

# **Students' Cultural Knowledge and Attitudes Before and After Studying Abroad: Engineering Majors in Japan**

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## **Introduction**

### ***Background***

Study abroad recently has become a key component of higher education in the United States. Developing intercultural awareness and securing national needs are two key goals of study-abroad programs. At a small college on the U.S. east coast where the present study has been undertaken, institutional leadership and support to implement study-abroad programs are evident in funding and opportunities made available for students and faculty members. Study-abroad programs in the past were limited to students studying foreign languages in the Language Studies department during the summer; however, study-abroad programs are now open to all students and faculty members regardless of academic discipline and foreign language backgrounds throughout the year. Last year this college sent 228 students to 24 different countries for language, culture, and professional studies.

One aspect of study-abroad programs yet to be addressed is outcomes of such programs. Few universities have designated methods for specifically documenting and measuring cultural understanding. In fact, assessing the purported outcomes of study-abroad programs, cultural learning in particular is “seldom done, rarely done well, and when it is done, the results are seldom used effectively (Terenzini and Upcraft, 1996: 17).” The difficulty of identifying the component of cultural learning, that is, identifying specifically what knowledge, skills, and attitudes constitutes cultural understanding makes assessment of this particular type of learning extremely difficult. A recent study (Deardorff, 2006) reveals that college administrators frequently lack specific definitions of cultural learning in the study-abroad context and are less certain as to how such learning should be formally assessed. How do we know that students have developed cultural understanding as a result of study-abroad programs? The present study is a pilot study aimed at assessing culture learning outcomes of students on a faculty-led cultural opportunity program.

### ***Attitude Change as an Outcome of Culture Learning***

While many definitions of culture learning exist, one component repeatedly mentioned is students' attitudes toward a foreign culture. Attitudes are functions of affect, behavior and cognition and are primarily the results of observational learning (Dembo, 1991). Affective learning takes place when attitudes and emotion change as a result of observation and experience. Paige, Jorstad, Siaya, Klein, and Colby (2003) state that culture learning is "a dynamic, developmental, and ongoing process which engages a learner cognitively, behaviorally, and affectively." Not only knowledge and skills but also emotions and attitudes complete cultural learning. Much earlier Oberg (1958) described an emotional roller coaster taking a learner in a foreign land from the joy of the new and exciting to a dip into culture shock, followed by a rising, exhilarating climb to the ultimate adjustment, accommodation, or assimilation as outcomes of cultural experiences.

Bennett (1993) describes cultural attitudes as a continuum running from extremes of ethnocentrism on one end to ethnorelativism on the other. Individuals can be relatively ethnocentric or relatively ethnorelative. The continuum includes six distinct stages: denial, defense, minimization, acceptance, adaptation and integration. Description of culture learning as a *process* implies that it is ongoing and may be life-long. Attitudinal changes take time for all and for some never come. It is unrealistic to expect immediate measurable changes in students' cultural attitudes as a result of short-term study-abroad programs. Some studies (e.g., Arevalo-Guerreero, 2008) indeed show no change in students' cultural attitudes in terms of Bennett's developmental stages of cultural understanding. Yet many instructors report changes in students' attitudes upon their return from study-abroad trips, including favorable attitudes toward other cultures (e.g., Armstrong, 1984).

Attitudes are generally identified as positive or negative feeling toward culture (Paige et al, 2003). Bennett's (1993) developmental stages of cultural attitudes essentially capture two polarities of positive and negative attitudes, separated by the midpoint of the continuum, negative being extreme to relative ethnocentrism and positive extreme to relative ethnorelativism. Attitudes are learned. Attitudes change initially through observation and participation. Social and interpersonal interaction with people in a foreign land provides

opportunities to promote (or discourage) changes in students' feelings about the people and country visited. Based on these premises, the present study investigates possible changes in students' attitudes as a result of short-term study abroad. The study also examines students' cultural knowledge before and after their trip.

### **Research Questions**

For a group of eight students who participated in a 3-week study-abroad program in summer 2008, the study addressed the following questions:

1. Are any changes observed in students' attitudes toward people and the country before and after the study-abroad program?
2. Are any changes observed in students' knowledge about people and the country before and after the trip?

Students' attitudes are classified as either negative or positive. Students' knowledge is characterized in terms of two areas: country or people.

### **Method**

#### ***Participants***

The students were eight Aerospace Engineering and Systems Engineering-Aerospace Track majors who had no Japanese language background and had never been to Japan. This was an interdisciplinary program between the Language Studies Department and the Aerospace Engineering Department. It was developed and organized by an instructor who holds degrees both in engineering and Japanese language/culture. The purpose of the program was to expose the participating students to the Japanese language and culture while enhancing their academic and professional interests and expertise. The program entailed visits to Japanese governmental and industry aerospace facilities as well as places of historical and cultural significance. During the semester prior to departure, the participants went to several classes on culture and language administered by the Language Studies Department. Of the eight students, one a Spanish heritage speaker, all had studied French, German or Spanish in high school. Two had never been outside the United States, and the other six had traveled to popular vacation spots (spring break or family

vacations in Europe and the Americas). Two were female students and six were male. Three were juniors and five were sophomores.

### ***Instrument***

The 42-item culture survey was developed to elicit students' opinions, thoughts, feelings, and attitudes about study-abroad programs in general. Thirteen items specifically relating to culture learning were the focus of analysis in the present study.

Examples of questions are:

1. What makes Japan unique is:
2. Good things about the Japanese people are:
3. Bad things about the Japanese people are:
4. Good things about life in Japan are:
5. Bad things about life in Japan are:

Students were asked to write or type in their answers. The same procedure was repeated twice, once before and once after the trip.

### ***Data analysis***

Data were analyzed with two separate methods. The first method plots the shifts in the direction of the students' response to the questions. The second method uses content analysis to see changes in students' cultural attitudes and knowledge.

