# THE ECONOMICS GAME: HELPING STUDENTS PREPARE FOR THE EDGE

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**Abstract**

This paper discusses a lecture on economic principles for sophomore-level female Japanese exchange students taught during the Summer 2019 semester at a small, U.S.-based private international institution of higher education. By deviating from the more traditional, lecture-based approach through the creation and implementation of the Economics Game, students were able to refine their conceptual understanding of basic economic concepts while learning new applications of economics through different cultural and societal lenses. Outcomes suggest that the Economics Game aided in increasing and deepening student understanding of economic principles, that students were able to gain transferable experience through coursework emphasizing decision-making, experiential learning, and teamwork, and that the game can benefit greatly by integrating more explanation, consideration, and management of student expectations in the future.

**Introduction**

This paper discusses a lecture on economic principles taught during the Summer 2019 semester at a small, private international institution of higher education in the Northeastern United States. The participants (e.g., learners) included 43 sophomore-level female Japanese exchange students who had taken an introduction to economics course at their home institutions in Japan prior to coming to the United States to participate in the global business program at this institution. The global business program aims to expose students to the United States culture through academic and social activities. Students reported being used to a lecture style that enabled them to learn passively, taking notes and reading from the course textbook to memorize terms before exams. Due to this, along with students having taken economics previously, the decision was made to take a different approach to this course on economic principles; one that would allow students the opportunity to refine their conceptual understanding of basic economic concepts, and to also learn new ways of understanding economics through different cultural and societal lenses (Deal & Peterson, 1999). Additionally, this learning practice operated under the following assumptions embedded in the course: 1) The learner has an interest in learning about economic principles; 2) The learner will find ways to apply course material to their personal experience; and 3) The selected material for the course is suitable for learning about economic principles.

The lecture of economic principles course was designed to give an overview of basic economic concepts while also allowing students the opportunity to understand economics through different cultural and societal lenses. In addition, the course centered on the application of economic concepts toward other areas of business including social sciences. The course included of many in-class presentations giving students the opportunity to practice public English-speaking skills (Tran, 2015; Villegas & Freedson-Gonzalez, 2008). This practice made use of progressive principles of learning for course material delivery (Wortham, 2003). Although it can be argued that the educator should be at the center of the classroom environment, stepping back can allow for a more shared and distributive form of leadership and learning in a positive and challenging environment (Bass, 1999; Yukl, 1998; Pearce, Perry, & Sims, 2001; Payne, 2019). The course design aimed to appeal to all four communication styles in conjunction with practicing English communication, with specific emphasis on the interactions of the different styles within each team to achieve objectives (Murphy, 2015).

Artificial intelligence has humans beat regarding calculations and other basic tasks required to complete work assignments, and that is not likely to change for the foreseeable future (Martınez-Miranda & Aldea, 2005). It is as important as ever for leadership educators to develop decision-makers who can solve problems effectively, have a tolerance for ambiguity, and can think on the edges of leadership to solve the issues of tomorrow. In making the decision to take an alternative approach to designing this learning practice, it was important to not rely exclusively

on lectures or textbook-guided learning for course delivery. For decades, educators and educational researchers have questioned the effectiveness of teaching methods that are entirely lecture-based (Barr & Tagg, 1995). Despite innovations in technology enabling alternative techniques for instruction, lectures prevail as the primary method for teaching adult learners (Bligh, 2000; Whalley, 2016). Educators and researchers have come to recognize the intricacies of educating and learning for understanding as opposed to just knowledge retention (Ritchhart, Church, & Morrison, 2011). If the goal of teaching is to engender understanding, educators must move from rote memorization of knowledge and facts, known as "surface learning," toward "deep learning," where understanding is developed through active and constructive processes (Ritchhart et al., 2011). Roehl, Reddy, and Shannon (2013) purport that to achieve this objective, educators must shift from a teaching-centered paradigm toward a learner-centered paradigm. This course focused on more deep learning elements with emphasis on active learning,

Palus & Drath (1995) discuss the difference between training programs, which focus on imparting new skills, and development programs, which focus on questioning and stretching existing ways of making sense of oneself and one's work. It is possible to make the connection between participation in a leadership development program and participation in a course where students are responsible for developing ethical economic solutions to the issues presented to the companies and countries which they have created. The introduction of any new strategy requires a shift in the minds of both educators and students. Educators must be willing to experiment with alternative strategies in the classroom (Roehl, Reddy, & Shannon, 2013). Effective application of competencies such as critical thinking and collaboration is more likely if the skills were developed during an individual's academic career (Blair, 2012). A study Wilson and Korn (2007) found that student attention does not necessarily decline during lectures, but that educators need to consider individual differences in attention when designing their courses. The following sections will provide an overview of the framework and design of the course, in addition to discussion of the outcomes and implications yielded from the course.

**Literature Review**

This paper relied upon two main areas of literature to provide the framework for the course: Learning and leadership principles, and economic principles. Each of these are discussed below.

