

One Size Doesn't Fit All: A Team Project Designing Small Scale Economic Development Projects

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ABSTRACT

We describe an innovative active learning strategy for a course on the economics of developing countries – a team project designing a small scale economic development project. Student teams research issues faced by developing countries and identify a specific problem in a specific locale. Students then create a detailed, feasible plan to alleviate the problem. Student plans include five key components: justification, implementation, budget, funding and evaluation. After having implemented this project for five years, we believe it has the potential to enhance learning and improve analytical, creative, problem solving and research skills. We discuss results from a survey in spring 2017 where students respond favorably to the project.

Keywords: Teaching Economics, Development Economics, Economic Education, Active Learning

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INTRODUCTION

We are in the midst of a movement in economic education towards complementing traditional “talk and chalk” lectures with engaging and innovative active learning approaches. Several studies have found students in economics classes which incorporate active learning strategies outperform students in traditional lecture based economics classes (Emerson and Taylor 2004; Olitsky and Cosgrove 2016). Active learning may also improve attitudes toward economics and retention of economics knowledge, significant benefits even in the absence of improved performance (Durham, McKinnon and Schulman 2007; Zanca 2011). Classes in Development Economics provide an opportunity to show how course materials apply to real world situations (Singh and Russo 2013).

This paper describes a new active learning strategy for a development economics course: a team project designing a small scale economic development project. In this project, student teams research issues faced by developing countries and design a project that will enhance development in a specific location. Students write a 15-20 page paper and present their findings to the class. These student deliverables must address five aspects: justification, implementation, budgeting, financing and evaluation. We believe the design of the project provides an opportunity for students to develop and enhance a number of desirable proficiencies. In a survey provided to our students in the Spring of 2017, 70% agreed that the project improved their overall understanding of economic development.

In the next section we describe potential benefits of the development project by drawing on the previous literature. Following potential benefits, we describe the project in detail, providing all information necessary for replication. Next, we discuss student reception by

analyzing results from a student survey and course evaluations. Next, we discuss challenges and the final section concludes.

POTENTIAL BENEFITS

The development project is designed to give students an active, applied experience to “act like an economist” (Hansen 2006) by designing a project that will enhance economic development. Hansen (1986 and 2001) has long argued that economics departments should place more focus on what we expect majors to be able to do upon graduation. To this end, he has developed six proficiencies for economics majors including: 1. Access existing knowledge; 2. Display command of existing knowledge; 3. Interpret existing knowledge; 4. Interpret and manipulate economic data; 5. Apply existing knowledge; and 6. Create new knowledge. Salemi and Siegfried (1999) recommend all field courses be designed to help students attain the Hansen proficiencies. One way a field course in development economics may help students attain the Hansen proficiencies, particularly “applying existing knowledge” is through implementation of the development project. A national survey of U.S. undergraduate economics department chairs found that over 80% believe “Ability to apply existing knowledge” is a very important learning outcome (Myers et al. 2011). In particular, two characteristics of our project: active learning and analysis of current issues, combine to potentially contribute to students’ attainment of Hansen’s proficiencies.

The development project provides an opportunity for students to be actively involved in their learning processes by seeking out a problem and a project to help alleviate that problem. Active learning requires students go beyond memorization and basic understanding by analyzing, evaluating and applying class materials (Perry et al. 1996). Teachers of economics are increasingly complementing traditional lectures with active learning opportunities (Whiting

2006; Brokaw et al 2004; Bothun 2012; Harmon and Lambrinos 2012). Benefits of active learning may include increased understanding of course content, improved learning experiences and enhanced critical skills (Salemi 2002).

The development project challenges students to design a program to alleviate a current problem in a developing country. Analyzing current, “real world” problems may enhance student interest, help students comprehend the applicability of course material and allow students the opportunity to connect sometimes abstract theory to practice. Singh and Russo (2013) find that asking students to design a randomized controlled experiment to address a real-world situation from a developing country enhances economics knowledge and improves motivation. Strasser and Wolf (2014) integrate a semester-long project simulating real-world policy consulting and find that students not only have an improved learning experience, but also increased confidence. Other projects challenging students to examine current economic issues have documented similar results (Aguilar and Soques 2015; Beaudin et al. 2017; Brusentev and Miller 2015).