For the first method, researchers first read students' responses to both the pre-program and post-program surveys. On a question-by-question basis, they determined whether the response to each of the target questions reflected a positive or negative attitude. When there was an equal quantity of positive and negative comments within the response to a question, or when the student's attitude was neutral or unclear, it was determined to be neutral. A response classified as positive was given a +1, a negative response a -1 and a neutral response a 0.

Besides being categorized according to attitude, each question response was also determined to be in either the 'People' or 'Country' category of knowledge. Comments focused on "the people" or specific individuals were deemed 'People' and comments regarding society, institutions, or the country were classified as 'Country.' Question responses determined to be in the People category of knowledge were assigned a P and Country a C.

The process of categorizing responses by attitude, positive or negative, and by category of knowledge, People or Country, was repeated for each of the 13 culture-focused questions on the eight students' pre- and post-surveys. The results for each question were then plotted on a chart with negative/positive (attitude) as the X-axis and Country/People (category of knowledge) as the Y-axis. Starting at the intersection of the axes, question 1 was moved to the 1 or -1 position on the X-axis and the C1 (for Country) or P1 (for People) position based on the previous determinations. Starting at that point, question 2 was plotted in the same manner. Plotting continued through question 13, which became the ending point for that student's survey. The ending point represents the net number of negative/positive and Country/People responses for that student for that survey. The process was repeated for each student's pre- and post-survey.

An example of plotting for student N's pre-survey can be seen in Figure 1. N's response to question 1 displayed a positive attitude or perception and was focused on "the people of Japan," so it was plotted at (1, P1). Question 2 was also a positive, People response, so it was plotted at (2, P2). Of N's 13 responses there were six positive with seven negative and nine People with four Country. Therefore, the endpoint for N's pre-survey was (-1, P5).

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Insert Figure 1 here.

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The next step was to plot only the endpoints with an arrow drawn from each student's pre-survey endpoint to their post-survey endpoint. This is represented in Figures 2 through 6. The structure of the questions should have led to very little difference in the endpoints. For example question 2, "Good things about Japanese people are..." should have elicited a positive, Person response.

Two researchers evaluated the responses separately for inter-rater reliability. The two results were then compared. The endpoints for all eight students' pre-surveys and for all their post-surveys were the same or varied between researchers by a maximum of one point. When endpoints differed, the values were averaged.

For the second method, content analysis was conducted to examine students' attitudes and knowledge about the Country and People of Japan. The researchers read pre- and post-survey responses, developing a list of keywords reflecting the students' attitudes, feelings, opinions and knowledge about the host country and people. Frequency of keywords appearing in students' responses were noted for each keyword. Conceptually-related keywords were then grouped into broader categories. The procedure was repeated for pre- and post-survey. To ensure the reliability of coding, the researchers discussed differences in coding until they reached agreement.

### ***Procedure***

The students completed the pre-survey in April 2008. They completed the same questionnaire as a post-survey in September 2008. Prior to completing the surveys the students were asked to read the consent form explaining the purpose of the study and to sign the consent form if agreeing to participate in the study. All agreed and signed the form.

## **Findings**

### ***Shifts in student's cultural attitudes and knowledge***

Because most of the questions were structured to elicit certain attitudinal responses (positive or negative) in a certain category of knowledge (People or Country), plotting the students' pre- and post-surveys on the positive/negative and People/Country chart should have led to few differences. However, when the actual results were plotted and arrows drawn from each student's pre-survey endpoint to their post-survey endpoint, noticeable differences emerged. See Figure 2. Students' pre-survey endpoints were not tightly bunched, rather they were scattered across three of the four possible quadrants: negative/People, positive/People, and positive/Country. Also, the direction of movement from the students' pre-survey endpoints to their post-survey endpoints (i.e. movement in a negative/People direction, positive/People

direction, etc.) was not uniform among the students. There were, however, four distinct patterns of movement that could be detected. In Figure 2 the arrows designating these patterns have been colored orange, blue, purple and green and we will discuss each pattern individually.

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Insert Figure 2 here.

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### ***Shifts in negative/Person direction***

The pre-survey responses of two students, R and Z, had endpoints in the positive/People quadrant. Both reflected attitudes that were slightly net positive, R at (1) and Z at (0.5).

For their category of knowledge, both were on the People side of the chart, with R providing responses focused highly on the people (P4.5) and Z providing slightly more people-focused responses than country-focused responses (P1).

In the post-survey both R & Z's responses focused highly on the people of the country and the people with whom they interacted, in several cases disregarding the Country-oriented structure of a survey question, resulting in endpoints of (P4.5) and (P5), respectively.

They also both moved from being slightly positive in their perceptions before the program to the negative side of the attitude scale, with R producing a post-survey endpoint of (-1.5) and Z (-2.5). This indicates that their experience in the country did not meet the somewhat positive expectations they had before the program, it may have confirmed negative preconceptions, and/or their experience introduced them to new ideas or phenomena that they viewed negatively.

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Insert Figure 3 here.

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### ***Shifts in positive direction***

The pre-survey responses of two students, N and M, had endpoints in the negative/People quadrant. Both reflected attitudes that were slightly net negative, M at (-0.5) and N at (-1).

For their category of knowledge, both were on the People side of the chart, with both providing responses focused highly on the people. M's pre-survey endpoint was (P4) and N's was (P5).

In the post-survey both M & N's responses again focused highly on the people of the country and the people with whom they interacted, resulting in endpoints of (P5) for both students.

They also both moved from being slightly negative in their perceptions before the program to the positive side of the attitude scale, with M producing a post-survey endpoint of (2) and N (3). This indicates that their experience in the country exceeded the somewhat negative expectations they had before the program, it may have dispelled negative preconceptions, and/or their experience introduced them to new ideas or phenomena that they viewed positively.

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Insert Figure 4 here.

