# The Nepal Project : Student-centered Learning as a Framework for Study Abroad

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## 1. Introduction

Study abroad offers students the opportunity to expand their education by placing them in a setting that differs immensely from their own. This alone can introduce students to foreign languages, cultural exchange, as well as increased knowledge of the chosen region of the world. Spending time abroad opens a window to a world of new experiences and promotes personal growth. Students who incorporate study abroad into their academic programs deepen their knowledge and understanding of international, environmental, political, and economic issues and, in often cases, develop new perspectives for their future study and career.

The Nepal Project, now in its third year, offers students a 12-day field trip to Nepal that includes both research and experiential learning centered on a local NGO and a government school in the capital city, Kathmandu. The program is open to all students from Musashi Institute of Technology (MI-Tech) interested in learning about the environment from the standpoint of a developing country. Students joining the program have opportunities to build knowledge and skills centered on various environmental issues and also to learn how to develop and conduct activities for environmental protection at the community level. In addition, the Nepal Program gives students a chance to develop IT skills through the use of various multi-media equipment while on the field trip, as well as creating content through the use of the virtual studio system located on the MI-Tech Yokohama campus upon their return.

The purpose of this article is to report on the activities of the 2005 Nepal Program, based on the collaboration of MI-Tech students, teachers and media staff together with students and teachers from National College, an affiliate of Kathmandu University. Emphasis on the student-centered approach taken in this program, and student satisfaction is discussed, based on findings from questionnaires and self-report data administered at the end of the program.

## 2. . Genesis of the Project

Initiated in 2002 to give students an opportunity to experience the dimensions and scope of environmental problems as they relate to the developing world, the Nepal Project has since evolved into a dynamic learning community directed toward building a better understanding of global environmental issues. By definition, a learning community is a style of learning in which the general goal is to give students opportunities to experience different perspectives, to develop

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approaches on integrating these different perspectives and, to focus on the strategies for connecting diverse people as well as diverse disciplines (Gabelnick and others, 1990 ; Shapir and Levine, 1999). The learning community within the Nepal Project consists of a variety of community stakeholders : elementary and university students, teachers, NGO staff and volunteers, shopkeepers, and families from the neighborhood who are interested in improving the conditions of their local environment. This learning community provides students from MI-Tech with a personal learning network as well as virtual network to learn from one another and share ideas, to interact and collaborate with people from different walks of life both culturally and professionally. In addition, it also motivates students to find and create connections between what they are learning in their classes at MI-Tech and how to apply it to the larger community.

## 3. Impetus for the 2005 Nepal Project Activities

Environmental issues in Nepal are multi-faceted and complex, owing in part to immense variations in the country's geography. Whereas Nepal's rural areas increasingly face issues of land degradation, deforestation, loss of biodiversity and poor sanitation, the urban areas are facing air and water pollution and solid waste management problems. Confounding these issues are the realities of high population growth (2.4 percent annually) and endemic poverty (annual average income ¥32,000 per capita), as well as a lack of infrastructure, skills and technology to adequately manage fragile resources. Efforts in the promotion of environmental management and conservation have also been sidelined over the past nine years due to political unrest and Maoist insurgency, particularly in rural areas. Further reticence on the part of the government to enforce environmental policies already in place has allowed industry to develop at will, leaving the environment and the human population vulnerable.

In the capital city Kathmandu, rapid and haphazard urbanization together with changing consumption patterns and a lack of an integrated solid waste management system has led to irresponsible dumping along riverbanks and roadsides, resulting in land, water and air pollution, and a subsequent rise in the spread of water and airborne diseases. With a population nearing 800,000, the average volume of solid waste to be disposed of daily in Kathmandu is on average 400 tones, with biodegradable waste making up almost 65%. Citing the lack of policy, finances and management skills at the municipal level, there is an urgent need for capacity building at the community level in raising awareness and extending support in reducing and managing waste at source with the goal of creating a clean and healthy environment for city residents.

