Small 1.5cm tall unicorn souvenirs

This study explored the possibilities and challenges that 3D printing could generate in the production and consumption of tourist souvenirs. The team undertook a study in collaboration with Historic Environment Scotland (previously Historic Scotland), in Stirling Castle, Stirling, UK. The aim of the project was to create a small prototype collection of 3D printed souvenirs based on scanned artefacts from the Castle and then interview visitors to the Castle on their perceptions of the printed items with the view of considering the feasibility of incorporating the technology within retail heritage environments and gift shops.

Data collection took place in July and August 2014 where visitors experienced a 3D printer in action. The researchers also observed and recorded their impressions of the visitor engagement with the 3D printed objects and the surrounding environments during data collection. Finally, informal conversations with retail buyers and conservation employees of Historic Scotland before, during and after the completion of the project revealed some of the opportunities and current obstacles in the further adoption of this technology within a heritage environment.

The research was qualitative and exploratory in nature based on a constructionist philosophical approach. Constructivism posits that an external objective reality independent of the individual does not exist. Instead, each individual constructs knowledge and his or her experience through social interaction. This research paradigm emphasizes the understanding

of social phenomena rather than simply explaining it (Constantino, 2018). “In terms of methods, constructivist qualitative research studies typically emphasize participant observation and interviewing for data generation as the researcher aims to understand a phenomenon from the perspective of those experiencing it. The researcher's understanding is co-constructed with that of the participants through their mutual interaction within the research setting and dialogic interaction through researcher-initiated data generation efforts such as interviewing” (Constantino, 2018).

After some deliberations over the suitability of the pre-scanned files for 3D printing and generating some prototypes, it was decided that they were not entirely appropriate and an alternative list of objects were produced. The researchers experimented with setting up an ‘Ultimaker 2’ portable 3D printer within the Castle’s main Hall and observed the visitor reactions to the potential of creating their own souvenirs of that place (through choice of pre-defined imagery, materials and scale). The printer was set up so that participants could see and hear the items being printed whilst they were being interviewed. Items that had been printed in a variety of materials and scales were also presented to the visitors. The researchers explained the purpose of the study and invited visitors to take part in a brief interview at the end of which, they were offered a 3D printed unicorn, which reflected the Castle’s branding, as a thank you for their participation.