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### ***Shifts in positive/Person direction***

The pre-survey responses of two students, A and D, had endpoints in the positive/People and positive/Country quadrants, respectively. Both reflected attitudes that were net positive, A at (3) and D at (3.5).

Though their attitudinal results were nearly identical, for their category of knowledge A was on the Country side of the chart at (C3) while D was on the People side of the chart, providing responses focused somewhat on the people at (P1.5).

The directional movement from the pre- to post-survey of A and D was nearly identical with A's post- responses focused highly on the people of the country and the people with whom they

interacted, resulting in an endpoint of (P4.5), and D's responses resulting in the nearly neutral endpoint of (C0.5).

They also both moved from being positive in their perceptions before the program to being highly positive on the attitude scale, with both producing a post-survey endpoint of (5). This indicates that their experience in the country exceeded the already positive expectations they had before the program, it may have confirmed their positive preconceptions, and/or their experience introduced them to new ideas or phenomena that they viewed positively.

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Insert Figure 5 here.

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### ***Shifts in Person direction***

The pre-survey responses of two students, S and W, had endpoints in the positive/Country and positive/People quadrants, respectively. Both reflected attitudes that were net positive, S at (3.5) and W at (2.5).

Though their attitudinal results were very close, for their category of knowledge S was on the Country side of the chart at (C1) while W was on the People side of the chart, providing responses that were highly focused on the people at (P4).

In the post-survey both S & W's responses focused highly on the people of the country and the people with whom they interacted, resulting in endpoints of (P4.5) and (P5), respectively.

They also both had negligible movement in their pre- to post- attitudes, being positive in their perceptions both before the program and after. They produced post-survey endpoints of (2.5) for S and (2) for W, which were within one point of their pre-survey endpoints. This indicates that their experience in the country for the most part met the positive expectations they had before the program, it may have largely confirmed their positive preconceptions, and/or their experience introduced them to new ideas or phenomena that they, on the whole, viewed positively.

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Insert Figure 6 here.

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### **Summary of the four patterns**

Referring back to Figure 2, it is evident that none of the students pre- to post- movement was in the direction of negative/Country. Because all students' post-surveys had an endpoint higher than (P4), with the exception of C whose pre-survey responses favored a Country-oriented category of knowledge and moved significantly in the People direction, we can safely say that all students either became significantly more personal or stayed highly Person-oriented in their category of knowledge

### ***Content analysis***

Figure 7 shows the students' attitudes and knowledge about the country of Japan before and after the trip. Before the trip, positive comments on the country of Japan included (from most often mentioned to the least with numbers in parenthesis indicating frequency): "advanced technology" (13), "tradition and culture" (13), "highly civilized and developed country" (7), "economic power" (4), "a long and old history" (3), "politics" (3), "a safe place" (2), "a proud country" (1) and "teamwork" (1). After the trip all but two categories of positive comments changed: i.e., "culture" (8) and "Japan as a developed country" (5). Remaining positive comments after the trip included "strong social values" (9), "health" (6), "clean" (6) and "protecting environment and nature" (4). Students' positive comments before the trip largely reflected book knowledge about Japan such as technology, economics, history, and politics. Their stay in Japan opened their eyes to new aspects of the country such as social values, health, and love of nature. This change may well be explained as a shift from Big *C* to small *c*, with the former characterizing the country's contribution to the development of great human civilization and the latter characterizing the conduct of daily life (Lafayette, 1997). More than one comment touched upon the pride and professionalism shown by all Japanese workers including a street sweeper.

Students' negative comments about the country before the trip included: "a busy and stressful lifestyle" (14), "social/political/military issues" (8), "education" (1), "backward rural area" (1), and "strange" (1). The students' negative comments after the trip remained largely the same as before the trip. "Social political/military issues" (13) became the most frequently mentioned negative comment followed by "lifestyle" (11). As for the negative sides of Japan, the students seemed to have confirmed that Japan has problems with political and military issues (e.g., Japan does not take an active role in the world stage) and that Japan is indeed a small, crowded country.

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Insert Figure 7 here.

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Figure 8 shows students' comments on the Japanese people before and after the trip. Before the trip, students commented positively on Japanese "attitudes toward others" (14), "work ethic" (10), "personal attributes" (8), and "lifestyle" (3). The Japanese people were regarded as kind and respectful toward others, intelligent and honorable, hard-workers with a strong sense of commitment, and family-oriented. These perceptions were confirmed after the trip. The students favorably commented on Japanese "attitudes toward work and study" (17), "attitudes toward others" (15), "personal attributes" (12), "environment" (4), and "teamwork" (1). Their comments included that the Japanese people are committed to work and study hard, they are thankful, respectful and extremely helpful, they have a sense of humor, and they care about the environment.

Students' negative comments about Japanese people before the trip included "attitudes toward others" (19), "personal attributes" (7), "political views" (3), "lifestyle" (2), and "physical attributes". While they thought that Japanese people had good personal qualities such as respectfulness and kindness, they also noted that they are not forgiving toward others. Their negative comments also included that Japanese people put up a façade and they are not open to outsiders. After the trip the most frequent negative comments concerned Japanese "personal attributes" (18), followed by "lifestyle" (6), "physical attributes" (3), and "attitudes toward others" (2). Negative comments on Japanese personal attributes increased in frequency from 7

before the trip to 18 after the trip. The students perceived that the Japanese were too polite, did not show and share emotions, and were not open and straightforward. Students' negative comments on Japanese people's attitudes toward others decreased in frequency from 19 before the trip to 2 after the trip. The welcome that Japanese people extended to the students from a foreign country may have contributed to this change. Negative comments on lifestyle of Japanese people increased after the trip, from 2 to 6. What amazes foreigners in Japan is the fact that Japanese people are always on the run; they literally run to conduct business. The students in the present study may have witnessed how busy and hectic life in Japan is. Students' negative comments on Japanese physical attributes were unexpected. Differences are first perceived visually and the students' comments on smallness and shortness were a natural process of observed differences.