## 4. Overview of the 2005 Programs

Through investigation of various cultural, educational, environmental and health dimensions in Nepal over the program's two years, (2002, 2003), the 2005 MI-Tech team, consisting of sixteen members : twelve students, (ranging from freshmen to graduate students), two teachers, one media center staff and one sound system staff identified two inter-related themes for the third and most recent field trip to Nepal in August 2005. Through activities with university students and teachers from National College, the team is planning long-term collaboration consisting of two inter-related programs : i. community waste management, and ii. environment education. Both programs share similar missions : to raise awareness among residents of Kathmandu about the critical role the environment plays in their lives and to support them in taking action through vari-

ous capacity building measures. Included in each program are elements of research and hands-on-experience.

Conducting research in Nepal offers students unique and challenging opportunities : examining environmental, cultural and social dimensions within a cross-cultural context can result in greater progress toward a deeper understanding of our global society. Hands-on-experience allows students to use and value the knowledge and skills they have learned back in the classroom. It also gives them a clearer understanding of the gaps in their learning, and stimulates them to make an effort in bridging those gaps. Both the research and experience provide students with "real reasons" for learning and using English.

## 4.1. The Waste Management Program

Directed by our investigation into the problems of waste management at source as described above, we found various women's community groups to be instrumental in addressing the problem in Wards (neighborhoods) in Kathmandu city. As a result, we targeted one women's NGO for our long-term collaboration together with National College students and their teacher.

## 4.2. Women in Sustainable Development

Regarded as pioneers for mobilizing solid waste management at the grassroots level, the NGO "Women in Sustainable Development" (WSD) has been focusing on the 3Rs - reduce, reuse and recycle since 2002. The goal of WSD is to enable people of Kathmandu to have a clean and healthy environment through local initiatives. To meet this goal their objectives include : i. reducing solid waste at source and ii. empowering community members to collect and manage solid waste through recycling activities. In 2003, WSD implemented the following activities : i. awareness-raising for waste management in local shops and households, ii. door-to-door waste paper collection and iii. the recycling of waste paper into shopping bags sold to retailers for use in the local market place.

The main focus of our collaboration with WSD together with National College was the management of biodegradable waste in targeted households in Ward #4 of Kathmandu City. The following outline of our schedule illustrates the main aspects of the program with WSD and highlights the collaborative elements between WSD and students, teachers and staff from MI-Tech and National College.

| Program Outline | | Collaborative Elements of the Program | |
|---|---|---|---|
| | Schedule | Research | Hands-on |
| 8/25 | WSD information sessions on waste management in Kathmandu ; presentation by MI-Tech students on waste management in Japan | Data on targeted community ; interview with WSD members | System and techniques of composting in Kathmandu |
| 8/26 | Field trip to households currently composting ; meeting with targeted households who will begin composting | Investigation of best practices in composting ; environment awareness questionnaires to household members | Distribution and installation of compost bins ; distribution of paper bags to retail shops |
| 8/27 | Field trip to paper recycle cottage industry "Jamarko" ; visit to shops using paper bags ; program evaluation | Discussion with "Jamarko" owners and staff ; questionnaires to shops using paper bags | Learning production process for recycled paper |

MI-Tech student giving a presentation.



Demonstration by WSD staff on composting techniques.

## 4.3. School-based Environment Education Program

Targeting environment education in government schools in Nepal is seen as being beneficial from the following points of view :

- Environment education programs already in place are geared to rote memorization, devoid of skill development and hands-on-experiences in the environment
- Teachers of environment education classes lack a deep understanding of environment issues, and have no access to teaching and learning materials that might support their classroom teaching
- Large class size (50 students and upwards) prevents teachers from implementing activity-based lessons
- A general lack of finances and facilities severely limits the quality of environment education in Government schools