**Learning and Leadership Principles**

In order to understand the elements of the design of any learning environment, it is important to consider the way knowledge is acquired (i.e., the learning happens). Sfard (1998) discusses the idea of knowledge being acquired through activity. With a focus on the activity, the learner can construct a mental model based upon personal experience. Brown, Collins, and Duguid (1989) make the argument that conceptual knowledge is contextually tied to the learner's experience within the learning environment. The lecture course on economic principles attempted to digress from real-world constraints in order to emphasize certain economic concepts such as decision-making, risk-taking, and perception of the human element involved in economic decisions.

According to Piaget (1977), the growth of cognitive structures is determined by activity, which serves as the functioning of those structures. During experiential learning, educators engage learners in direct experience and direct their focus on learning reflection to increase their knowledge, skills, and values (Dewey, 1938). According to Kolb and Kolb (2005), the learning process is a continuous cycle of experiencing and exploring. This practice relied heavily upon experiential learning-based activities to provide to the learner opportunities for practical application. Conole, Dyke, Oliver, & Seale (2004) discuss how the contents of a course provide a structured guiding framework, or toolkit, for the learner, and that this highly structured framework is available to the learner with the potential to transform his/her existing mental models.

Within a cognitivist learning environment, the overarching aim is for the teacher to provide the opportunity for the learner to integrate new experience with his/her own developing mental models (Wortham, 2003). This learning practice relied upon the interactions between the learner and the educator. The role of the educator was to provide short lecture sessions on course concepts while allowing time for teams to complete tasks during class time. The role of the learner was to form an understanding of economic principles through practical application and experiential learning. The primary objective for the elements of design in this learning practice was to assist the learner in constructing shared mental models for individual and group-based economic decision-making. Kozulin and Presseisen (1995) make a case for the vital importance of independent thinking skills, which can be developed by providing access to the appropriate tools (i.e., human, psychological, and/or material resources) made available by

the educator to support the learner in accomplishing tasks. The educator of this learning practice on economic principles introduced curated versions of each topic supported by multimedia with the ability to make real-time changes to available content.

**Economic Principles**

Mankiw (2014) defines economics as the study of how a society manages its scarce resources. This definition of economics, however, is often lost in higher education economics courses since some focus on activities relating to surface learning with almost no emphasis on deep learning (Ritchhart et al., 2011). As such, the decision was made to take a different, less lecture and more hands-on learning approach. To accomplish this, the course relied upon what Mankiw (2014) refers to as the ten principles of economics as the scaffolding for the course content. These ten principles are broken down into three main areas: How people make decisions; How people interact; and How the economy works. How people make decisions emphasizes things like trade-offs, the flatness of rational thinking, and responding to incentives. How people interact deals with aspects of trade, markets, and interventions. How the economy as a whole works centers on topics like inflation and unemployment, production, and other more macroeconomic concepts. With these main ideas in mind, the lecture of economic principles was designed to challenge learner decision-making at the individual, group, and organizational (i.e., class) levels by focusing on student-populated information that would serve as the basis for classroom examples and discussion. Students worked in teams and held each other accountable for completing tasks to avoid awkward feelings in real-time during class when it was time to discuss or present their information. This approach also helped to encourage marketplace interaction within the class and among different teams to accomplish objectives more efficiently. Since the Economics game transitioned from microeconomic to macroeconomic concepts, there was plenty of room to discuss how the economy functions in a holistic manner. Following these principles can help to give students a chance to learn new aspects of a previously studied topic from a different perspective, while also allowing the room for other business-related concepts to connect to the economic principles, such as perception or supply chain management. The Guest Speaker shared experience of being a transformational learning leader for a large company, and the importance of building strong scholar-practitioner skills for success in any area of business (Tenkasi, Hay, & Sanders, 2019). Please see Table 1 for the listing of course topics.

**Table 1. The Economics Game: Course Topics**

1. Perception
2. Decision-Making
3. Values
4. Ten Principles of Economics
5. Guest Speaker (Transformational Learning Leader)
6. Micro/Macro/Behavioral Economics
7. Supply and Demand
8. International Trade
9. Production Costs
10. Competitive Markets
11. Supply Chain Management
12. Monopoly

The Economics Game consisted of nine Rounds, with specific course topics being highlighted in the task and activity of a given Round. Digressions from the real world were made in order to emphasize certain economic elements such as worker wages, average worker wages per company (and later, country), and other human-related elements. Additionally, teams assumed a monopoly over a specific raw material later in the game and were encouraged to work out agreements with each regarding trade needs (particularly for the raw materials required to make products). Lastly, a standardized currency of K was selected to move away from the perceptions of constraints in the real world. Please see Table 2 for an overview of the Rounds and subsequent course topics and tasks of the Economics Game.