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Insert Figure 8 here.

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### **Discussion**

Past studies report that benefits derived from a study-abroad program hinged on the type of contact students had during their overseas stay and their language level. Most students in the present study showed change in their cultural attitudes to a more personal and positive direction. This may be explained by the nature of this particular study-abroad program. The program was structured in a highly academic and professional manner. In Japan, the students were received with protocols almost equal to those awarded foreign dignitaries. They were welcomed warmly and the Japanese media followed them frequently. They probably saw the best parts of Japan. Some students stated in their post-survey that they wished they had studied the Japanese language more before the trip. Positive experiences of their stay in Japan generated a desire to communicate effectively with Japanese people in their own language.

Both culture specialists (e.g., Bennett, Paige, Byram) and foreign language professionals (e.g., American Council of Teaching of Foreign Languages) cite understanding cultural perspectives as a critical component to the development of cultural competency. They discuss cultural perspectives as including perceptions, values, beliefs and attitudes. Attitude as a discrete

construct is further defined as one's mental and affective dispositions, that is, one's frame of mind and outlook, charged with emotion (Moran, 2001). Attitudes are visibly manifested and explicit while perceptions, beliefs, and values are tacit. According to Moran (2001), attitudes directly influence behavior. Positive attitude in the study-abroad context will most likely prompt students to behave so as to increase contact with peoples of different cultures in the future. The participants' desire to study the Japanese language may be one such indication.

One significant implication of the findings of the present study is that attitudinal changes do take place in both positive and negative directions even after a short-term study abroad program. An even more significant finding is that such changes seem to follow direct, personal, individual contacts with people of the country. Book knowledge and classroom learning alone do not bring about such changes. Past studies also support the notion that "conduct" has a positive influence on students' attitudes toward people of other cultures (Paige et al, 2003). As an emotional and psychological construct, attitude is necessarily personal and interpersonal. What better way than meeting people in their own country to learn about them and their country? While most attitudinal changes in the present study were favorable, two students went from positive to negative on a personal level. More analysis needs to be done for these two cases. They may be a result of unrealistic, euphoric expectations for a mysterious foreign country not having been matched by cold reality. Not everything about a culture is beautiful. The beautiful and the ugly coexist in one culture. Students need to be guided before, during and after the study-abroad programs to fully internalize their experience with a foreign culture. Schultz (2007) to this effect states that students gain cultural insights mostly by guided explanation and interpretation with a help of a knowledgeable resource person.

### **Conclusion**

The researchers are currently actively involved in assessment of three different study-abroad programs all based in Japan. The project entails investigation of the effectiveness of study-abroad programs on language learning as well as culture learning. The researchers have yet to analyze language proficiency test scores, student journals, and the remaining questions on the culture survey. Particularly interesting is the possible interaction of language proficiency and culture learning. The students in the present study had neither significant Japanese language

study experience nor immediately manifested desire to study the Japanese language before they went to Japan. The researchers intend to examine interaction of language experience and culture learning by examining and comparing data. Although small in scale, the present study shows that culture learning is a complex process, involving students' emotion and attitudes, which are sometimes beyond the control of study-abroad program managers. However, one promising note is that attitudes are learned. Negative attitudes will change in a positive or constructive direction provided that students are given opportunities to observe and evaluate cultural differences in a meaningful way. Attitude is an explicit indicator of a person's tacit perceptions, beliefs, and values. Learning culture is to learn about others' perceptions, beliefs, and values behind their attitudes. Culture links outward behaviors and practices with implicit beliefs and values and attitudes are manifestations of such links.

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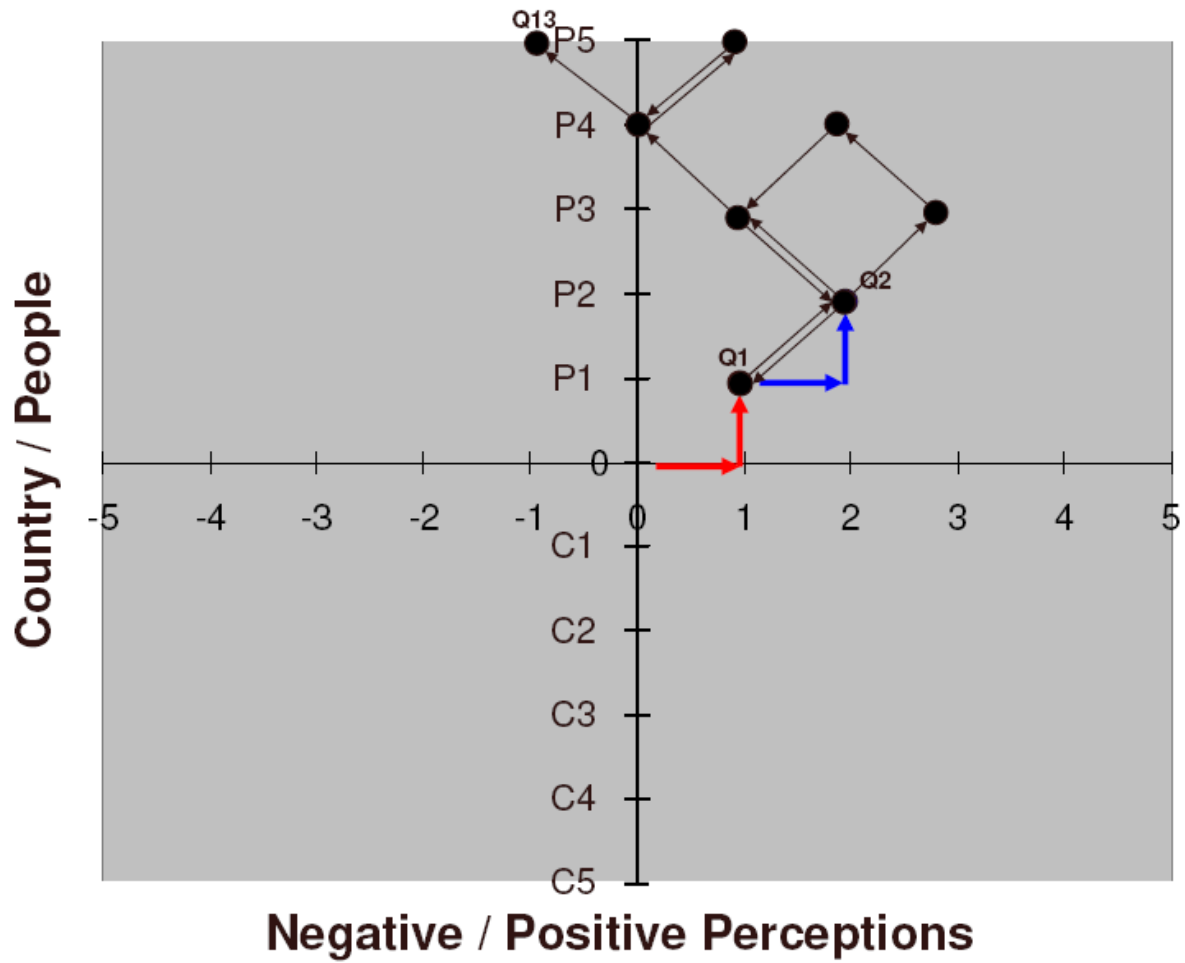