Seventy-four six-grade students from Prabhat Elementary & High School, a government school located in Kathmandu city was designated by our team for the environment education program. The objective of our program was to raise awareness about environmental problems in the school community and to bring changes in attitudes and behaviors for the protection of the environment. The program, lead by MI-Tech and National College students used a student-centered approach for their activities with the children. The following outline of our schedule illustrates the main aspects of the program and highlights the collaborative elements associated with research and hands-on activities.

| Program Outline | | Collaborative Elements of the Program | |
|---|---|---|---|
| **Schedule** | | **Research** | **Hands-on** |
| 8/28 | Meeting teachers and children ; lecture from "Zero Waste Nepal" ; community learning activities with children | Pre-program questionnaire given to children ; information, data collected from "Zero Waste Nepal" | Students lead children in waste separation & community investigation |
| 8/29 | Children's presentations ; DVD for clean and green environment ; greening school yard activity | Discussions with school staff on environment curriculum | Students lead children in tree planting in school yard |
| 8/30 | Children's presentations ; school yard cleaning ; organization of children for waste management in school | Post-program questionnaire ; feedback from teachers at the school on the program | Students lead school yard cleaning and organized waste management |

MI-Tech and National College students teaching.



Greening the schoolyard is an integral part of the program.

## 4.4. Student-centered Learning based on Collaboration

Perhaps one of the unique aspects of the Nepal Project is the emphasis placed on student-centered learning (SCL) based on collaboration between teachers and students from Japan and Nepal. Student-centered learning emphasizes student responsibility and places activity at its heart (Cannon, 2000). It focuses on student responsibility and independence and develops characteristics of lifelong learners : motivation, self-evaluation, time management and the skills to access information. Based on the project's collaborative model, students in the Nepal Project have opportunities to work together on a common goal and to experience the process from a team perspective. Prior to departure, MI-Tech students, guided by their teachers, research and work together to create a detailed plan of action for the two programs situated in Kathmandu city. Once arriving, each student teams up with a student from National College to carry out the two programs. The following diagram illustrates both the student-centered approach and collaboration that forms the cornerstone of the program.
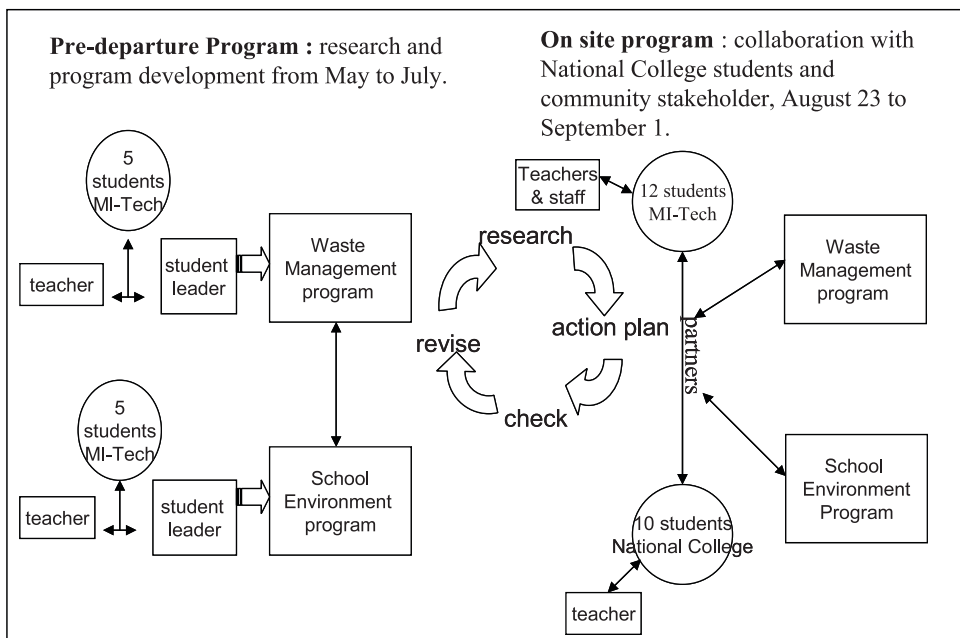
Follow-up to the program begins soon after the MI-Tech team returns to Japan, with students from National College visiting each program site to gather data, reporting back to MI-Tech students through e-mail and power point. The data is then created as web content by MI-Tech students and uploaded for students, teachers and staff in both locations.