**Table 2. The Economics Game: Rounds and Course Topics**

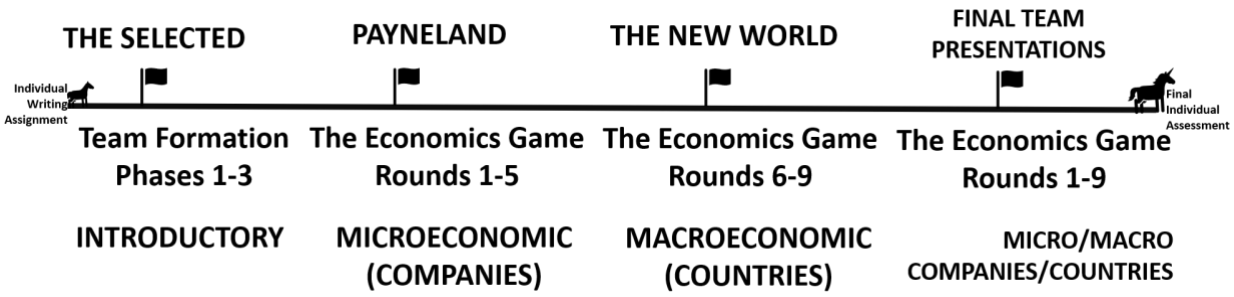
| Round | Title | Course Topics/Tasks |
|---|---|---|
| 1 | Creating a Company for the Market Economy | Perception, decision-making, values, ten principles of economics. |
| 2 | Setting the Stage for the Market Economy | Supply/demand; competitive markets; master budget averages. |
| 3 | Strategy for Success in the Market Economy | Cost (wages); profit; company values; ten principles of economics; inflation; unemployment. |
| 4 | Determining Company Production Costs | Manufacturing/Labor/Production Costs (long/short run). |
| 5 | The Market Economy Business Tax | Allocate tax from budget; add a service to company; retail price. |
| 6 | Exploring the New World Economy | Transition from micro to macro; Update budget information to reflect adjustments from company to country. |
| 7 | Establishment of New World Trade Agreements | International trade. |
| 8 | Supply Chain Management in the New World | Supply chain management; production costs. |
| 9 | Final Team Presentations | Teams present with time limit on Rounds 1-8 |

Learners contributed to the course content by populating various tables with numbers specific to their company, and later, their country. A high degree of group decision-making was needed to complete each assignment, as learners were charged with not only coming up with the numbers, but also justifying their decisions by explaining the larger implications of what the numbers say. This learning practice placed the learner within the context of an aspiring economist. Brown et al. (1989) make the argument that knowledge is situated within the activity and context in which it was created and is being used. This learning practice was designed to afford the learner an opportunity to apply existing knowledge of economic principles toward a series of group-based projects.

**Conceptual Framework**

A task represents that in which a learner engages within a learning practice, and the task should function as a method of representation and practice for the transfer of knowledge (Anderson, Reder, & Simon, 1996). This course on economic principles involved a series of tasks, or assignments, requiring learners to work in permanent groups during the semester. Learners were assessed by individual- and group-centered means throughout the course of the semester. Individual assignments consisted of a writing assignment taken on the first day of class which allowed for some tracking of English-language learner- (ELL) related items such as written communication (Tran, 2015). Next, learners formed groups of seven or eight and worked to complete the phases of an introductory activity entitled 'The Selected', which focused on perceptions, decision-making, and personal values involved when dealing with people, things, and structure in the aftermath of a worldwide catastrophic event. The activity led right into the start of the Economics Game. The first five rounds were microeconomic in nature, where teams were responsible for creating a company, deciding upon a product (a later, a service), and developing strategies to compete in a marketplace economy. Rounds six through nine emphasized macroeconomic principles, and teams had to transition their companies to countries, with adjustments being made to budgetary allocation and more to account for the increase in employees (i.e., country residents). Instructions were given as to what tasks needed to be completed, but teams were responsible for doing calculations and justifying decisions made. The final assignment tasked teams with presenting on information of their choosing from Rounds 1-9 of the Economics Game. A time limit of 15 minutes was given as a constraint. Finally, learners completed a final individual assignment where they had to use the information and examples created by the teams in the course to explain selected course topics of their choosing. Please see Figure 1 for the timeline of assignments from the Economics game. Please see *Appendix A* for samples of Rounds from the Economics Game.

**Figure 1. The Economics Game: Timeline of Assignments**




**Methods/Outcomes**

As a result of utilizing the Economics Game as the central focus of the lecture course on economic principles, students were able to experience a more hands-on approach to economics in a way that did not replicate what they previously learned at their home institutions in Japan. The course allowed room for engaging activities such as song creation and performance and was able to give students a significant amount of time to practice English speaking skills through class presentations requiring all team members to participate and explaining the team rationale for all decisions made in the Rounds. Students were asked to complete a seven-question evaluation separate from the normal course evaluation, with questions focusing on the Economics Game. Please see *Appendix B* for the questions from the end-of-semester student evaluations.

Student names were removed, and instead each student was assigned a number from 1 to 43. A content analysis of evaluative student feedback was conducted (Neuendorf, 2016) in addition to anecdotal information collected by the educator being compiled. From the results, five themes emerged from the data, and these are discussed below.

