

ABSTRACT

Games are activities that have the concept of fun and play. Games have plots, stories and characters. Every character in a game must have an element of Artificial Intelligence. An example of using Artificial Intelligence in a game is the NPC. The goal is for NPCs to have moves that the player does not set.

In a game, there are educative and non-educative ones. Educational games sometimes have an educative nature but are not fun for players, because usually educational games are in the form of quizzes. On the other hand, non-educative games have fun characteristics but have no educational value at all. To provide educational games that are fun and have educational value, it is necessary to make games that are fun but have educative rules. One way to give a fun nature to a game is to apply in-game algorithm elements, such as the A* Algorithm on the movement of an NPC (Non-Playable Characters) so that the NPC learns the path for its movement without help from the game developer.

By applying this method to the game that will be made, namely balloon shooter which contains prime number material, it is hoped that the game created can provide challenges that are certainly fun for players, and at the same time get educational value in the game. The application of the A* algorithm was considered successful, indicated by the movement of the balloon in accordance with its path and working 100% during the test. The game function testing based on alpha testing is declared to run according to its function and beta testing based on the questionnaire that has been distributed is declared valid and reliable.

Keywords: *NPC (Non-Playable Characters), Artificial Intelligence, Educational Games, A* Algorithm, Balloon Shooter.*