



Project-Based Learning

A REFERENCE BOOK FOR EDUCATORS

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“ Completing a significant project during college is correlated with greater career and life satisfaction **”**
- Gallup-Purdue Study





INNOVATIONS IN EDUCATION

Project-Based Learning

Simple step-by-step guide to set up and manage student
projects in your course curriculum.

Introduction:

What is Project-Based Learning?

If you are reading this guide, you are most likely an educator interested in, or considering, Project-Based Learning* (“PBL”) in your curriculum.

Educators in many leading universities use PBL to drive student engagement and learning outcomes. This trend is accelerating as new innovative tools make the process simple, fast and efficient for educators.

Whether you teach courses in STEM, humanities or business disciplines, this guide will help you set up PBL in your curriculum, step by step.

**Also referred to as active learning, experiential learning, discovery-based education, challenge-based learning, etc.*

“ I hear and I forget. I see and I remember. I do and I understand. ”

Confucius



The Impact:

Why are an increasing number of Educators adopting PBL?

If you want to increase student engagement, improve their learning outcomes, or inspire them into life-long learning, you need to blend project work into the curriculum.

Standardised testing shows that students engaged in PBL **outscore** their traditionally educated peers (Geier et al., 2008).

Project-based learning is linked to "significant" improvements in student test scores, attendance and classroom engagement

- Autodesk Foundation study

Project-based learning is linked to improved higher-order thinking and problem-solving skills and speaks to a broader range of learners.

- Intel study



There is a project for everyone.

You can use PBL in a range of courses – from STEM to humanities, from law to economics. As a pedagogical approach, it works particularly well for courses where the core concepts can be used to solve a problem in a flexible process, with minimal resources and without material risks.

You are in good company.

Educators in many leading institutions including have endorsed the power and impact of project-based learning in their curricula. Their practice and research provide valuable insights and tips to insert projects in coursework.

“PBL is a learning process and not a test for what has been learnt”

Select universities using Project-Based Learning methodologies



Duke
UNIVERSITY



Dartmouth





Top tips: *How to set up PBL in your course?*

1. Set the Context

To get started, clarify:

- **Do you offer the same project to all students or different projects to different student teams?** The first approach allows comparability, consistency and direct cross-team learnings while the second approach exposes students to a wider range of application areas and material increases educator workload.
- **Should projects be mandatory for all students?** Offering students the option to opt out increases logistical complexity and workload for educators.
- **Should you engage employers to collaborate on these projects?** Engaging employers provides additional perspectives for students and makes the process more intense.

2. Define projects

Set up a project with a clear underlying question or problem that:

- Is related to the course topic;
- Can be solved by the students with the level of skills, knowledge time and resources available.

If students work on a real-world problem in collaboration with an employer, it is important to ensure that:

- the projects limit the use of sensitive data and/ or the students are trained to handle such data;
- the employer is clear about and commits to their expected roles and timelines;
- the ownership and rights on project outputs/ intellectual property assets are clearly agreed upfront.

Educators can access a long list of example projects free of charge by signing up [here](#).

3. Assign teams

PBL typically involves project teams with 4-7 students each. Accordingly, you may either assign your students to multiple teams or allow them to form teams. In either case, it is important to ensure that the skill levels across the different teams are balanced.

Educators often invite mentors to join and steer the project teams. Mentors tend to act as an independent sounding boards for the teams and often help to improve project and learning outcomes.

4. Organise resources

Provide students access to tools and resources that they may need to work on the projects (e.g. online databases, meeting spaces, etc.). Most educators use standard, functional resources that are easily accessible to students, e.g. online templates, etc.

Use software tools to manage the process (including potential employer engagement) effectively and efficiently.

5. On-board students

Brief students before they start working on the projects to clarify:

- The project scope and deliverables;
- The project's role in the curriculum and evaluation scheme;
- Project team composition;
- Key dates and deadlines, including review schedules (*most projects last for one to two academic terms*);
- Engagement rules and guidelines;
- List of resources (e.g. databases, lab facilities, etc);
- Team contact lists.

It is a good practice to email or distribute these details as handouts to the students. You may also invite employers, if any, involved in these project to join the on-boarding session.