## 5. Summary and Analysis of Student Questionnaire

MI-Tech and National College students answered a 40-item questionnaire for the purposes of program evaluation. A nominal scale was employed using five degrees of satisfaction from -2 (0-20% agreement of satisfaction) to +2 (81-100% agreement of satisfaction). Open-ended questions were also included. In total, twenty-two students responded : 12 MI-Tech students ; 10 National College students. The questionnaire was distributed one day after the program ended. Due to space limitations, only a selection from the various categories of the questionnaire will be discussed in this paper.

### 5.1. Overall Satisfaction of the Program

First, an overview of the average and variance of students' responses to the following two questions regarding program satisfaction.

Questions :

1) How satisfied were you with the program overall? (organization, schedule, content, etc.)
2) How satisfied were you with the partnering and teamwork between MI-Tech and National College students?

Results :

| Questions No. | All | | MI-Tech | | National College | |
|---|---|---|---|---|---|---|
| | Average | Variance | Average | Variance | Average | Variance |
| 1) | 1.000 | 0.381 | 0.917 | 0.447 | 1.100 | 0.322 |
| 2) | 1.136 | 1.552 | 0.833 | 2.152 | 1.500 | 0.722 |

The averages for all questions in this category are above 1.0 representing a good level of satisfaction. However, the point spread for question 2 on partnering and teamwork showed a much higher satisfaction level of 1.500 by National College students, compared to 0.833 by MI-Tech students. As the variance for MI-Tech students was very large (2.152), we looked at each answer and found two types of extreme values, +2 and -2. A total of six MI-Tech students responded with +2 while 2 students responded with -1 and one student with -2. Upon closer investigation we found the negative responses were from male participants. One reason for this could be a feeling of frustration and loss of dignity in their teamwork with National College students. Partnering and teamwork involves giving explanations, discussing schedule plans and general responsibilities of joint-leadership and co-operation. And while National College students have nearly fluent English skills, some MI-Tech students lack skills and confidence in their English language. Although the three male participants may have made an effort to undertake their responsibilities, they could have felt humiliated because they could not carry out their activities with ease, hence their low responses. This result points out the need for a greater emphasis on English preparation during the pre-departure phase of the program, as well as continued encouragement to speak English and the inclusion of activities to motivate students to take responsibilities for improving their own English skills prior to departure.

### 5.2.  Satisfaction about the Waste Management Composting Program

Questions :

5) How satisfied were you with the composting program and activities you participated in?

6) Did you get a clear understanding of the role of WSD in the community through the program?

7) Could you understand the method and technique used for composting in the households of the community?

8) Were you satisfied with the information you gathered from the program(i.e. from the families, shops, volunteers and WSD)?

9) Did you learn more about waste management from our visit to the paper recycle business "Jamarko"?

Results :

| Questions No. | All | | MI-Tech | | National College | |
|---|---|---|---|---|---|---|
| | Average | Variance | Average | Variance | Average | Variance |
| 5) | 0.818 | 0.823 | 0.750 | 1.300 | 0.900 | 0.322 |
| 6) | 0.773 | 1.327 | 0.833 | 1.061 | 0.700 | 1.789 |
| 7) | 1.429 | 0.757 | 1.455 | 0.472 | 1.400 | 1.156 |
| 8) | 0.619 | 1.048 | 0.818 | 1.164 | 0.400 | 0.933 |
| 9) | 1.429 | 0.457 | 1.455 | 0.473 | 1.400 | 0.489 |