**Increase in Student Understanding of Economic Principles**

A majority of students in the course (38 students, 88% of total students) indicated that they were able to increase their understanding of economic principles through participating in the Economics Game. As previously mentioned, students completed an introductory economics course prior to taking the lecture on economic principles. However, student comments were representative of the Economics Game allowing them to understand course topics from a more conceptual and experiential perspective: "I studied economics, but I didn't know how to use it. Therefore, through this game, I could understand how to think economically. In addition, I understood that was why there were these economic principles by making decisions with my team about company and country" (Student 3, personal communication, August 4, 2019). Comments in this area also related specifically to the Economics Game allowing students to more deeply understand Mankiw's (2014) ten principles of economics: "Because I could understand about the trade. Especially, I could learn about the fifth principle 'the trade can make everyone better-off' through this game" (Student 8, personal communication, August 4, 2019); "I couldn't understand about ten principles of economic at first but finally, I could understand them through this game" (Student 18, personal communication, August 4, 2019). Student comments suggest that the Economics Game aided in increasing student understanding of economic principles.

**Effective Team Performance**

Results show that 33 students (77% of total students in course) felt that their respective teams worked well together. Student comments overall connoted the interdependence of tasks within teams and were reflective of needing to convene on a regular basis to complete tasks for the course: "We often gathered to do our assignment. Then, all of members participated the preparation of final presentation" (Student 16, personal communication, August 4, 2019). Another comment reflects a similar sentiment for working in teams: "We always worked together. If I did alone it, I wouldn't do it. I'm very appreciate to my team. I really enjoyed this game because I did it with my team" (Student 5, personal communication, August 4, 2019). From the 10 students (23% of total students in course) who felt that their teams did not work well together, comments noted particular challenges with the interdependence among teams regarding tasks such as establishing trade agreements: "The international trade we need to wait until other team finish their parts. It makes us need to wait and do it until late midnight" (Student 26, personal communication, August 4, 2019). This final comment is reflective of students recognizing the challenges of working

interdependently with other teams in the course while also noting the positives involved: "It was so difficult for us because we had to talk to other teams. However, we could talk to them how to build our trade agreement. It was so fun" (Student 1, personal communication, August 4, 2019). Overall, students noted gains in transferrable experience through working in teams during the lecture of economic principles.

**Likes and Learnings**

In addition to the increase in understanding of economic principles and opportunity to gain experience as a team member, the confluence of student comments surrounding specific aspects of the Economics Game reflect enjoyment and learning. Students noted that Round 9 (Final Team Presentation) was particularly enjoyable, giving students the opportunity to tie all the pieces together under a shared mental model to which to apply their understanding of economic principles. Round 6 (Exploring the New World Economy) was described by students as allowing them to learn more about how trade works and the impact of budgetary decisions. In general, students appreciated the experience in making decisions of critical significance to their negotiate with someone, how much one decision making will affect future decision making" (Student 41, personal communication, August 4, 2019). Comments suggest that students see the utility of applying what was learned via the Economics Game to future career aspirations: "It was a very common principles, so I understood how to decide during the economics game. I may have opportunities to plan the new business, so I will do using the knowledge from the economics game" (Student 1, personal communication, August 4, 2019). Based on this information, student comments indicate an appreciation for the Economics Game and that they were able to deepen their understanding of economic principles as a result of taking the course and participating in the game.

**Dislikes and Suggestions for Improvement**

Although there were many positives associated with student experiences regarding the Economics Game, there were some student comments relating to what can be improved upon in the future. Overall, the Economics Game can be improved by syncing with ELL students in a way that maximizes learning (Villegas & Freedson-Gonzalez, 2008). Student comments were representative of the need for more details to be explained for each Round: "When I did some rounds, I confused how far should we think. Therefore, if we are given information in detail more, we could work well" (Student 22, personal communication, August 4, 2019). Other student comments noted how students were accustomed to following the textbook for courses like this, and how they would have preferred this approach over a more time-consuming alternative such as the Economics Game: "I wanted to learn following textbook" (Student 9, personal communication, August 4, 2019). There were eight students (18% of total students in course) who commented on the lack of explanation regarding the connection of 'The Selected' activity to the Economics Game, and how decision-making should be emphasized more to help make this connection to economic principles in a more direct way. Lastly, some student feedback reflected a difficulty in completing certain tasks due to perceptions of their own abilities: "Calculation was hard for me to do Round 2 [Setting the Stage for the Market Economy] because I'm not good at math" (Student 42, personal communication, August 4, 2019). Overall, the student comments note several opportunities to make improvements to the Economics Game, and to the lecture on economic principles in general, for the future.

**Significance of Keeping Worker Wages Low**

The emphasis on the human aspect of economics forced students to consider how keeping wages low would impact the actual people in their respective companies and countries. As an illustration, the Average Annual Worker Wage of K 1.2 was selected by the educator during Round 1 to influence decision-making and consideration among teams in the course. By Round 5c, the Average Annual Worker Wage for all companies (teams) dropped to K 1.09, but then increased back to K 1.2 by Round 6. This slight fluctuation allowed for plenty of classroom discussion in an open format among the educator and the students, with each individual being able to play the role of 'economist' and present theories as to the causes of the fluctuation and how it may have impacted households (Mankiw, 2014). The following student comment demonstrates an awareness of the human aspect as well as the economic impact of raising Worker Wages: "If we raise the money of worker wage, we will change the price of product. If we do that, other team's economic will change, and change the average of worker wage, so I think it best choice to keep the total cost of wages same" (Student 11, personal communication, August 4, 2019). The next two comments represent the perspective of keeping Worker Wages low: "Keeping the total cost of wage low makes employees and their household decreasing the amount of buying. The economic of the country will be not good" (Student 39, personal communication, August 4, 2019); "By falling people's salary, it become difficult for Country economic growth

