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

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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?

- Enhance students' digital skills and soft skills to meet the needs of today's job market.
- 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 student-centered 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:
- help students conduct engineering projects independently or 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 before a decision is made.	Strongly disagree 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 creating digital products. Enhance time management skills. Learn to give and receive constructive feedback.	

COPBL Soft Skills

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

COPBL Digital Skills

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

Analysis — Design — Development — Implementation — Piloting — Evaluation — Reflection

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