Figure 1. Example of plotting for student N's pre-survey

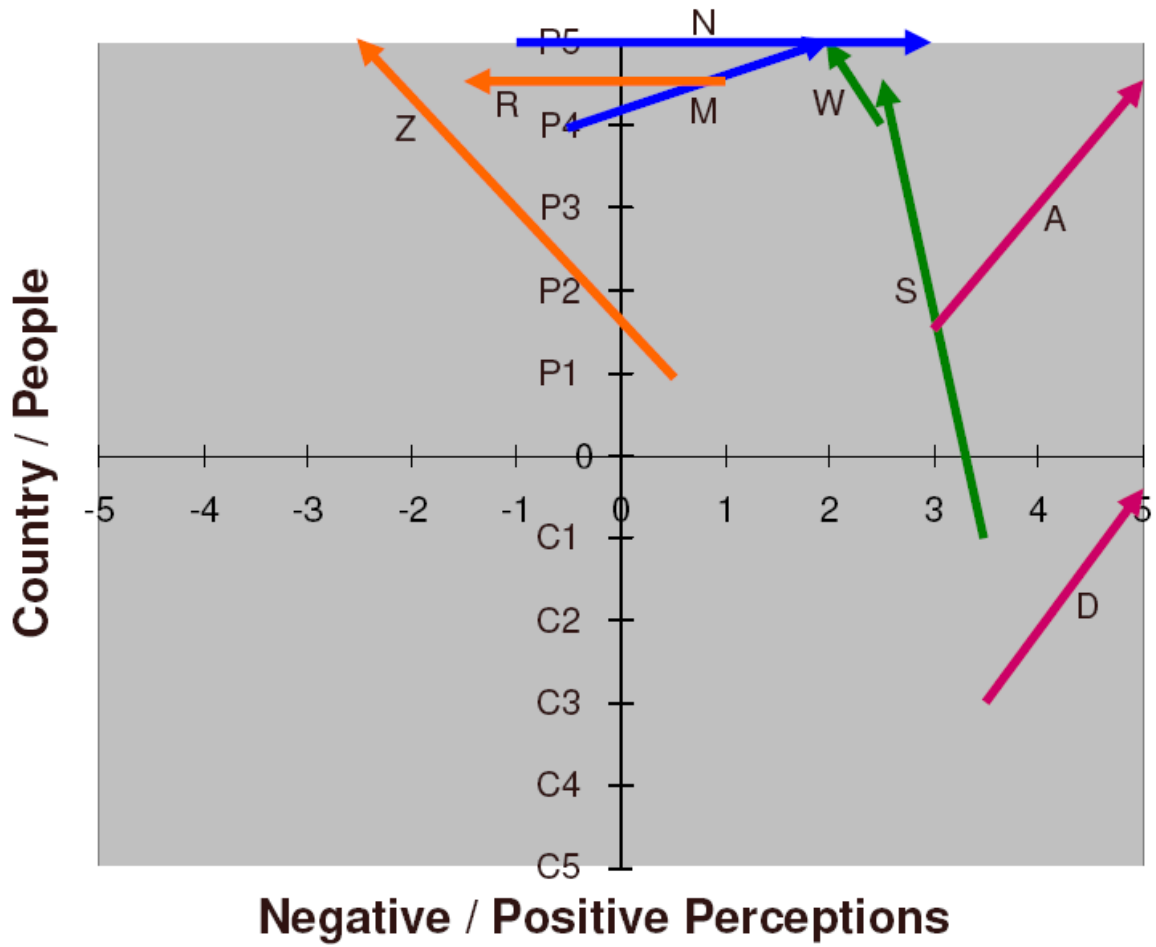


Figure 2. Shifts in student's