

Section 3

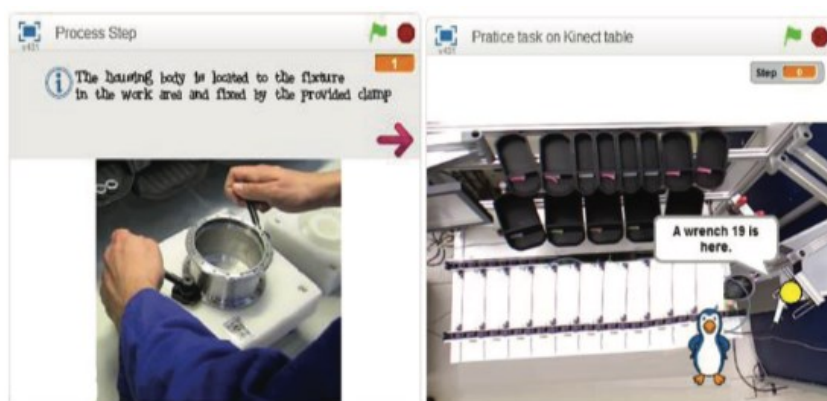
Chapter 12 - Assessment in Videogames and Educational Apps Based Learning in Upper Secondary and Post Secondary Non-Tertiary Education

Exemplary case 3

Title: **Assembly Game for engineering students**

Description:

The Assembly game is designed to instruct students how to use new assembling tools and construct mechanisms in the correct way. The game can be played individually on computers or portable devices. Game story is based on “Madagascar” movie where the main character has to repair the electric hub of the ship to be able to go to New York. The game consist of two main task that assembly workers have to master: first task is to recognise components of the electric hub and how they are assembled, the second task is to choose correct tools for assembling. Game is designed using Scratch 2.0. visual programming tool.



Integration into learning plan

The game is most suitable for the vocational school the beginners class in engineering to get students engaged with the discipline and encourage to learn more about assembling. The game

could be used as practice part after introducing a broader engineering topic. The Scratch technology that is used for the game designs enables teacher to edit the content of the game and adjust it to specific course needs and the resources used in the school. As the game includes practical assembling task with the camera view of a real assembling station, this part could be customised to reflect the working station available in the classroom, so the game would be a preparation step before transitioning to actual laboratory work.

Learning Assessment

The Assembly Game has integrated assessments and practical activities within the gameplay. Questions presented during the introductory part of the game evaluate learner's competencies so that the game could adapt to the individual player. Each quiz or assessment is designed as a minigame of puzzle, matching pictures etc. to keep students engaged. Each question is timed, as the timely decisions and actions are important in the assembling work. During the practical part of the game learner is asked to assemble the electric hub and is given feedback about the performance. The game could be used as a test to evaluate student knowledge and the practical understanding before starting the assembling practice with real tools and parts.

Game access for school

Game could be designed to reflect each school curricula and equipment with [Scratch 2.0](#).