

A Real-World Term Project in Engineering Economics facilitated through Riipen

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Introduction

Riipen is an online experiential learning platform that connects academia with industry. Curriculum can be matched with a real-world project over the course of a term. For 2020-2021, Thompson Rivers University was fully funded through the RBC Future Launch program to utilize Riipen.

Engineering Economics (ENGR 2400) is a second-year course in TRU's Bachelor of Software Engineering Program where students learn to evaluate projects from a financial perspective. The course has five learning outcomes related to economics and engineering projects.

Results

- One of the five learning outcomes was successfully met with a portion of the project work to develop a Business Plan.
- Other course learning outcomes could not be met.
- A poll completed by students at the end of the term suggested that the project helped them to understand uncertainty and risk associated with starting a new business and the importance of communicating with the client, but it did not significantly enhance their understanding of application of economics in the real world.
- Client feedback:
 - Group 1: A+, Group 2: A, Group 3: C+
 - The client felt that the output of Group 1 & 2 would be useful for the game creation, but that Group 3 did not capture what the client was looking for likely because they did not attend enough of the weekly meetings.

Conclusion

- The project results were useful to the client.
- The client provided a weekly time commitment to the students which facilitated real-world interactions with the CEO.
- The project only allowed for completion of one learning outcome.
- It can be difficult to match a real-world project with course content.
- Working with Riipen can be a powerful tool for connecting courses with real world projects, but more time is needed to find a project that is mutually beneficial.

Project Description

For the 2021 winter academic term, Riipen was used to connect with an industry partner for the term project in ENGR 2400 in attempt to tie learning outcomes with an engaging, real-world learning experience.

The industry partner for this project was "Build a Biz Kids".

- Build a Biz Kids offers supplementary programming to students across the Lower Mainland in BC,
- They were looking for a team of university students savvy with basic economic variables and developing mathematical equations on order to help create a resource management economics simulation game, similar to Sims, RollerCoaster Tycoon and Restaurant City.
- The game will ultimately be for elementary school students ages 7-13, with a theme of running one of the following businesses:
 - Hotel
 - Painting company
 - Restaurant
- The mathematical variables and equations created by students were provided to game developers (coders) to input into the game.

Project Methodology

- The "Business Plan"- a five-year roadmap for the business- was due halfway through the term which coerced students to begin research on their business type and collect financial information.
- Starting halfway through the term, weekly meetings were held with the CEO of Build a Biz Kids to track team progress and gather feedback
- 20% of the term project grade was based on the how well the client felt that the term projects met the needs of Build a Biz Kids.