cultural attitudes and knowledge

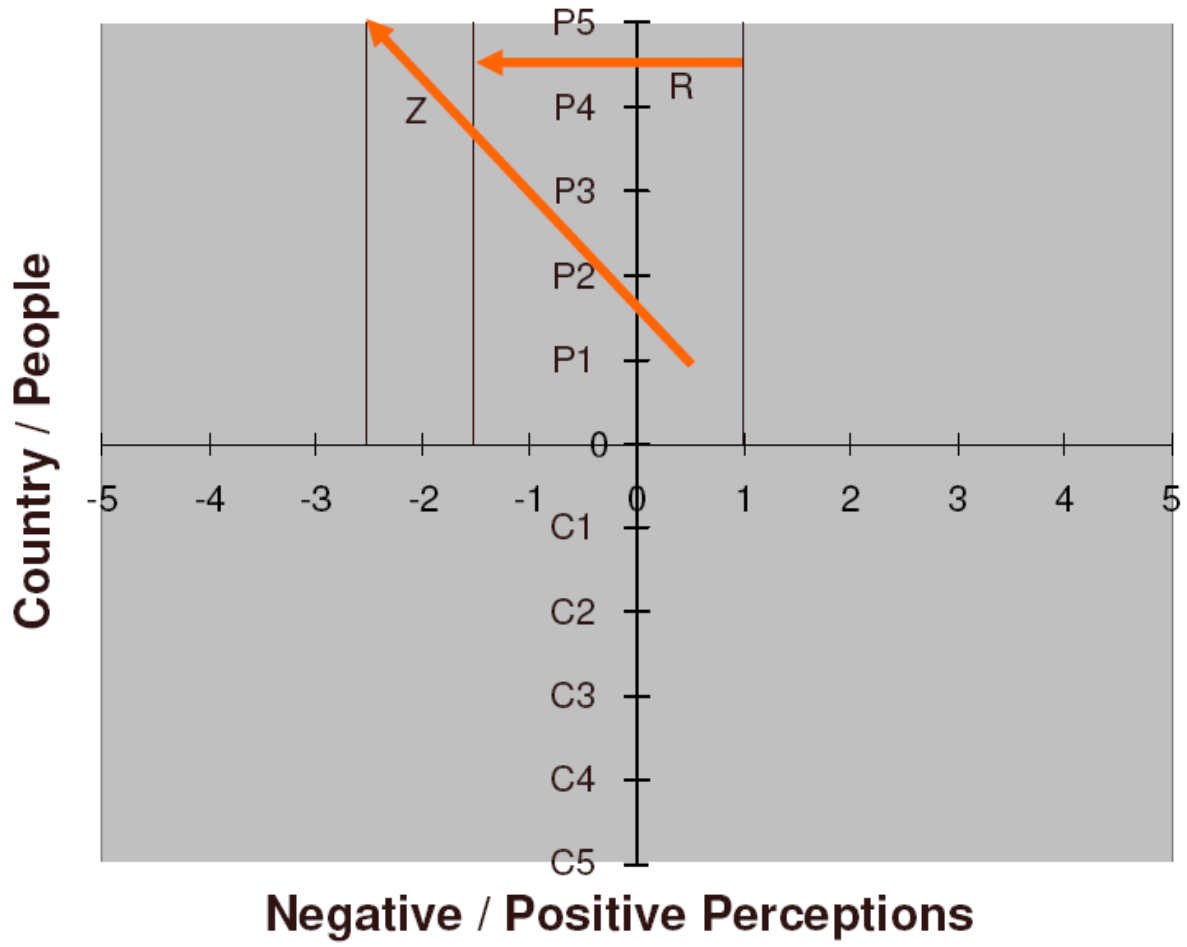


Figure 3. Shifts in negative/Person direction