6. Track and steer teams

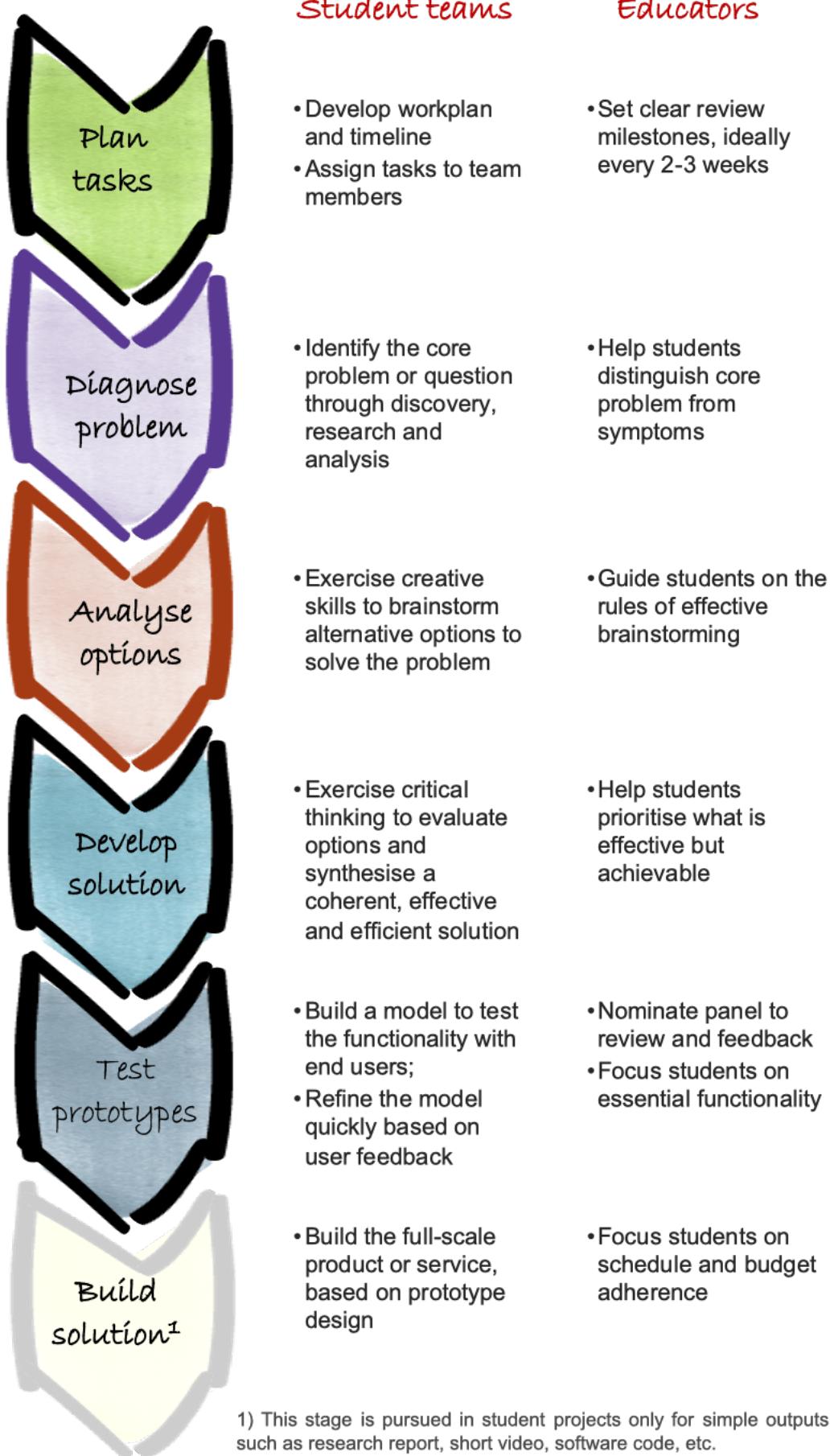
Let the teams go through the project execution steps (see example below) and intervene only as needed. Allow employers and mentors to guide the teams, if feasible. Catalogue evidences to inform formative assessment.

7. Evaluate

Assess team and student performances based on formative and summative data, based on the output as well as process parameters such as engagement levels, teamwork, etc. Invite inputs from mentors and/ or employers involved in the project. Offer all students clear feedback on improvement opportunities in line with PBL ethos which emphasises learning through the process rather than focusing just on the output.



Project Execution Steps: Roles of Student Teams and Educators



1) This stage is pursued in student projects only for simple outputs such as research report, short video, software code, etc.

To sum up...

You can set up your project-based learning curriculum by:

1. Setting up simple projects that reinforce specific knowledge topics and soft skills and are doable with university resources and within course timeline;
2. Clarifying project scope, deliverables, timelines and evaluation scheme upfront;
3. Evolving your role to be a *facilitator* and guiding your students to take greater ownership of their learning journeys;
4. Inviting employers, peers or mentors to join the projects, with clear roles;
5. Periodically reviewing progress with the students and offering them clear feedback;
6. Using innovative technology and tools to maximise your effectiveness and efficiency.

Get started with a FREE online tool to set up and manage your Project-Based Learning program. You get:

- A large and growing bank of project topics and ideas
- Ease of setting up projects and forming student teams in minutes
- Opportunity to connect with a large pool of potential employer partners
- Convenience of virtually guiding your students and tracking their work
- And so much more.....

CONTACT US TODAY

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absolutely free***

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