

I SEA – Virtual reality to evaluate audience attitudes about science communication

António Coelho
Carla Morais
Lucy Atkinson
Alexandre Jacinto
Rui Nóbrega
Marta Varzim
João C. Paiva
Luciano Moreira
Teresa Aguiar
Ana Teixeira
José Vieira
Diogo Coelho

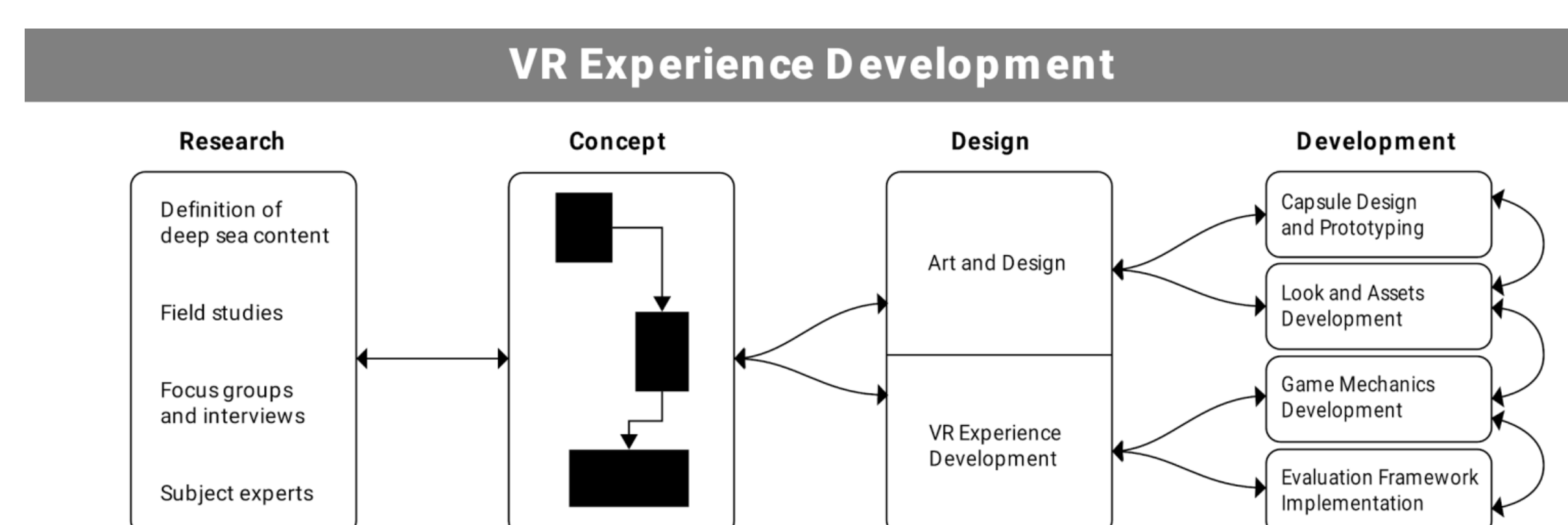
Background

Evaluation has moved up the agenda in Science Communication. However, some procedures, while available, may be too obtrusive to use recursively in science centers and/or conflict with visitors' agendas. Our idea is to develop a non-obtrusive, valid and replicable method to evaluate audience attitudes about science communication projects through an immersive virtual reality

environment (VRE) that can improve exhibitions while educating and empowering citizens. The VRE will have two modalities: for one person (individual condition) and for a group of individuals (collective condition), that will be supported by a transformational play framework and multilinear storytelling. In this communication, we will report on the development of the individual condition.

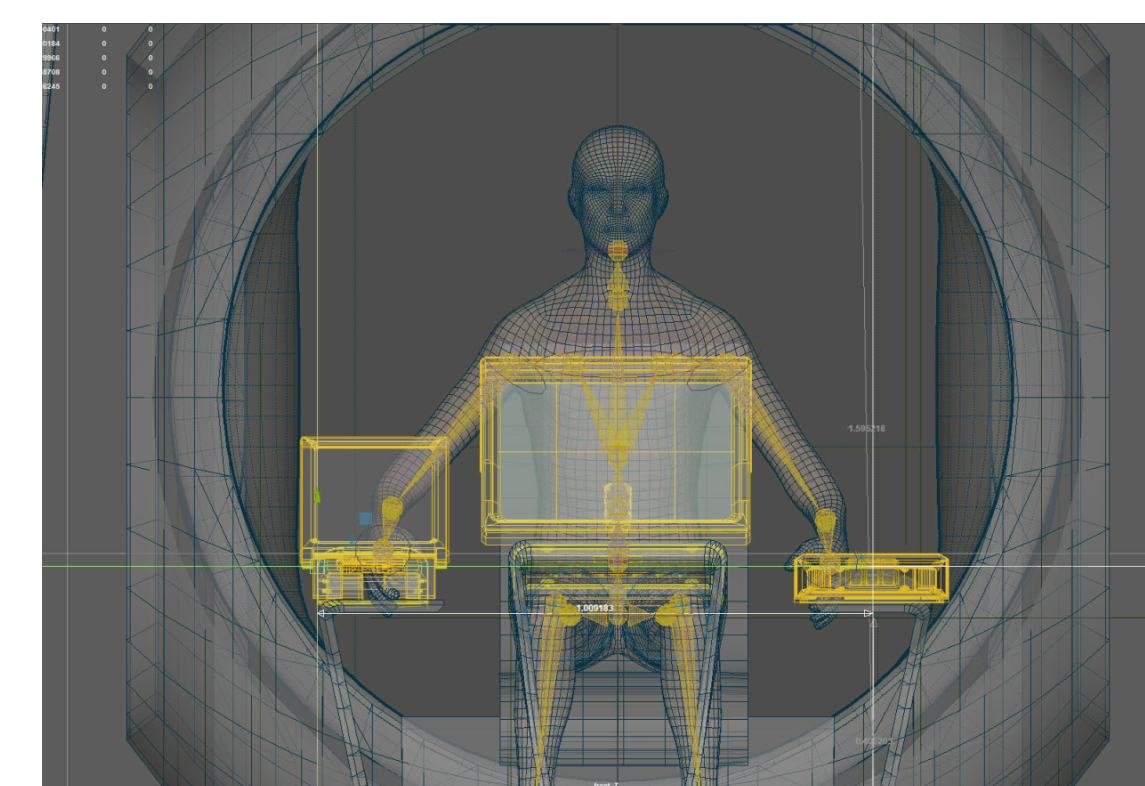
Methodology

Feedback on the deep-sea content was collected from experts. The game narrative was shaped by iterations within the multidisciplinary team. We conducted field studies and interviews at the science centers that will host the module, and focus groups with non experts. The usability of the prototype was tested. To develop a comparative framework, we will run experiments to validate the method. For testing its' concurrent validity, a questionnaire is being developed.



Results

The VRE consists of a capsule with head-mounted displays and headphones to provide an immersive experience that takes visitors into extreme deep-sea conditions, scaffolded according to three levels – awareness, understanding and engagement – regarding science. Given the scientific content provided, visitors will face and decide on several dilemmas, impacting the context of the game. In the end, visitors receive a *deep-sea-gram*, a summary of their path through the game.



Impact

This project not only contributes to greater audience awareness, understanding and engagement with deep-seas ecosystems but also provides conceptual innovations and empirical support to the integration of virtual reality as a means of communicating and evaluating science communication in non-formal spaces of education, such as science centers.

