Over the past decades the advancement of technology and its subsequent introduction to the Humanities has led to the development of several applications that enhance study and research in disciplines such as Classics, archaeology, epigraphy, and linguistics. The focus of Digital Humanists and other Humanities scholars has turned to the efficient storage of information that facilitates search, comparative studies, accessibility, and consequently research. In areas, such as archaeology and epigraphy, the creation of projects that provide access to 3D models of the artifacts as well as to virtual replications of ancient sites has resulted in the opening of new areas of research and reconsideration of traditional research issues. A problem that is yet to be considered, though, is how a scholar and a student are to perceive Classical Drama, the theatrical space, the distances between the actors, the chorus, and the audience, the logistics of the performance, and the cultural aspects at play. This paper discusses the importance of experiential learning and the use of virtual reality as a means of promoting traditional edification methods and presents the Magic Mirror Theater, a web application designed to facilitate the study of Classical Drama.

Experiential Learning

Dewey, an American philosopher, psychologist, and educational reformer in the late 19th early 20th century, first suggested and implemented the paradigm of effective teaching that combines traditional methodologies with real-life experiences so as to achieve the most effective and truly pedagogical experiences. He first tested this reconsideration of traditional teaching in his experimental Laboratory School in Chicago and in 1896 published his book The School and Society in which he explicates his rationale, methods, methodology, and the practical results. According to Dewey, experiential learning is developed by and based on the following three "unities":
1. the unity of abstract knowledge and doing in the real world
2. the unity of action and reflection and
3. the unity of the individual with the community

How do these relate to the teaching and understanding of Classical Drama? Scholars and students of Classical studies very early familiarize themselves with the technical knowledge regarding, for instance, the number of actors (2-3 male actors), the members of the chorus (12-15 in tragic plays, 24 in comic plays), and the fact that orchestras traditionally were circular (with the exception of the theater of Thorikos, where it is rectangular). However, how feasible is it for them to apply this knowledge to the real world, and, more specifically, is it possible to truly comprehend the movements of the limited number of actors when they need to leave the stage, change costumes in order to impersonate another character, and then return while the chorus is singing for 150 lines. Also, can modern audiences really understand the performance of female roles by male actors? Finally, is the overall perception of ancient productions possible when one is not given the opportunity to actually walk in the theater, feel the connection, both physical and dramatic, between actors and audience, and also "experience" the performance in its actual natural surroundings.

The Magic Mirror Theater is a technologically advanced educational tool for the effective and comprehensive study of Classical Drama. The program involves the 3D digitization of ancient theaters as well as other objects for theatrical performance (such as replicas of props, costumes, and mechanical devices). An embodied environment for experiential learning and an intuitive natural user interface were developed that allow the users to interact with the system and the virtual objects, using natural body motion and gestures. The users can walk in life-size replicas of Classical theaters, interact with virtual objects, using augmented-reality technology, and ultimately understand the circumstances of performance in the Greco-Roman world.

In this prototype technique the classroom projector or computer screen can be used as a “magic mirror” in which the users can see themselves standing in the middle of a virtual theater, which is a real-life digital replica of the well-known ancient theater of Epidaurus. The users can intuitively understand the size of the stage and the structure of the theater by simply walking in the virtual space and visually comparing the size of their holographic body with the size of the depicted virtual elements of the theater, which is an automatic process of our brain that is triggered any time we visit a new space (Glenberg et al. 2008). The users can also choose between 1st and 3rd person’s view, hold virtual props, and replicate their body multiple times in the virtual space in various different
arrangements. The latter is a useful feature, as it facilitates the understanding of those parts that involve the members of the chorus (dancers), whose number varies across authors and plays. This educational system covers cross-disciplinary material on Classical Drama, and its implementation is based on archaeological evidence on the number of actors and choristers, their gender, the theater in which it was originally performed, the season and time of the performance (relative to the sunrise or the sunset), the structure of the theater (type, size, auxiliary rooms available, etc.), as well as information about costumes and mechanical devices used during the performances. The material is presented to the users through an experiential-learning environment that can be used either by the instructor as a novel teaching tool, or by the scholar of Classical Drama who will ultimately understand better the circumstances of performance in the Greco-Roman world by personally interacting with the aforementioned virtual objects.

References:
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