PROJECT DESCRIPTION

The project was first implemented in an economic development class in the 1970s and has been ongoing at that same small, private university by four different professors, including a Political Science professor, ever since. Additionally, the project was implemented at a different liberal arts college in 2014. Our economic development classes are typically comprised of juniors and seniors. Students are often economics majors or minors or international business majors and a principles class (microeconomics or macroeconomics) is the only prerequisite.

The assignment is introduced in the first few weeks of the semester and students are randomly assigned to teams of two. In our experiences, this allows students to complete a more

comprehensive project than they are able to do on their own and to develop skills working in a team. If desired, it would be possible to replicate the project with larger teams, although there should be increased penalties for free riding in that case. When the course is run concurrently with a Politics of Developing States course, which uses the same assignment, we allow students enrolled in both courses to complete either one project on their own or two projects with partners. Our classes typically comprise 25 students allowing for 12 to 13 teams.

All teams are presented with the same task: designing a small-scale project that will enhance economic development in a specific locale. Each team chooses a developing country from a given list³ and completes research on current economic development problems faced by that country. Teams then pick one specific problem in a specific locale for which they devise a development project. We ask teams to develop relatively small- scale plans costing a maximum of \$1,000,000 for both start-up expenses and operative expenses for the first 2-3 years. The idea behind the project is if given more time it could actually be implemented and thus we are looking for students to create realistic, feasible and detailed plans. To demonstrate the assignment, we provide details from a student project in the spring of 2016. That project set up a water project in rural Haiti.

Student deliverables include a 15-20 page team paper and a 10 minute class presentation.

More specifically, each team addresses the following:

1. Justification – Each team provides a compelling justification as to why the country and specific community within the country need the project. In this section, which typically runs 4-5 pages, students identify a specific problem and justify how their plan will help

³ This is usually all the low and some of the medium development countries on the Human Development Index.

alleviate the problem. Students are expected to include and appropriately use statistics and to relate materials to concepts learned in class. In our example, the students discover that 52% of people in rural areas of Haiti do not have access to improved water sources (The World Factbook), and argue that this is hindering economic development. They then choose ten communities, in which to implement the project.

2. Implementation plan – Each team devises a feasible and detailed plan on how to implement their project in the specific chosen location. In this section, students must include an analysis of all materials needed. It is not enough to state that administrators will use local labor—students must describe what wage they will pay and why, how they plan to choose labor resources, and what incentives they give and to whom to maintain the project in the future. We recommend teams look at similar projects in the region for assistance. In our example, students considered hand dug wells, drilled wells, and driven wells, ultimately choosing hand drilled wells for performance and cost efficiency. They found a contact at a hospital in Haiti and worked with her to find ten specific locations that are in need of wells. The students then used Google Earth to ensure there were appropriate water sources, such as rivers, in each, but acknowledged that they may still be affected by droughts, in which case they provided a backup plan. They created a detailed plan to obtain volunteers to build the wells, including a training schedule, and provided details about how the wells would operate once built.
3. Cost structure – Teams create a realistic budget for their plan which includes the costs of materials, labor and project evaluation among other items. Teams are required to provide sources for all prices. In the Haiti water project, students provided estimates for all materials and labor, including shovels, mortar, and even gasoline from airports to each

location. They determined which items they could purchase in the US to bring with them and which they would need to buy locally. Often, students must be creative when trying to find local costs. For example, students contacted churches in each area to obtain permission to stay there for free, but planned to provide donations to each.

4. Potential sources of funding – Teams research organizations and identify at least two that might convincingly fund their projects. Funding includes both initial start-up costs and continuing operating expenses. Teams must provide a justification as to why they believe these organizations may be both interested and able to fund their plan. It is not enough to simply state that the World Bank will provide funding. In the Haiti water project, students found four government and private sources, including a charity that had funded 39 similar projects in Haiti.
5. Evaluation – Teams are asked to consider what would make their project a success. What are they hoping they will achieve? Students then create a methodology to evaluate their success in alleviating the specific problem. In our example, the objective was to reduce the amount of water borne diseases in their chosen communities and students planned to communicate with leaders to get anecdotal reports and to look at specific statistics if and when they become available.