The average value of students' overall satisfaction for the five questions was 1, so the average satisfaction was good. In particular, the average values of questions 7 and 9 were very high. Both these questions referred to experiences the students had in the community. The tendency was the same for MI-Tech and National College students. Comments on the most valuable aspects of the program focused mainly on the hands-on activities. An MI-Tech student stated, "I liked visiting Jamarko because it was fun to see the process of recycle papers. After that I become to think I should use recycle paper as much as possible in my daily life." National College students considered the program from a gender perspective. One student offered this opinion. "As a Nepali student the involvement of the women in waste management is very good to see as gender discrimination is big in our country." Comments such as these confirm that our program is well-positioned in meeting the needs of students from both cultures.

### 5.3.  Satisfaction about the School Environmental Program

Questions :

12) How satisfied were you with the EE activities we carried out at the school (waste separation, neighborhood research, tree planting, etc.)?

13) How successful were the environment education activities you carried out with your team of students?

14) Could you carry out your role (as leader or assistant) with your team of students?

15) Were you satisfied with the information you gathered from this program (i.e. about the school, students, teachers, neighborhood, environment issues, etc.)?

Results :

| Questions No. | All | | MI-Tech | | National College | |
|---|---|---|---|---|---|---|
| | Average | Variance | Average | Variance | Average | Variance |
| 12) | 1.190 | 0.462 | 1.182 | 0.364 | 1.200 | 0.622 |
| 13) | 1.190 | 0.462 | 1.272 | 0.618 | 1.100 | 0.322 |
| 14) | 1.048 | 1.448 | 0.636 | 2.255 | 1.500 | 0.278 |
| 15) | 0.762 | 0.790 | 0.909 | 0.691 | 0.600 | 0.933 |

Once again the average value of students' overall satisfaction for the four questions in this category was 1, so the average satisfaction was good. However, we can find some differences in the averages between MI-Tech and National College students. In particular, National College students responded with a greater degree of satisfaction to question No.14 compared with MI-Tech students. This tendency may have resulted due to the need for Nepali language when explaining some of the activities to the elementary school students. MI-Tech students may have felt frustrated after realizing the children could not understand their English in certain cases and needed National College students to translate their information into Nepali. This raises the issue of grade level for our education program at the school. Although we believe it is important to target young children, we need to consider ways to build capacities for dealing with language issues as they arise.

## 5.4. Satisfaction on Collaboration and the Future of this Study Program

Questions :

21) How satisfied were you with effort and support from teachers and staff of MI-Tech and National College?
22) How satisfied were you with your effort in preparing for this study program and your responsibilities in carrying them out?
23) How interested are you in continuing to work together on developing this program over the next six months?

Results :

| Questions No. | All | | MI-Tech | | National College | |
|---|---|---|---|---|---|---|
| | Average | Variance | Average | Variance | Average | Variance |
| 21) | 1.682 | 0.227 | 1.583 | 0.265 | 1.800 | 0.178 |
| 22) | 1.227 | 0.755 | 1.250 | 0.750 | 1.200 | 0.844 |
| 23) | 1.636 | 0.528 | 1.417 | 0.811 | 1.900 | 0.100 |

In this category, the averages of questions No. 21 and 23 were both over 1.6 representing very high points (the upper boundary being 2.0), so we can conclude the average satisfaction was excellent. In summary, from the results in this category we can conclude that students from MI-Tech benefited from the student-centered learning approach incorporated into the program. Question No. 22 also leads us to believe that students experienced a sense of personal empowerment through working together to build the program in the pre-departure phase, and through implementing the program while in Nepal. These results inform us that our approach and support are effective from the students' perspective.