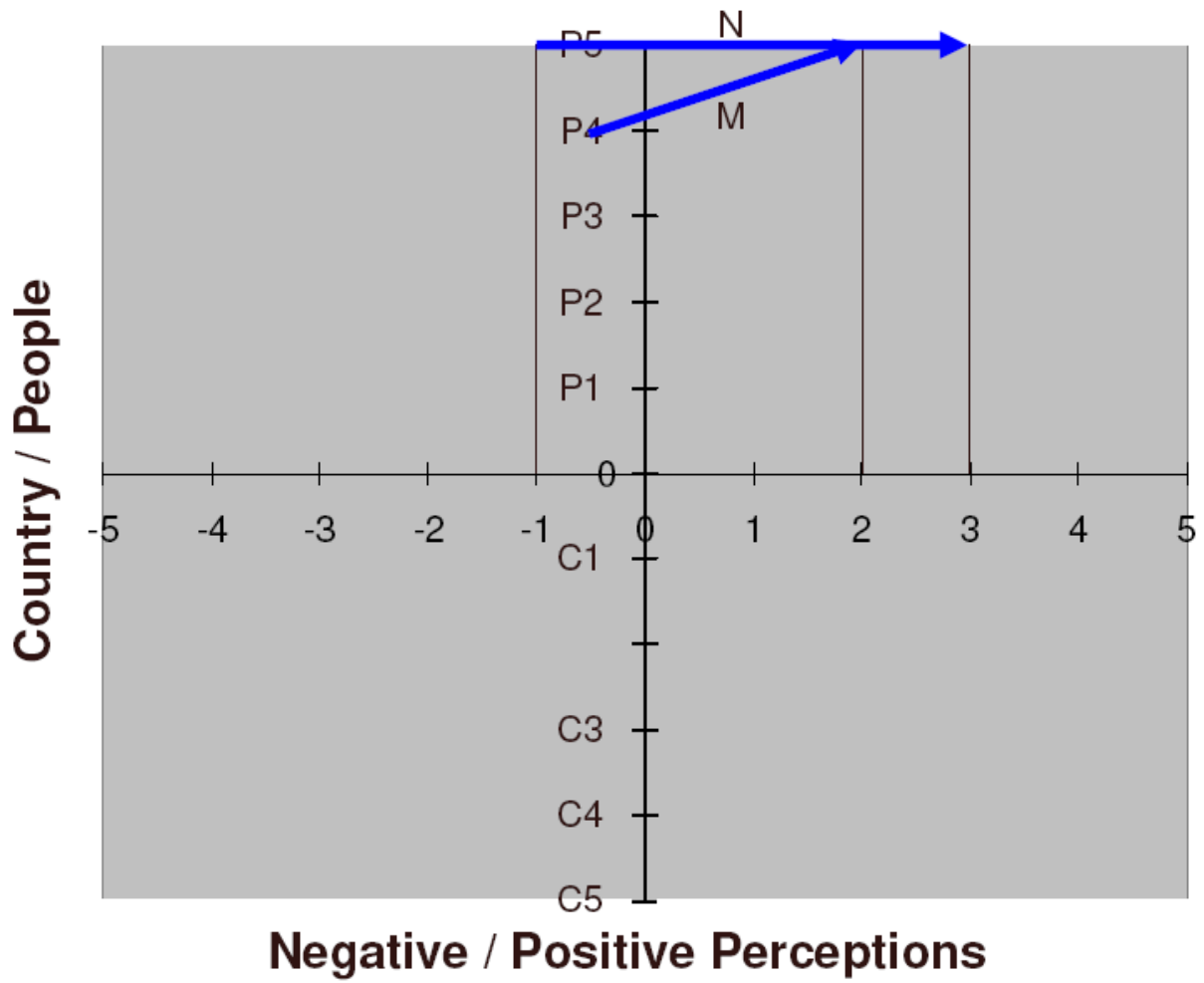


Figure 4. Shifts in positive direction

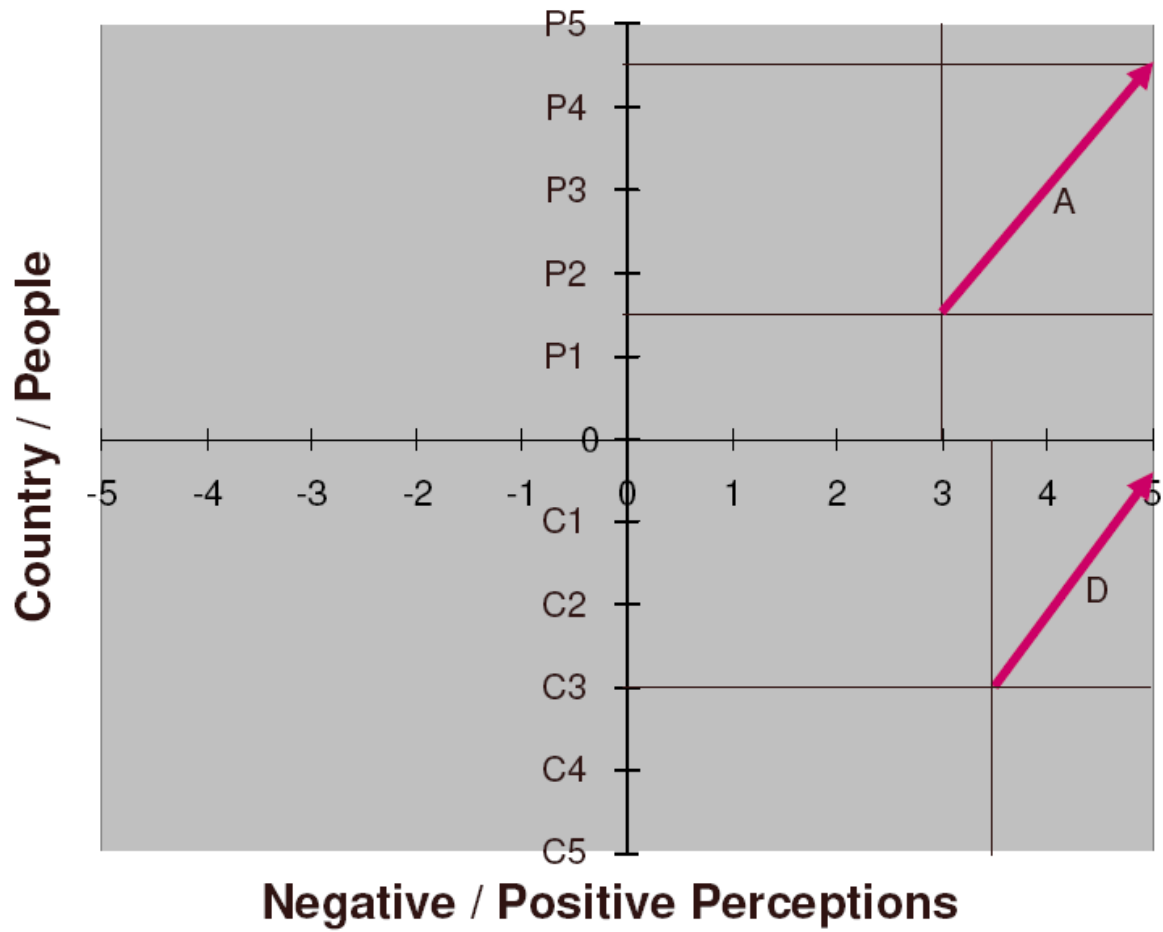