because people refrain to buy products" (Student 14, personal communication, August 4, 2019). Another comment analyzes Worker Wages from a short-term and long-term perspective: "Reducing wages will increase employee dissatisfaction a bit, but in the long run it is a benefit to have more storage in the company and in the country" (Student 34, personal communication, August 4, 2019). This next comment ties in macroeconomic concepts: "Employees' wage is also related to company's economic such as inflation / deflation. For example, if worker wage is high, people buy a lot of things, then price will be high. And vice versa" (Student 17, personal communication, August 4, 2019). Overall, student comments reflect a robust cognizance of the human aspects involved in economic decision-making. Please see *Appendix C* for the end-of-semester letter sent to students in the course from the educator.

**Implications**

The outcomes for the Economics Game yielded five major themes. First, student comments suggest that the Economics Game was successful in increasing student understanding of economic principles. Second, students appreciated the Economics Game and were able to deepen their understanding of economic principles as a result of taking the course and participating in the game. Third, student comments suggest a robust cognizance of the human aspects involved in economic decision-making. Fourth, students indicated strong gains of transferrable experience with working effectively in teams during the lecture of economic principles. Finally, student comments note several opportunities to make improvements to the Economics Game, and to the lecture on economic principles in general, for the future. Some examples include giving more explanation and consideration given for ELL students and managing student expectations regarding the course workload. Based on the implications, the key learnings from the Economics Game are consolidated as follows: 1) Student comments suggest that the Economics Game aided in increasing and deepening student understanding of economic principles; 2) Students were able to gain transferrable experience through coursework emphasizing decision-making, experiential learning, and teamwork; and 3) The Economics Game can benefit greatly by integrating more explanation, consideration, and management of student expectations in the future.

These key learnings have implications for both educators as well as for learners. Educators can consider not being confined by real-world constraints when using applied examples which integrate course topics; By focusing on conceptual application of concepts rather than memorization and regurgitation, it might be possible to provide more opportunities for deep learning for learners. Learners can be encouraged by the results of this paper to actively seek out opportunities for deep learning experiences in the higher education classroom; To advocate for more innovative and engaging ways of learning beyond more traditional, lecture-heavy methods. Experiential learning opportunities in the classroom give the learner more return on their investment by focusing on the *doing*. If educators and learners make efforts to do the aforementioned, the potential for the retention of course material can increase exponentially.

**Conclusion**

Overall, the Economics Game was effective in assisting with the delivery of economic principles to leaners in an innovative way that digressed from real-world constraints but accentuated the implications of taking risks and of making large-scale decisions that will impact many individuals and subsequently households. Limitations for this study include collecting data within a classroom environment, where various forms of bias are possible, and the lack of subject expertise of the educator who taught the course on economic principles at the start of the course. Future research should more thoroughly examine the possibility of incorporating more socio-cultural learning approaches into progressive classrooms intent on inspiring life-long learning among participants within a learning practice (Vygotsky, 1997). Many courses require a high degree of instruction, such as math or engineering courses. However, being able to balance whatever instruction is required with educating in a way that encourages more deep learning and less rote memorization and lecturing. It is hoped that this study can help to motivate educators to deviate from the comfort and convenience of teaching directly from the textbook. There are literally whole worlds that can be created around key concepts and principles from myriad of subjects; Economics is just one of them.

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**Appendices**

**Appendix A: The Economics Game: Samples of Rounds**

**Round 1: Team Company Information (student-populated)**

| TEAM | BUSINESS/PRODUCT | VALUES | DECISION-MAKING | MATERIALS |
|---|---|---|---|---|
| **GENIE** | Customized Face-Mask (APP + Products featuring custom mask/makeup) | Customer Loyalty; Customization | "Small/Flat"; Generalists; Quick and Lean; need Legal team (contract) | Technology<br>Cotton<br>Water<br>Cosmetics |
| **CRISPY** | Water Bottle Holders (plus variations) | Low Cost; Convenience; Creativity | Decentralized; Low Task Structure to encourage creativity | Plastic<br>Magnet<br>Metal<br>Silicon |
| **ROCK** | Remote Pet Camera (collab with Canon) | Ease of Use; Light; Incentive for those who want pets but aren't home much) | Product/Sales managers; CEO | Metal<br>Rubber<br>Fiber |
| **PAPER** | Backpack with Cooling Feature and built-in Device Charger | Cooler and Lightweight Materials; Durability; Thermo- | Customer-Based; By Function | Batteries<br>Mesh<br>Plastic<br>Metal (for button)<br>Anti-Bacterial |

| | | Tech | | Sanitizer |
|---|---|---|---|---|
| **OC** | Eyeglasses Shop | Trusted by people who have poor eyesight | Small/Flat; Functional Structure; Departments (by product) | Plastic<br>Glass<br>Wire<br>Rubber |
| **TAVIO** | Traditional Japanese Sweets and Snacks Shop (with Tea Room) in U.S. (Boston) | Tradition<br>Low Cost | 10-15 employees<br>(wear Kimono/uniform); CEO-down; Centralized | Beans<br>Tea Leaves<br>Tea Bag Materials<br>Rice<br>Sugar |

**Round 2: Setting the Stage for the Market Economy: Payneland**

The Year: 2040
Payneland is the only inhabited continent (total of 7 continents) of the New World in the aftermath of the Great Downing (2034), the meteoric event that wiped out 99% of the population. Payneland was established in 2038 when several towns came together to pool resources and to prosper. The country is in the beginning stages of organizing into a unified body and needs to consider some issues of the economy. Six companies have been selected by the Payneland government to help expand the possibilities for the future of Payneland and the New World.