We take several steps to support and mentor our student teams as they design their projects. First, we post excerpts from past assignments on our class websites to provide initial motivation and clarification. Second, we ask all teams to submit a 2-3 page proposal approximately one month after the assignment is given. This helps to alleviate procrastination, but also provides adequate time for alterations if a proposal is not feasible. In the proposal, students describe their

project, explain why they are implementing this specific project, and provide a list of tasks to be completed with at least three sources. Third, we typically meet with all student teams the week after proposals are submitted to discuss the plan and any potential issues. In the event that proposals are not feasible or detailed enough, we ask students to submit a new proposal and follow up with another meeting. For example, one group may propose that they provide an irrigation system for an entire country. In that case, we would note that they will likely go over budget and be unable to provide enough details to be successful.

In our classes, the project comprises 20-25% of students' grades. Students are graded both on their presentations and on the written team papers. A sample grading rubric for the team paper, which is also provided to students, is in Table 1.

[Insert Table 1]

STUDENT RECEPTION

During the spring of 2017, we administered a Likert scale survey to a class of twenty two students. Twenty one students were present the day of the survey and completed it. The survey included questions designed to capture learning objectives for the project, general learning objectives, and skills that were identified as desirable by employers during a survey by the National Association of College and Employers (NACE 2015). For example, 70.2% of employers surveyed by NACE identified "problem-solving skills" as an attribute they seek on a candidate's resume. Our survey is included in Appendix A. We also analyzed comments from course evaluations every spring from 2012 to 2017.

Students responded favorably to the assignment, with the majority of students reporting positive responses to each question and the median response to each question as a four

representing “agree” on the Likert scale. The most positive responses were to the question, “The team project helped me develop an understanding of the complexities, challenges and opportunities of implementing economic development projects in a specific local context,” which 90% of respondents agreed with. Students also responded particularly favorably to the questions, “The team project enhanced my understanding of funding opportunities and challenges for small scale development projects” and “The team project enhanced my ability to research, analyze and design an effective and feasible development project for a targeted economic development issue in a specific local context,” which 80% and 75% of students agreed with, respectively. The latter captures Hansen’s, “Apply existing knowledge” proficiency goal especially well. Seventy five percent of students that responded to our survey agreed that the development project enhanced their problem-solving skills, which addresses the desire of employers in the NACE report.

All but four students (80%) reported that the team project increased their interest in economic development; an important outcome in itself given that undergraduate degrees in economics have recently leveled off (Siegfried 2017). All but six students felt the project was a valuable aspect of the course (70%), with three reporting a neutral response. The lowest responses occurred for “The team project enhanced my ability to work on a team” and “The team project enhanced my communication skills.”

These survey results mirror trends in comments on course evaluations. We analyzed course evaluations from the same spring 2017 section when we administered surveys as well as from the previous five years, including 2014 evaluations from another university. Thirty eight comments specifically discussed the project out of one hundred total evaluations. There are three trends. The first is from students who enjoyed the project, leaving comments such as, “The course project...really allowed me to tie everything together;” (spring 2014) “I also really liked

the project - it challenged me and was a creative way to put together all that we had learned;” (spring 2013) and, “I also enjoyed the final project. It was really interesting to focus on a current need and develop a solution. It's quite eye-opening!” (spring 2013). Sixteen comments of the thirty eight fell into this category. The second trend is from students who felt the project was stressful or would benefit from more deadlines, noting things such as, “I thought that the project was too demanding for this level of a course,” (spring 2017) and offering suggestions such as, “I would suggest moving up the due date of the final project and encouraging students to get started sooner,” (spring 2016) and “More example projects for a clear idea of how to go about the project.” (spring 2017) Nine comments fell into this category. Finally, eight students expressed dissatisfaction in working with partners or not being able to choose them, noting things such as, “Make the team project a solo project,” (spring 2016) “I would allow students to either pick their partners for major project or allow them to be paired based on a topic they are interested in,” (spring 2015) and “Get rid of the research project. Although it is fun to see everything come together, another partner project that requires extensive research and communication with another student is horrible.” (spring 2015). Considering both the quantitative and qualitative results, we believe the most unpopular aspect of the project is the teamwork.

