



Contribution ID: 413

Type: Talk

A model for cloud-based gamification to enhance collaborative learning in South African Higher Institutions: A Case of Gauteng Province

Tuesday, 2 December 2025 12:00 (20 minutes)

The use of gamification has gained popularity in higher education, which offers a valuable learning experience and improved skills acquisition by incorporating game-based mechanisms such as points, badges, leaderboards, and challenges. The use of gamification in education enhances student engagement and motivation by making learning more interactive and fun, improves learning outcomes, incentivises self-directed learning, and encourages collaboration and competition, thereby building connections within academic communities. Despite these benefits, the implementation of cloud-based gamification in South Africa faces several challenges, including the digital divide, accessibility, infrastructure, data security, and faculty readiness. Addressing these challenges is crucial for the successful implementation of gamification within the higher education environment. The challenges, which include inadequate infrastructure, unreliable internet services, and the affordability of technology, significantly hinder the use of cloud-based platforms, especially among disadvantaged students.

This study aims to develop a cloud-based gamification model to enhance collaborative learning in South African higher education institutions, specifically universities in Gauteng Province. The integration of the Gamification Acceptance Model, Gaming Learning Systems Framework, Self-Determination Theory, and Teaching Gamification Infrastructure Cloud-based Framework factors can be identified in the development of a cloud-based gamification model. By integrating game elements like points, badges, and leader boards, the model seeks to foster a competitive yet skills-based environment. The data will be collected from participants through quantitative surveys and qualitative interviews, and the Delphi method will be used to achieve expert consensus on the model's usability, relevance, and impact on student learning outcomes.

The expected contributions of the study are methodological, practical, and theoretical by developing a cloud-based gamification model that will be tailored to South African higher education institutions. This model seeks to improve educational practices, enhance student engagement, motivation, and learning outcomes, and advance educational technology and collaborative learning, providing valuable insights and tools for various educational contexts to support student success.

Keywords: cloud-based gamification, game-based mechanisms, higher education institutions

Presenting Author

Mrs. Irene Ann Abraham-Samgeorge

Email

AbrahamIA@tut.ac.za

Student or Postdoc?

PhD or DTech

Institute

Tshwane University of Technology

Registered for the conference?

No

CHPC User

No

CHPC Research Programme**Workshop Duration**

Primary author: Mrs ABRAHAM-SAMGEORGE, Irene (Tshwane University of Technology)

Co-authors: Dr ADEYELURE, Tope (Tshwane University of Technology); Dr SEGOOA, Mmatshuene (Tshwane University of Technology); Dr FOKO, Thato (Tshwane University of Technology)

Presenter: Mrs ABRAHAM-SAMGEORGE, Irene (Tshwane University of Technology)

Session Classification: HPC Technology

Track Classification: Cloud Computing