# 2021 Final Year Project Definition Form

**Project Title:**

A System Dynamics approach to learner number forecasting

**Company details:**

Curro Holdings Ltd.
38 Oxford St, Durbanville, Cape Town, 7550
www.curro.co.za

**Company background:**

Curro's vision is to make independent school education accessible to more learners throughout southern Africa. Curro was established in 1998 and is the leading for-profit independent school provider in southern Africa. It develops, acquires and manages independent schools for learners from three months to Grade 12.

We believe the purpose of education is to empower every person with the opportunity to achieve their potential as individuals and members of society. We further believe that education is the cornerstone in the development of quality leaders and responsible citizens who will positively impact the economy, environment, and society.

A key performance indicator (KPI) refers to a quantifiable measurement or metric that is used to gauge a company's overall long-term performance when measured against a set target or goal. KPIs are often financial (including profit margins, liquidity ratios or year-on-year (YOY) revenue growth) or anecdotal (including customer sentiment scores, customer retention rate or monthly customer growth) and a company's selection of relevant metrics are largely dependent on the industry of the company. Furthermore, KPIs are rarely mutually exclusive and the outcome of various metrics (and in varying degrees) often influences the performance of another metric.

Curro Holdings Ltd (Curro) was established in 1998 and is currently the leading for-profit independent school provider in southern Africa. Curro's development since it first opened its doors has been significant, with the total number of schools under its management growing from 3 in 1998 to 76 in 2020. The notion of such an independent school, however, presents its own challenges, some of which are the acquisition, maintenance and utilisation of resources to continue pursuing excellence without pricing itself out of the market. Furthermore, this causes a considerable hurdle if the pursuit of creating value for initial investors.

In the context of Curro, one of the main KPIs that are considered on a regular basis is the number of learners currently enrolled in our schools. As a for-profit education group, school fees generated from enrolled learners is the main source of cash generated on a monthly basis and is therefore imperative to the success of the business's operations. Various factors may influence the learner number and consists of, among others, schools opening in new areas, the current economic climate or the delayed impact of COVID-19 on household incomes. How and to what degree these factors influence learner numbers, however, remains a challenge on its own.

This problem may be addressed by attempting to use system dynamics techniques to determine the various factors that influence learner numbers of a school as well as determining the casual relationship between these factors. This model may thus be implemented so to run various scenarios using these identified factors and determining the corresponding outcomes.

This problem holds significant value for Curro Holdings Ltd in terms of learner number projection and improved understanding of factors that influence the learner numbers. The student will be allowed the opportunity to work closely with a team of Industrial Engineers in practice, while gaining exposure to the innovative company culture at Curro. Furthermore, the student will learn invaluable skills in the realm of simulation and system dynamics, which will prove extremely helpful on their path towards a successful career.

| **Industry mentorship:**  Nicole Wepener | | | |
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| **Industry mentor contact details:** | *Ms Nicole Wepener* | [*Nicole.d6@curro.co.za*](mailto:Nicole.d6@curro.co.za) | *087 087 4722* |

**Project topic application process:**

*Please email all applications for the topic to the relevant Curro mentor for the project.*

Key aim/ objectives, for the project:

1. Determine the various causal factors that could potentially influence learner movement to and from a school.
2. Define these causal relationships using Causal Loop Diagrams.
3. Building an initial System Dynamics Model to illustrate the causal relationships, to potentially run different scenarios and forecast learner numbers for a school.

Specific Industrial Engineering skills (tools/processes/procedures) likely to be used in this project:

1. Systems thinking principles
2. Modelling
3. Simulation
4. Problem definition
5. Complex problem solving