

# **Analysis of Effectiveness Factors for Engineering Graduates in Iran Using System Dynamics Approach: Case of Industrial Engineering**

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## **Abstract**

Higher education systems are considered amongst the most important service providing systems in every country. The existence of a number of factors in Iranian higher education system has led to low effectiveness of university graduates in case of engineering sciences. The presence of feedback loops in the system makes the deviation from the desired situation be deteriorated. Correcting key mechanisms in the system's interactions can continuously improve the systems output. Two important elements of the system are university graduates and faculty members. Assuming the majority of faculty members are themselves graduated from home universities, the important of this element is increased. Re-engineering the university programs in a way that graduates can fulfill the employers' requirements is essential in solving the problem. In this paper, applying System Dynamics technique, the reinforcing and balancing feedback loops which are critical to the behavior of the system are identified. A generalized model for the improvement of the system's performance in case of producing effective engineers is suggested. The effects of the alternative policies on the system's behavior are analyzed.

## **Keywords**

Higher education, Engineering Graduates' effectiveness, Industrial Engineering, System dynamics