MASTER BUDGET - COMPANIES

| COMPANY | NUMBER OF EMPLOYEES | MASTER BUDGET (per year) |
|---|---|---|
| GENIE | 400 | K 960 |
| CRISPY | 350 | K 840 |
| ROCK | 250 | K 600 |
| PAPER | 300 | K 720 |
| OC | 200 | K 480 |
| TAVIO | 300 | K 720 |
| **TOTAL** | **1,800** | **K 4,320** |
| **AVERAGE** | **3,000** | **K 720** |

THE MARKET ECONOMY - PRICE OF RAW MATERIALS PER UNIT OF MEASUREMENT

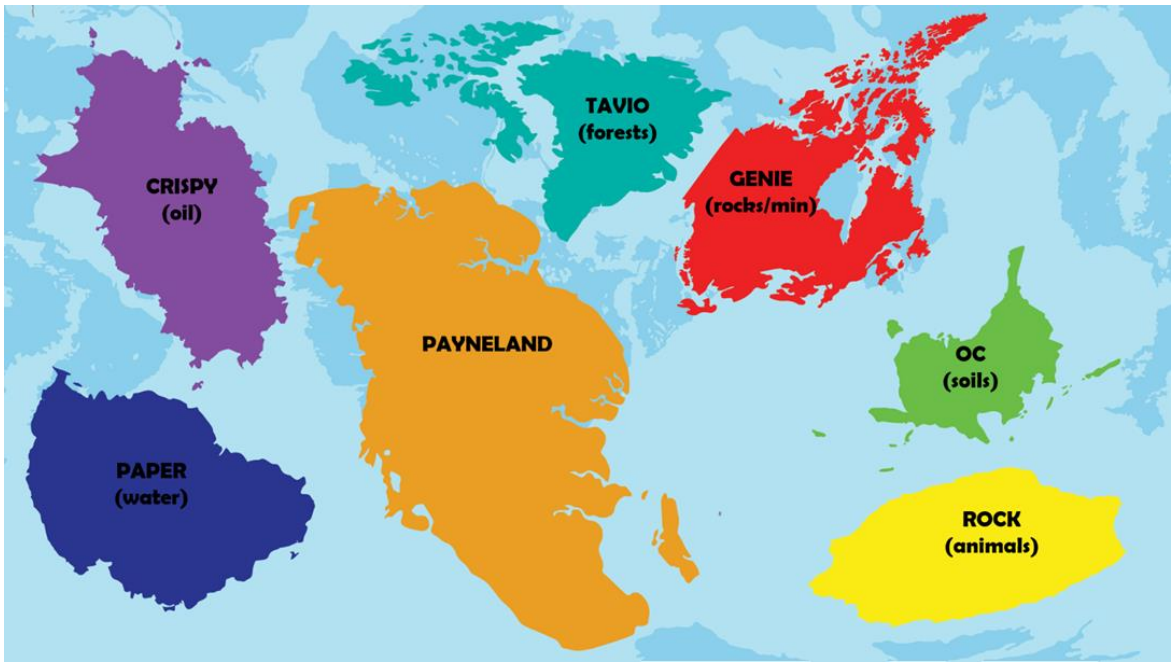
| MATERIAL | PRICE | UNIT OF MEASUREMENT |
|---|---|---|
| SOILS | K 0.06 | Wheelbarrow (7.5 gallons) |
| ANIMALS | K 0.12 | Ton (31.8 gallons) |
| WATER | K 0.03 | Barrel (42 gallons) |
| FORESTS | K 0.08 | Cord (957.5 gallons) |
| OIL | K 0.04 | Barrel (42 gallons) |
| ROCKS/MINERALS | K 0.10 | Wheelbarrow (7.5 gallons) |
| **AVERAGE** | **K 0.07** | |