Despite these negative comments, students responded consistently positively to the course in general and to the question, “Given the nature of the course, are workload demands of this course realistic,” with mean scores at a 1.5 or below each semester on a four point scale where a 1 indicates that no improvement is needed.⁴ In fact, only one student in six years (out of 90 students) responded with “a fair amount of improvement is needed,” and none has reported

⁴ Specifically, a 1 indicates that no improvement is needed, a 2 indicates little improvement is needed, 3 indicates a fair amount of improvement is needed, and a 4 indicates that major improvement is needed

that “major improvement is needed.” At the other university, only 1 of 10 students reported that the coursework was “heavy,” with the other 9 reporting that it was “moderate.”

CHALLENGES

We note that if students were to actually implement the project, they would inevitably run into issues and that no one would create a perfect plan initially. We encourage students to recognize this and to create a plan B or C for portions of their plan. In fact, the most interesting projects often happen when students cannot find perfect information. We must also relax our typical requirements for sources. After all, there is a very low likelihood that students will find a peer reviewed source outlining housing costs in a town in eastern Nigeria. Along with peer reviewed articles, we allow students to use government websites and information from NGOs. We also encourage students to reach out directly to people working in the region and they typically have luck getting in touch with people who are willing to help. In our example, students worked with a professor at another university who had run several similar projects. He provided contacts in Haiti the students had used and assisted them in choosing a well style. Students typically have the most difficulty finding pricing information and we therefore accept most reasonable sources for prices. In the case where a student cannot find the price of a product or service in their chosen region, we encourage them to find one in another region of the same country, or even in a nearby country and then perhaps add a contingency to the budget. We note that if they can only buy products domestically they must create shipping plans and estimates.

Another challenge is when students try to do too much. We have gotten more than one proposal where students propose to reduce a country’s infant mortality rate or to cut corruption

in half. We help prevent this by setting a budget of only a million dollars and by requiring students to turn in project proposals before they start the bulk of their work.

In an effort to mitigate free riding, we check in with students at several points over the semester informally via email or formally via a self and peer evaluation form. We ask students to describe their contribution to the project as the contribution of their partner. These evaluations are considered when grading projects and when appropriate two partners may receive different grades. In our experience, this happens in 5-10% of the projects. The other groups report no issues.

A final challenge is that students have noted is that the assignment is stressful because it makes up a large portion of their grade. To alleviate this, we make our expectations as clear as possible including a very detailed rubric. A sample rubric is provided in Table 1. We also find providing sample projects is helpful so students understand what would constitute an A. Finally, we have an open door policy and are willing to read students' drafts if they provide us with enough lead time. Students have suggested more frequent deadlines for portions of the paper and we do provide a deadline for the proposal. However, at some point we believe it is up to the students to manage their time.

CONCLUSION

We outline an active learning strategy where students design a small-scale project that will enhance development in a specific locale in a developing country. Students produce a 15-20 page paper and 10 minute presentation that provide a justification, implementation plan, cost structure, funding, and plan for evaluation. We believe the design of the project provides an

opportunity for students to develop key proficiencies that will enhance their abilities to “act like economists.”

Results from course evaluations and a survey in the spring of 2017 found that students respond favorably to this challenging project. Students especially noted the project improved their understanding of the complexities of designing real world projects, improved their abilities to research and design such projects, and improved their problem solving skills.

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Table 1: Grading Rubric for Team Paper

