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*Geovisualization technologies: the guide to exploration and infinite knowledge*

In contemporary technology, virtual reality is the leading provider or technology’s new chapter of creating simulation. Browsers, such as Google Earth, provide maps and information of real place, allowing the users to interact and explore regions never known to them. The applications of Geovisualization Technologies have benefited humanity on a global scale for teaching and spreading knowledge around the world. This is indisputable due to the easy-to-access availability of live geographic data for Earth and the Universe, the aid on teaching fundamental information and the opportunity of allowing everyone to take virtual adventures that would be impossible in real life.

Geovisualization technologies today can provide information faster and easier than ever, making it possible to reach a greater audience. In Annette Lamb’s article “Virtual Expeditions: Google Earth, GIS, and Geovisualization Technologies in Teaching and Learning.” she proposes that geovisualization technologies can reach a great audience by “enhancing teaching and learning across a variety of academic disciplines” (Lamb). Visualizing information makes it easier for everyone to participate in learning and understanding new concepts that were difficult to comprehend before. Interactive maps are a great tool for users to read and become familiar with a place’s culture, navigation and position in the world. Annette Lamb also introduces that these visual and easy-to-use formats “allow participants to collaborate on the creation or enhancement of maps by adding and editing text, graphics, photos, or video.” (Lamb). For instance, Google Maps and Wiki-Maps provide an interactive interface of the globe, where users can move around and explore new places. They can see how it looks like, see pictures taken by other users, read information of buildings, historical sites or even upload pictures and other information themselves, if they have visited a specific place. In more in-depth accessibility, Sarah Elwood addresses the contribution in assembling and enabling “an ever-expanding range of individuals and social groups to create and disseminate maps and spatial data” (Elwood 256). Now users not only have the option to edit post-programmed work, but also have the ability to aid in the creation of a geovisualization software and other visual spatial processing data. In general, geovisualization technologies facilitate the understanding of information and the ability to reach greater populations by sharing and editing information for and by everyone.

The applications of geovisualization for academic research and experimentation facilitate the work of students and scientists on understanding information and data for a task or assignment. In K. Wayne Forsythe’s article “Using geovisualization to assess lead sediment contamination in Lake St. Clair”, geovisualization technologies were used in determining contaminated areas in the lake that were undetectable before. Spatial data and computer interfaces “allowed for sediment contamination patterns in Lake St. Clair to be identified. Traditional dot maps provide limited information concerning the areal extent of pollution” (Forsythe 156). It is profound how advantageous and practical Geographic Information Systems (GIS) really are in real life scenarios. Using these systems, scientists are able to study more in-depth information about their conducted experiments, where previously they were challenging or impossible to accomplish. Browsers, such as Google Earth, are multipurpose systems that “contain endless opportunities to see how geography and social topics connect” (Lamb). Students are able to study a variety of subjects using these software products. Historical sites can be explored in both present and past views, allowing students to observe and compare their gradual change overtime. Geovisualization Technologies with sharing capabilities “allow visitors to explore some of the world’s greatest works of art” (Lambs) by viewing images using aerial photography, where images can be displayed once hovering over a museum or a gallery on screen. Artists can be inspired by discovering new pieces of art and finding new interesting books to read. Geovisualization technologies not just spread information, but provide helpful tools and platforms for information to be studied and explored by students, scientists and other individuals.

Virtual expeditions are a common use of geovisualization browsers, where users can take virtual trips that are impossible to be accomplished in reality. Geovisualization systems “allow people to take virtual adventures to far off places around the world, under the ocean, and even into space” (Lamb). Google has many geovisualization browsers such as Google Earth, Google Ocean, Google Moon and Google Mars, that display satellite images and three-dimensional landscapes, where the user can interact. As mentioned, not just Earth can be explored, but the Ocean, Moon and Mars as well. The explorer can visit other celestial bodies, where the visuals are retrieved from NASA’s exploration satellites. This experience is so crucial in virtual exploration, where “visualization can provide insight on what people believe to be significant or meaningful components of a place” (Newell 19). Geovisualization research provides the true display of a place, allowing the user to identify important insights of it and explore it in his or her own way. Robert Newell also notes how a narrative geovisualization experience “exhibits the ability that visual media has for interacting with people’s sense of place” (Newell 20), indicating the different interpretation a user may have for a specific explored place through geovisualization browsers. With the presence of this media, the individual has the knowledge of his or her place compared to the rest of the world. The user is aware of his or her surroundings and is no longer an outlier. Another tool of geovisualization is the Global Positioning System (GPS) where the system provides an interactive interface of the globe, where users can move around and explore new places. When taking a trip, the path in between two places is displayed in detail. This allows the user to see which root to follow depending on factors such as the cheapest or fastest way to reach the desired destination. Geovisualization technologies allow everyone to reach further into the globe with efficiency and have a greater sense of their position in the world.

In conclusion, geovisualization technologies assist humanity in teaching and spreading knowledge around the world. This is evident due to the easy-to-access availability of live geographic data of the world, the assist on teaching fundamental information to workers or students and the opportunity of allowing everyone to take virtual adventures that would be impossible to accomplish in real life. This branch of technology is relatively new and is still under major development. Improvements and new innovations are enhancing the experience of using geovisualization technologies. Future means of geovisualization will provide a greater amount of information and new, improved products that will become the foundation of humanity’s next step for technological advancements.

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