CHAPTER

4

TRADITIONAL GAME FOR CULTURAL HERITAGE

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4.1   INTRODUCTION

In today's world, technology has been leveraged to recreate traditional games. Through the integration of digital platforms and software, classic games such as chess, checkers, and card games have been adapted for online play. These technological adaptations aim to retain the essence and rules of the original games while providing the convenience of remote play, allowing individuals to engage in these activities on a digital platform (Suaib et al., 2020). This transformation not only preserves the cultural and recreational value of these games but also expands their accessibility to a wider audience, transcending geographic boundaries when it offers online options, and promoting social interaction on the digital platform. The adoption of technology in replicating traditional games stands as an example of how innovation can harmonise with heritage, fostering a dynamic synergy between the past and the present.

An affordable device like Leap Motion is available on the market. It can recognise and capture intricate hand movements. This technology can be seamlessly integrated into the digital adaptation of the traditional *Congkak* game (Fazlan & Tan, 2023). Through its advanced sensors and algorithms, the Leap Motion device detects hand gestures and translates them into actionable data for a virtual *Congkak* experience. This fusion of

technology and tradition enhances the player's engagement, bringing a new dimension to the ancient game in a modern context.

This chapter discusses the integration of Leap Motion hand-tracking technology to enhance the gameplay of the digital *Congkak* adaptation. It outlines the meticulous implementation of the *Congkak* game's rules and logic, with a particular focus on the precise execution of marble distribution and movement predicated on the player's gestures. The development process encompasses the creation of a three-dimensional (3D) *Congkak* board and the establishment of a virtual gaming environment, artfully designed to encapsulate the charming ambience of a Malaysian traditional game. Within this virtual space, the *Congkak* board takes centre stage, intricately designed to simulate the traditional game. Furthermore, the chapter details the incorporation of intuitive hand gestures to seamlessly pick up and drop marbles into the designated pockets, thereby ensuring a truly immersive and interactive digital *Congkak* experience.

4.2   CULTURAL HERITAGE

Integrating extended reality (XR) technologies can significantly enhance traditional games like *Congkak*, offering players immersive experiences while preserving cultural heritage. Use XR technologies to digitally preserve cultural artefacts, documents, and traditions. This ensures that valuable cultural heritage is safeguarded for future generations, even in the face of physical deterioration or destruction. Using virtual reality (VR) and augmented reality (AR) to engage learners with cultural heritage content. This could include interactive storytelling, historical reenactments, and virtual field trips that bring history to life. Some researchers or developers create VR tours of cultural heritage sites, museums, and exhibitions. Users can explore these sites from anywhere in the world, providing access to individuals who may not have the opportunity to visit in person.

Extended reality (XR) can transport players into virtual environments where they can engage with traditional games like *Congkak*

in a fully immersive way. Players feel like they are physically present in the game world, enhancing their sense of immersion and enjoyment. XR can enhance the stunning graphics and effects that bring traditional game boards and pieces to life. Virtual environments can be richly detailed and visually captivating, enhancing the overall gaming experience. XR enables the integration of interactive elements into traditional games. For example, players can use hand gestures or motion controllers to interact with virtual game boards and manipulate game pieces, adding a new layer of engagement and realism. XR facilitates multiplayer experiences, allowing players to compete or collaborate with others in virtual environments. Players can connect with friends and family from around the world, fostering social interactions and community engagement.

To strengthen the traditional game of *Congkak* for cultural heritage, ensure the digital adaptation of *Congkak* accessible to a wide audience by releasing it on multiple platforms, including mobile devices, PCs, and gaming consoles (ChePa et al., 2019). It remains true to its traditional roots. This includes accurately representing the game's rules, mechanics, and cultural significance. By digitising traditional games and making them accessible through XR, cultural heritage can be preserved and passed down to future generations. XR experiences provide a modern platform for showcasing and celebrating traditional games, ensuring that they remain relevant in a rapidly changing world.

4.3   *CONGKAK* TRADITIONAL GAME

Congkak, a traditional game deeply rooted in the cultural heritage of Malaysia, holds a special place in the hearts of its people. This traditional pastime has been enjoyed by generations for centuries. The game is played on a carved wooden board with a series of small pits or hollows, where players strategically distribute and collect colourful seeds, marbles, or small stones (see Figure 4.1). Beyond its recreational value, *Congkak* also serves as a symbol of Malaysian tradition and offers a window into the country's rich history and cultural diversity.