Dimension	Excellent	Competent	Needs improvement
Justification of need for project	The paper provides a convincing case that the project will help enhance development in their chosen country & community. Arguments are connected to materials discussed in class. 30 – 20 points	There may be slight flaws in the justification or justification is not complete at the country or community level. Arguments may not fully connect to materials discussed in class. 19 – 10 points	No justification at either the country or community level or the justification provided is not convincing or lacks evidence. Little or no attempt made to relate arguments to materials discussed in class. 9 – 0 points
Project Plan	The paper provides a realistic detailed and feasible plan. The plan includes a specific location and an analysis of materials needed. 25 – 20 points	The paper provides a realistic & feasible plan. Some details may be missing or not fully thought out. Some important materials may be missing. 19 – 10 points	The plan is not well thought-out or not enough detail is provided. The list of materials needed may be inadequate or the location may not be specific. 9 – 0 points
Cost Structure	The paper provides a detailed analysis of costs. The costs are realistic, well-thought out and cited. 10-8 points	The paper provides an analysis of costs related to the project. Some details and sources may be missing. 7-5 points	The cost structure is inadequate. Major details may have been missed or those provided may not be properly justified. 4-0 points
Potential Sources of Funding	The paper finds reasonable sources of funding that might convincingly fund the project. 10-8 points	The paper finds reasonable sources of funding. However, more discussion on why those sources might convincingly fund the project needed. 7 – 5 points	No discussion or vague discussion of funding. The sources provided are not likely to fund the proposed project 4 – 0 points
Evaluation methodology	The paper provides an appropriate plan for evaluation including a discussion of success. 10 – 8 points	The paper provides a plan for evaluation; however, the plan has small flaws or does not adequately address how success will be measured. 7 – 5 points	The evaluation plan is inadequate or no plan is discussed. 4 – 0 points
Writing	The paper is coherently organized. There are no spelling or grammatical errors. Writing is clear. 10-8 points	The paper is generally well organized. There are minor spelling or grammatical errors. Writing is mostly clear. 7-5 points	Paper is poorly organized and difficult to read – does not flow logically from one part to another. There are several spelling and/or grammatical errors. Writing lacks clarity. 4-0 points
Citations	All sources and evidence are properly cited. This includes both in text citations as well as works cited. 5-4 points	Some pieces are unreferenced or inaccurately referenced. There may be problems with completeness and format of citations. 3 – 1 points	No attempt is made to cite sources or evidence. 0 points

Appendix A: Student perceptions survey

Economic Development Team Project Survey

Your participation in this survey is voluntary. All answers are anonymous.

Instructions: Please indicate the extent to which you agree with each statement below, using a scale of 1-5, where 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree

Specific project learning objectives

1. The team project enhanced my ability to research, analyze and design an effective and feasible development project for a targeted economic development issue in a specific local context.

1=strongly disagree 2=disagree 3=neutral 4=agree 5=strongly agree

2. The team project helped me develop an understanding of the complexities, challenges and opportunities of implementing economic development projects in a specific local context.

1=strongly disagree 2=disagree 3=neutral 4=agree 5=strongly agree

3. The team project improved my ability to estimate a realistic cost structure for a targeted small scale development project.

1=strongly disagree 2=disagree 3=neutral 4=agree 5=strongly agree

4. The team project enhanced my understanding of funding opportunities and challenges for small scale development projects.

1=strongly disagree 2=disagree 3=neutral 4=agree 5=strongly agree

5. The team project enhanced my ability to design a monitoring and evaluation methodology and plan for a small scale development project program.

1=strongly disagree 2=disagree 3=neutral 4=agree 5=strongly agree

General learning objectives

6. The team project improved my overall understanding of economic development.

1=strongly disagree 2=disagree 3=neutral 4=agree 5=strongly agree

7. The team project gave me an opportunity to apply economic theories and concepts discussed in class to a specific real world issue.

1=strongly disagree 2=disagree 3=neutral 4=agree 5=strongly agree

8. The team project enhanced my problem-solving skills.

1=strongly disagree 2=disagree 3=neutral 4=agree 5=strongly agree

9. The team project enhanced my ability to work on a team.

1=strongly disagree 2=disagree 3=neutral 4=agree 5=strongly agree

10. The team project enhanced my communication skills.

1=strongly disagree 2=disagree 3=neutral 4=agree 5=strongly agree

11. The team project enhanced my creative abilities.

1=strongly disagree 2=disagree 3=neutral 4=agree 5=strongly agree

General Impressions

12. The team project increased my interest in economic development.

1=strongly disagree 2=disagree 3=neutral 4=agree 5=strongly agree

13. The team project was a valuable aspect of this course.

1=strongly disagree 2=disagree 3=neutral 4=agree 5=strongly agree

Any additional comments on the team project?