AMISH, M. 2022. Developing a technology to design a collaborative online project-based learning model. Presented at the 2022 RGU annual learning and teaching conference (RGU LTC 2022): enhancing for impact, 21 October 2022, Aberdeen, UK.

Developing a technology to design a collaborative online project-based learning model.

AMISH, M.

2022

The CC BY-NC-ND licence applies only to original materials created by the author(s). Third-party materials used for illustrative purposes are not covered by this licence and permission should be sought from the original copyright holder for any reuse of such materials.





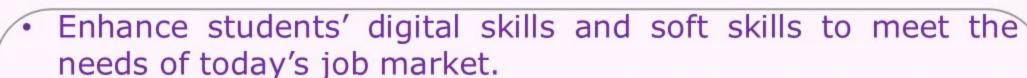
Developing a Technology to Design a Collaborative Online **Project-Based Learning Model**

1. Engineering Education Challenges

It has been widely reported that knowledge and skills gained in formal higher education institute courses are different from those required at work. Students lack soft skills, according to feedback from employers. Several workplace assessments have shown that hard skills alone are not enough to keep individuals employed, but soft skills are becoming more important because they complement hard skills. To meet this demand, it is essential to develop a collaborative online project-based learning (COPBL) approach in order to improve the quality of learning and teaching, to deliver attractive student programmes that:

- Deliver employment-driven programmes
- Address the limitations of individual efforts
- Take advantages of globalisation
- Introducing a more collaborative student-centred model
- Meet the growing expectation for seamless technological integration.

3. How will this help?



- Transferring traditional group project-based learning to efficient and effective virtual collaborative forms
- Promoting and facilitating interaction through technology and instructional activities
- Enhance collaborative teaching and learning support
- Shifting from individual efforts and autonomy to teamwork and community.
- Allows students to learn in their own time and studentcentered learning promotes deeper learning
- Integration of assessment for learning and feedback elements
- Enhancing the university's reputation as a place that produces "industry-ready" graduates.
- Increase in retention, academic and performance

2. Project Scope

To develop learning management product using the ADDIE model that will:

students conduct engineering projects independently help collaboratively in a safe and interactive manner.

4. Going Forward

Build technical and pedagogical methodologies

Collaborative online Project-Based Learning

Electrical Engineering

Mechanical Engineering

Oil and Gas Engineering

Soft Skills	Statement Group	Options
Information processing	COPBL helped me share information with colleagues. Group discussion is required	Strongly disagree
	before a decision is made.	Disagree
		Cannot decide
		Agree
		Strongly agree
Problem solving	COPBL helped me solve specific problems.	
	Participate in a collaborative problem- solving process. Enhance the ability to think	
	creatively.	
Communication	COPBL provided me with communication	
	tools with colleagues and educators.	
	Communication and interaction with others, individually and in groups, as well as	
	developing interpersonal skills.	
Collaboration	Participate in group meetings and build	
	teamwork skills. Group activities benefit	
	the group and oneself. When you learn in a	
	group, you learn more.	
Content creatin	The COPBL facilitated and helped me with	
Content Creatin	creating digital products. Enhance time	
	management skills. Learn to give and receive constructive feedback.	
	receive constructive reedback.	

Project-Based Activity	Digital Skill
Search the internet for specific	Information
information using online manuals, video	processing
tutorials, and technology.	
Use of simulator tools and application of	Problem
personal knowledge.	solving
Collaboration using different	Communication
communication tools.	
Creating operational measurement,	Content
control, and monitoring products.	creation
Remote access to online environments is	Security
enabled.	
Information is synthesized into a report.	Content
	creation

Sample of Projects Project Handbook Project Specification Project Activities Demo **Project Log book Feedback Staff Support**

COPBL Digital Skills

COPBL Soft Skills

Piloting

Evaluation

Reflection

Development

Implementation

Dr Mohamed Amish¹, Project Lead, m.amish@rgu.ac.uk School of Engineering

Analysis

Design

References Amish, M. 2022. Developing a technology to design a collaborative online project-based learning model, Journal of TechTrends. (under peer review)

Adams, S. (2014). The 10 skills employers most want in 2015 graduates. Forbes.

Arnold-Smeets, L. (2015). 5 hard and soft skills that will get you hired. PayScale.

Yu-Hui, C., & Yu-Chang, H. (2013). Peer feedback to facilitate project-based learning in an online environment. International Review of Research in Open and Distance Learning, 14(5), 259-276.