has a variety of products and goods, different visual employees and different functionalities available. The basic task in this case is only to do the shopping. Tools that need in this application are only a computer with the screen, keyboard, mouse, and joystick. Firstly, the user has to move inside the supermarket and then searching for the things that list in the spread out shopping list. User need to pick a something or product and put into the virtual trolley.

There are four modes that being use in this case that related to the application in the Virtual School which is will be use for learning difficulties in school. First is functional of use and play. This mode can be used to teach the important concepts of our daily life environment and it is shown using pre-recorded videos integrated in the virtual world. Second is imagery play, where this functionality mode is possible to teach the student that has special needs about imagery play of the objects. Through this mode the teacher can try to teach the same imagery play to their students without using the computer but between the teachers and the students itself. The third technique is imagery transformations of objects. There are two types of transformations that commonly used which is 2D and 3D transformations. As the technology has improved, the 3D transformation graphics have become more common rather than 2D transformation, but 2D transformation graphics are still widely used. This technique is more to abstract concept to show information that difficult to explain and see in the real world. Therefore, using this transformations technique the teachers are able and more easily to explain to their students about what he or she teaching about in class. In this case the transformation is using the 3D graphic animation transformations into the virtual scene. The last mode is imagery use which is the three dimensional viewing. This Virtual Supermarket can be viewed through 3D viewing where the objects seen seem to be real. The user also can listen to what the avatar in the videos saying or talking and can see their expressions. The idea behind and relationship this application to the education are it is not only an educational game but also a tools for teaching. The attraction of people with learning difficulties towards computers shows the increases in the possibilities that these tools have in their educational

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and learning process. They find that it is easy to use the graphical interface in their learning process. This help increasing their interest in educational contents.

The techniques that have been used in this example are modelling shapes, layout and animation, and rendering. The modelling process can be through polygonal modelling in which dots are connected and the faces of the polygons that result create the image of the objects. A layout and animation technique involves placing the object within the scene. Commonly, some of methods that used in this technique are motion capture of movements, determining the proper angular positions of the elements of the jointed object, and key framing, which is defined the start and end points of a smooth transition through frames. Movement is created by displaying a series of images that are similar to one another on the screen to create the illusion of movement. The frames then can be replaced by a virtual skeleton and the computer automatically calculates the differences in the appearance among succeeding frames. The rendering is the technique where the model is translated into an image by integrating lighting effects such as shadows and scattering of light. In this technique it determines how the light is reflected or refracted from a surface at any point in the object and how the properties of the object materials vary on the surface.

For the animation graphics educational tools for the science subjects, this application helps in taking attraction from the students to the subject, delivery information that easy for students to understand and many more. In the learning process in the class, teachers could display the information that they want to give to their students via a variety of equipment. This is <https://assignbuster.com/the-application-of-computer-graphics-education-essay/>

including the computer monitor, single projector, depending on their teaching and learning needs.

In general, the application of graphics animation in the education acknowledged the positive impact on learning in specific situations. This is because of the information that conveyed by graphics animation are more clearly, can be observed, especially when involving the movement and easy to understand. However, if the abstract and the continuous learning, graphics animation may be interfering the student understands about what they learn. Because of the burden of information through graphic presentation animation, the like hood of confusion will occur during the process of selective attention on certain aspects. In this case, graphic animation will ease the cognitive load when the graphic presented in stages. Graphic presentations in stages also have an impact reinforcement to understand and remember the process and facilitate students to encode the information of what they have learned correctly.