LEARNING 3D COMPUTER ANIMATION VIA THE MODIFIED TEAM-BASED LEARNING (mTBL) APPROACH

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Background of TBL

"Team-Based Learning is an evidence-based collaborative learning teaching strategy designed around units of instruction, known as "modules," that are taught in a three-step cycle: preparation, in-class readiness assurance testing, and application-focused exercise. A class typically includes one module."

Team-Based Learning implementation is based on four underlying principles (Michaelsen & Richards, 2005):

- Groups should be properly formed, and teams are fixed for the whole course.
- Students are accountable for their preparation and for working in teams.
- Team assignments must promote both learning and team development.
- Students must receive frequent and immediate feedback.

Problem Statement

The current TBL approach is not suitable for art-based courses where semester-long projects are more practical-based, hands-on, and involved technical knowledge.

Background of the Course

GKN2113 Advanced Animation Studio I

This course introduces the complete process of 3D modelling and keyframe animation pipeline to the students. Throughout the course, students will idealise concepts through sketches and translate them into believable 3D visualisation.

Learning Outcome

By the end of this course, students will be able to:

- Differentiate proper modelling and texturing techniques to build polygonal and NURBS objects.
- Construct realistic visualisation of the 3D environment and interfaces within the virtual world.
- Demonstrate effective presentation and communication skills in developing 3D projects in a team.

Transferable Skills

Problem Solving, Written Skill, Verbal Communication, and Teamwork.

Learning Units

Production pipeline, Modelling, Texturing, Lighting, Rendering, and Animation.

Demographic

1. Second-Year Students (Design Technology-Animation).
2. Students formed their teams consisting of 4 members per team which lasted for the whole semester.

References

- Michaelsen, L., Richards, B. (2005). Drawing conclusions from the team-learning literature in health-sciences education: a commentary. Teaching and Learning in Medicine, 17(1), 85–88.
- Team-Based Learning Collaborative. (2016, November 3). Overview. Retrieved November 1, 2019, from http://www.teambasedlearning.org/definition/.

Activities & Assessment

PROJECT 1: The Artefacts (Team Effort)
PROJECT 2: The Game of Thrones (Class Effort)
FINAL PROJECT: 3D Character Model (Individual Effort)

Throughout the Process

1. Students and instructor, collaboratively, discussed and decided during the preproduction and production stages.
2. Student presented their progress and feedback were given immediately by instructor and peers.
3. Students were 'motivated' by their peers' progress.
4. Tips and tricks on solving technical issues were shared.

Outcome

Successfully produced an Animation Project presented in several exhibitions in Faculty of Applied and Creative Arts & National Art Gallery, Malaysia.

Insights from mTBL

1. Fostering independence, accountability, and reflectivity.
2. Students need to prepare before class which can be a challenge.
3. Short lectures are still essential to provide foundational knowledge and concepts.
4. The instructor needs to be ready for and open to various directions and students' choices.
5. Students are exposed to various levels of collaboration: individual, team, and class.
6. Based on students' feedback and instructor's experience, the teaching and learning sessions felt more interactive and active.

Significance of the mTBL Approach

The modified Team-based Learning (mTBL) can be adopted as an alternative assessment initiative to cover the MQF2.0 Learning Outcome Domains (LOD) such as Knowledge & Understanding, Cognitive, Practical Skills, Interpersonal Skills, Communication Skills, and Leadership, Autonomy, & Responsibility.

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