In addition, the open ended question No. 24 gave us insight into the ways students believe the program should develop in the future. All students commented that communication is the most critical factor for making the program a success. One student from MI-Tech responded, "We

should work constantly with each other and at first become very good friends. After that, we can do more and more." Students from National College also commented on the need to build the program together. "I would really emphasize exchanging ideas between students so that we can plan together," commented one student. "This time the planning was mostly done by MI-Tech teachers and students, but we need to improve the planning process for next time." As the initial planning stages were completed before students were partnered, opportunities for input from National College students were limited however, with partnerships now firmly established both Nepali and Japanese students will play an equal role in the planning phase in future.

## 5.5. Satisfaction about Web Contents (for MI-Tech students)

Questions :

31) Could you gain a deeper understanding of the program aims and activities through creating digital content?
32) Do you think your IT skills have improved through this program?
33) How interested are you in continuing to work on making digital content for the Nepal program in the future?

Results :

| Questions No. | MI-Tech | |
|---|---|---|
| | Average | Variance |
| 31) | 1.083 | 0.629 |
| 32) | -0.083 | 0.811 |
| 33) | 1.500 | 0.455 |

In this program students tried to make web content each evening, including the details of daytime activities and their reactions (what they felt and learned) while participating in the program. From the results, many students showed interest in making digital content and reflected on the importance of using IT to document and disseminate the information to others. However, due to their full schedule, including responsibilities for adjusting and revising the programs each evening for the next day, there was little time in developing sufficient skills in operating the software and for making web content in the evenings, therefore, we can find a low average score for question No. 32. Even though in some cases students' skills in IT improved, they were reticent to acknowledge this fact.

## 5.6. Satisfaction about Communication (for MI-Tech students)

Questions :

35) Could you understand the basic information of the lecture given by Mr.Badan Lal Nyachhon at the school program?
36) Could you understand the basic information and instruction given at the waste management program?
37) Could you communicate with your partner and work with others without too much trouble?
38) Do you think your English has improved during this program?
39) How important do you think it is to speak English in our planning meeting at MI-Tech as a way to prepare for this program

Results :

| Questions No. | MI-Tech | |
|---|---|---|
| | Average | Variance |
| 35) | 0.000 | 2.200 |
| 36) | 0.364 | 2.455 |
| 37) | 0.417 | 2.992 |
| 38) | 0.667 | 2.242 |
| 39) | 1.833 | 0.152 |

The level of communication and skill-up in English conversation were at a 50% level, however, as mentioned above, perspectives about their own improvement was not always acknowledged. The average values of about 0.5 for questions No.36 and 37 may be regarded as program success from the perspective of English language learning. From the viewpoint of teachers and staff, student communication and motivation greatly improved over the course of the two programs. In addition, results of question No.39 inform us that students want to have more opportunities to speak English during the preparation process at MI-Tech, so we can conclude that their desire to study English has been strengthened through this program.

Finally, we asked National College students if the program can be of benefit to Nepali people in the future. In response, students were all in agreement that, if carried out in the long-term, the program can be effective in raising awareness about how to manage and protect their environment from a community level. "It is some kind of huge, huge environment revolution," responded one student. "It will surely take time but with committed efforts we can have Nepal with environmentally conscious citizens beginning with small kids."

## 6. Conclusions

Environmental programs such as ours that include collaborative and participatory components have great potential to positively impact people, their communities and their environment. Although our total time in Nepal was only 10 days, the program was regarded as effective, from the viewpoint of the various stakeholders and participants in Nepal. Students participating in the program from MI-Tech also deemed the program successful from the perspectives of building new relationships and personal empowerment. Weaving the elements of collaboration and student-centered learning into the program gave MI-Tech students opportunities to not only develop new friendships, but to expand their world vision, providing a deeper understanding of the global environment.

The program also encouraged students to take responsibility for their learning : to consider the knowledge and skills they require for participation in their global society, to recognize their strengths and build on their weaknesses. Teachers and staff from MI-tech also learned through feedback from stakeholders and student evaluations how to move the program forward. It is with these insights that we will continue to develop and strengthen our program to meet our goals in the future.

## Acknowledgments

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