

Summary of Master's Dissertation

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Title: Design of an Eco Factory Game			
<p>Abstract:</p> <p>The ongoing discussion of being ecofriendly has been a hot topic since a few decades ago. Industrial factories are the current major causes of our global warming issue, producing eighty five percent of all carbon dioxide in the world. Developing countries are a long distance behind world standard in terms of eco. The main cause of this difference is thinking process and education provided to people living in those countries. Numerous studies have shown that due to the rapid economic growth of the developing countries, government and companies in those countries opt for strategies that will bring as much profit as possible; and because ecofriendly procedures require large economic investments during the initial stages, they are ignored.</p> <p>In order to solve that problem, we identified college students' education as the more effective method to improve the situation. We chose to design a business games to be used as an education tool to increase students' awareness of the global warming issues. Business games are proven as an excellent way to present key concepts in a simulated environment with group interactions. They are especially useful in situations where "learn by doing" behavior exists. They are also much more cost effective when compared to experiments and fieldworks.</p> <p>The major mechanism in the competitive game we designed was decision making. The students were required to maximize profit while dealing with penalty constraints accompanied by new game rules as the game progressed. The three major environmental measurements we chose to present in the game were waste, emission, and energy. Each eco investment the students chose to implement came with monetary and environmental gains and loses. Students had to form strategies by themselves in order increase their customer base by lowering environmental burden, and make profit so they do not go bankrupt.</p> <p>The resulted showed that students were able understand the basic concept of ecofriendly measurements, which were tradeoffs. They understood that initial investment would be replaced by increased company reputation and customer base, and that resulted in increased demand and profit. As for the eco methods themselves, students were able to understand the prioritization of reuse, reduce, and recycle applications. Finally, with the introduction of government incentive, consumers are more willing to perform eco activities, which in turn will result in the factories to pursue eco procedures as well. This cycle had the potential to effectively change the eco system in developing countries from the inside out.</p>			
<p>Keywords:</p> <p>Eco awareness, Business game, Eco factory, Tradeoff decisions, Government incentive</p>			