1 gallon (dry/liquid) = ~ 4 liters

**Round 5c: Updated Team Tables (student-populated)**

| COMPANY | AVG WAGE | TOTAL COST: WAGES | RAW MATERIALS (UNITS) | TOTAL COST: WAGES + RAW MATERIALS | REMAINING BUDGET (RB) | TAX RB x 0.05 | PRODUCTION COSTS | RETAIL PRICE: PRODUCT SERVICE |
|---|---|---|---|---|---|---|---|---|
| **ROCK** | K 0.8 | K 200 | Forest-200<br>Rock/Minerals- 400<br>Oil-400 | K 200 + 72 = K 272<br>45.3% | 54.7%<br>K 328 | K 16.4 | K 372/100<br>(period costs = K 46) | K 0.028<br>K 0.007 |
| **TAVIO** | K 1.01 | K 302 | Soil-200<br>Animal-250<br>Water-400 | K302+54 = 356<br>49.4% | 50.6%<br>K364 | K 18.2 | K 5.4/100<br>(period costs = K 2.6) | K 0.15<br>K 0.02 |
| **CRISPY** | K 1.2 | K 420 | Soil 250<br>Rock/Mineral 300<br>Oil 150 | K471=65.5% | K249=34.5% | K 12.5 | K 53.33/100 | K 0.3<br>[inclusive] |
| **OC** | **K 1.0** | K 133 | FORESTS 100<br>OIL 100<br>ROCKS/MIN 150 | **K 200**<br>**47.3%** | **K253**<br>**52.7%** | **K 12.7** | **K 239/100** | **K 0.08**<br>**K 0.0** |
| **PAPER** | K 1.2 | K 420 | Water 200<br>Oil 200<br>Forest 300 | K 421<br>58% | K 299<br>42% | **K 15.0** | **K 175/100** | **K 0.01**<br>**[inclusive]** |
| **GENIE** | K 1.305 | K 522 | SOIL – 100<br>ROCK/MIN – 200<br>FOREST – 200<br>WATER - 400 | K 522 + 54 = K 576<br>60% | 40%<br>K 384 | K 19.2 | K 582.7/300,000 | K 0.01<br>[inclusive] |
| **UPDATED AVERAGES** | **K 1.09** | **K 322.5** | **Forest (4): 200**<br>**Rock/Min (4): 263**<br>**Oil (4): 213**<br>**Soil (3): 183** | **K 383**<br>**54.3%** | **K 313**<br>**45.7%** | | **K 238** | |

**Round 6: Exploring the New World Economy**




The year is now 2080. Life in Payneland has expanded and prospered. So much so, in fact, that the government has decided to explore the other land masses (other than Payneland) which make up their world. In doing so, it is discovered that each continent contains a different cache of raw materials. As a result, the government is once again using the six selected companies to take their employees (and immediate family members) to one of these continents to initiate the World Economy. Each continent will become a Country. Payneland will remain intact, will serve as the central government, and it will maintain a 30% share of the World's Raw Materials since it is the only land mass with all six natural resources.

NEW WORLD LAND MASS PROFILES

| **LAND MASS** | **RAW MATERIAL (NATURAL RESOURCE)** | **% WORLD ECONOMY (RAW MATERIAL)** | **CLIMATE** | **IMPORT TAX (RAW MATERIALS)** |
|---|---|---|---|---|
| RED<br>(GENIE) | ROCKS/MINERALS | 95% | Mild; Earthquakes; Moderate Humidity | 5% |
| TEAL<br>(TAVIO) | FORESTS | 95% | Cool; Forest Fires; Dry (No Humidity) | 5% |
| PURPLE<br>(CRISPY) | OIL | 95% | Cool; Sandstorms; Dry (No Humidity) | 5% |
| BLUE<br>(PAPER) | WATER | 95% | Cold; Winter Freeze; Moderate Humidity | 5% |
| GREEN | SOILS | 95% | Hot; Rain Season; Very | 5% |

| | | | | |
|---|---|---|---|---|
| (OC) | | | Humid | |
| GOLD (ROCK) | ANIMALS | 95% | Mild; Pollution; Very Humid | 5% |
| **ORANGE (PAYNELAND)** | **ALL** | **30% (5% per RAW MATERIAL)** | **Balanced Seasons; Overpopulation; Moderate Humidity** | **N/A** |

MASTER BUDGET – TEAM/COUNTRY

| **TEAM / COUNTRY** | **POPULATION** | **MASTER BUDGET (per year)** |
|---|---|---|
| GENIE | 40,000 | K 96,000 |
| CRISPY | 35,000 | K 84,000 |
| ROCK | 25,000 | K 60,000 |
| PAPER | 30,000 | K 72,000 |
| OC | 20,000 | K 48,000 |
| TAVIO | 30,000 | K 72,000 |
| **TOTAL** | **180,000** | **K 432,000** |
| **AVERAGE** | **30,000** | **K 72,000** |

THE WORLD ECONOMY - COST OF RAW MATERIALS PER UNIT OF MEASUREMENT

| **MATERIAL** | **COST** | **UNIT OF MEASUREMENT** |
|---|---|---|
| SOILS | K 6 | Wheelbarrow (7.5 gallons) |
| ANIMALS | K 12 | Ton (31.8 gallons) |
| WATER | K 3 | Barrel (42 gallons) |
| FORESTS | K 8 | Cord (957.5 gallons) |
| OIL | K 4 | Barrel (42 gallons) |
| ROCKS/MINERALS | K 10 | Wheelbarrow (7.5 gallons) |
| **AVERAGE** | **K 7** | **Unit** |

1 gallon (dry/liquid) = ~ 4 liters

THE NEW WORLD – AVERAGE RESIDENT CONSUMPTION OF RAW MATERIALS (PER YEAR)

| **MATERIAL** | **% OF PERSONAL BUDGET USED** | **USAGE NOTES** |
|---|---|---|
| SOILS | 17% | All residents of The New World plant their own fruits and vegetables, so soil is in high demand. Soils Country sells "seasonal soil blends" to encourage year-round purchases. |
| ANIMALS | 20% | Animals Country has innovated the meat industry by growing portions of the various meats in laboratories from stem cells, thus cutting down on the labor involved in meat production. The latest J-Pop bands (most influential music form in the New World) have been promoting myriad of fashion accessories made from Animals. |
| WATER | 20% | Blue Country has perfected a water filtration and purification system that allows Households to re-use all of their water (waste, etc.) for all purposes for one year. New World Residents pay an annual fee to Blue Country for replacement filters. |
| FORESTS | 16% | New World Residents use wood for various purposes, and rely on Forest-based medicines for healthcare. Many Residents make use of Forest materials for artistry-related purposes such as hobbies and as a form of recreation. Countries rely on Forest Country to produce rubber and other material used during the manufacturing process. |
| OIL | 11% | The New World has found many different alternative energy sources, but Oil is still used to heat the vast majority of Households. Oil is also still used to fuel various types of machinery used for production, commercial transportation/supply chain management, and construction. |
| ROCKS/MINERALS | 16% | This Raw Material is used primarily in building and road construction. New World Residents are fond of decorative glass items and jewelry. Cans are the preferred method for long-term food storage. |
| **TOTAL** | **100%** | |

**Updated Country Information, Year 2081 (Student-Populated)**

| COUNTRY | POPULATION | MASTER BUDGET (per year) | % OF POPULATION EMPLOYED | AVERAGE EMPLOYEE WAGE (per year) | TOTAL COST - WAGES |
|---|---|---|---|---|---|
| GENIE (RED) | 40,000 | K 96,000 | 40% (38,400) | K 1.815 | K 29,040 |
| CRISPY (PURPLE) | 35,000 | K 84,000 | 55% (19,250) | K 1.2 | K 23,100 |
| ROCK (GOLD) | 25,000 | K 60,000 + K 1,000 (early submission) = K 61,000 | 50% (12, 500) | K 1.0 | K 12,500 |
| PAPER (BLUE) | 30,000 | K 72,000 + K 1,000 (early submission) = K 73,000 | 40% (12,000) | K 1.2 | K 14,000 |
| OC (GREEN) | 20,000 | K 48,000 | 40% (8,000) | K 1.0 | K 8,000 |
| TAVIO (TEAL) | 30,000 | K 72,000 | 40% (12,000) | K 1.01 | K 12,120 |
| TOTAL | 180,000 | K 434,000 | 24% (102,150) | N/A | K 98,760 |
| AVERAGE | **30,000** | **K 72,333** | **K 17,025** | **K 1.20** | **K 16,460** |

**Appendix B: The Economics Game: Student Evaluation Questions**

1. What, if anything, did you enjoy about The Economics Game? Was there a Round that stands out to you?
2. What, if anything, did you NOT enjoy about The Economics Game? Please give specific examples.
3. One of the key advantages to performing well economically in the Game was to keep the Total Cost of Wages low. Discuss the potential economic impact a decision like this can have on Employees, their Household, and on the greater Company/Country.
4. Did The Economics Game help to increase your understanding of Economic Principles? Why or why not?
5. Do you feel that your Team worked well together? Why or why not?
6. What suggestion(s) do you have for improving The Economics Game?
7. What is ONE thing that you have learned from participating in The Economics Game? What, if anything, do you know that you didn't know before? What, if anything, can you now do that you couldn't do before?

**Appendix C: End of Semester Letter to Students**

Dear Students -

I have reviewed each Assessment of Economic Principles, and based on my review, here is what I would say:

- Many of you have a strong understanding of micro-economic principles and were able to demonstrate this understanding via the Assessment.
- Some of you might have difficulties understanding English, which was reflected in properly answering the questions on the Assessment.
- Everyone should review basic economic principles from when you took the economics course in Japan.

I was told that all students had taken and passed a course on economic principles in Japan. As such, I geared my course toward application, so as not to make your experience redundant. I truly hope you appreciated the challenge, and the results were quite impressive.

The Final Presentations were very strong, and it was clear that each Team put in a lot of effort. Each Team clearly demonstrated to the Class that they can organize and work effectively as a team, and that they understand very well macro-economic principles.

The SONGS WERE AMAZING!!

Learning to work effectively as a team (and with other teams) is an essential skill for the workplace, no matter where you are in the world. It is frustrating to organize schedules, etc., but building skills in this area will benefit you throughout life. The only way to become skilled at team management and team participation is to practice. I hope this course helped you in this regard.

I want to commend each of you for your willingness to come to Boston and experience this Program. It takes courage, ambition, and a desire to be the positive change that the world needs. I hope that you had a great experience overall, and that you will head back home having been challenged in new and life-lasting ways.

My main goal as a teacher is to provide students with the tools and resources to THINK FOR THEMSELVES so that they can be successful in all their efforts. If you can at least in some way think more like an Economist, I feel that I have done my job.

I wish you safe travels back home and thank you once again for a great class experience overall.

Sincerely,