Figure 5. Shifts in positive/Person direction

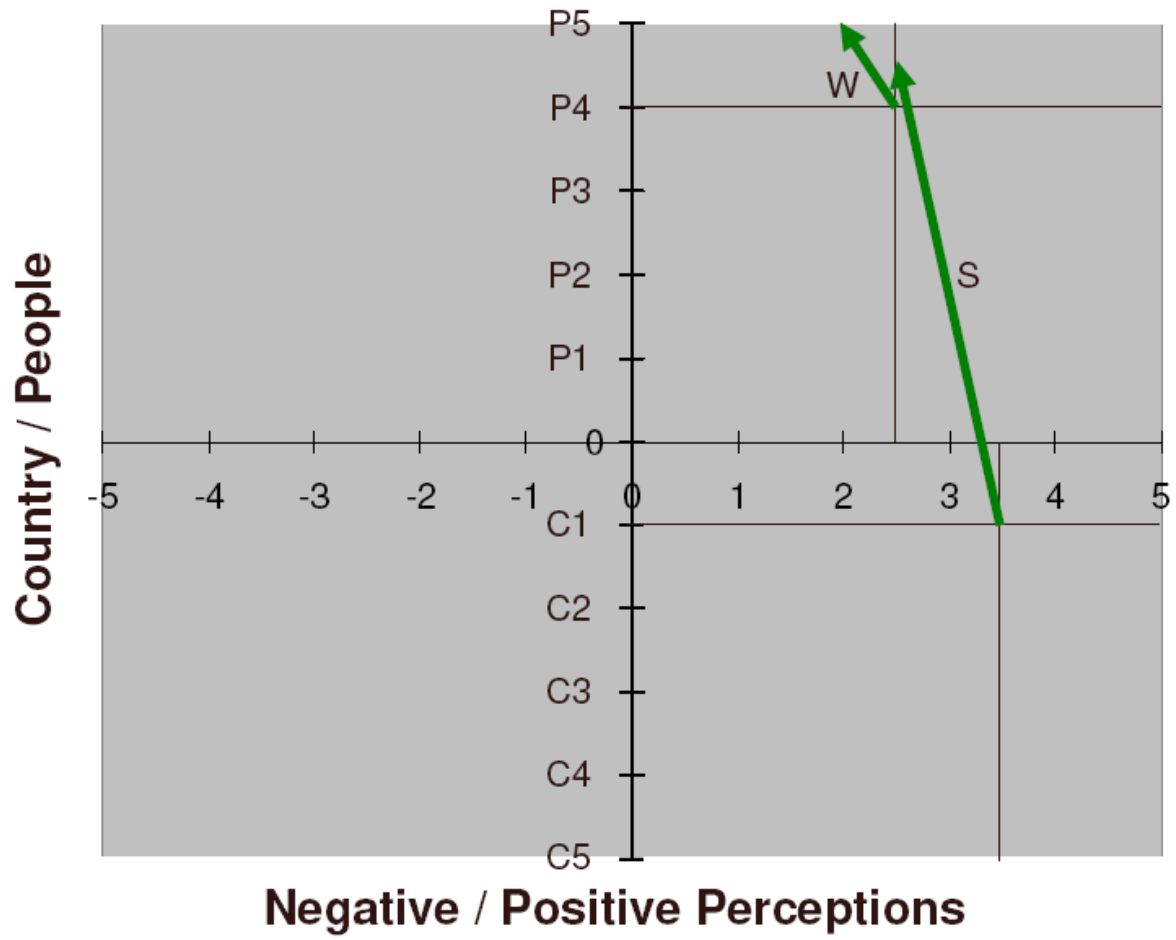
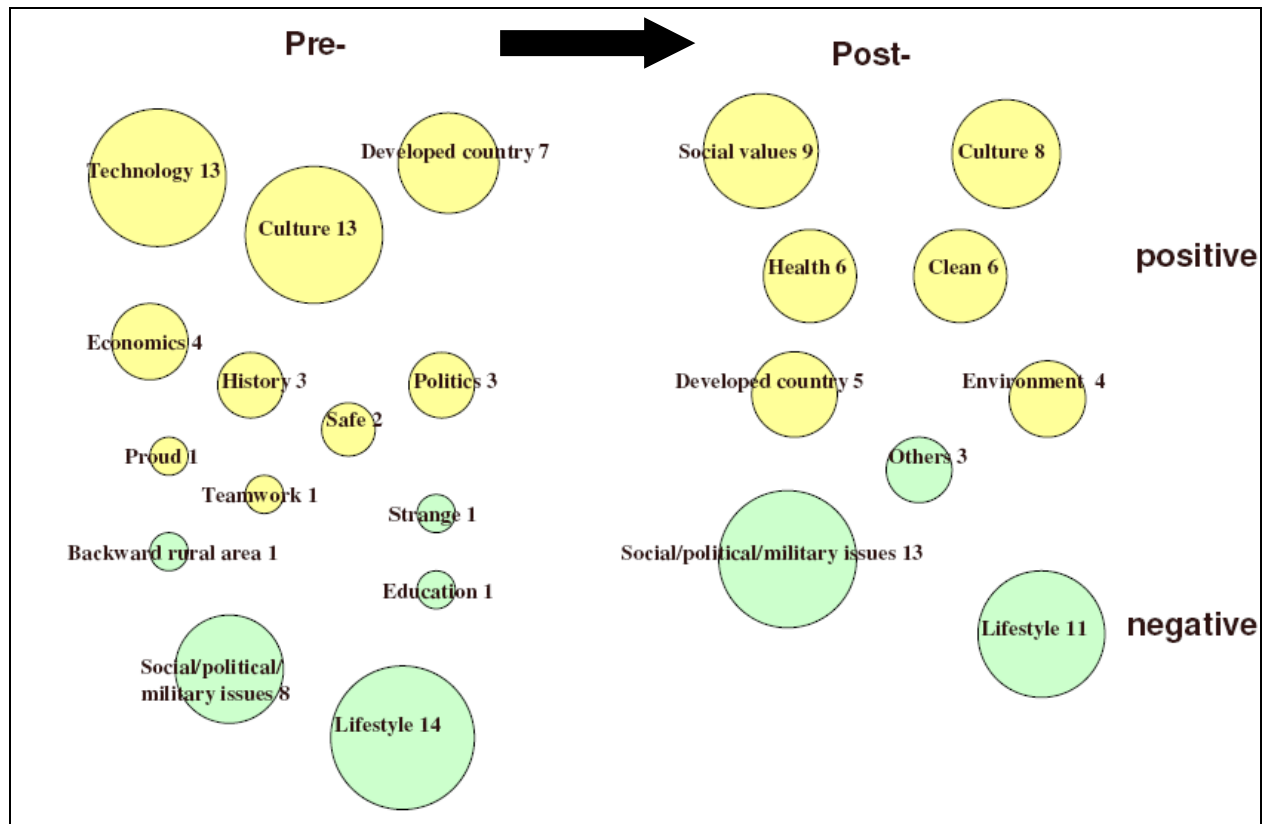
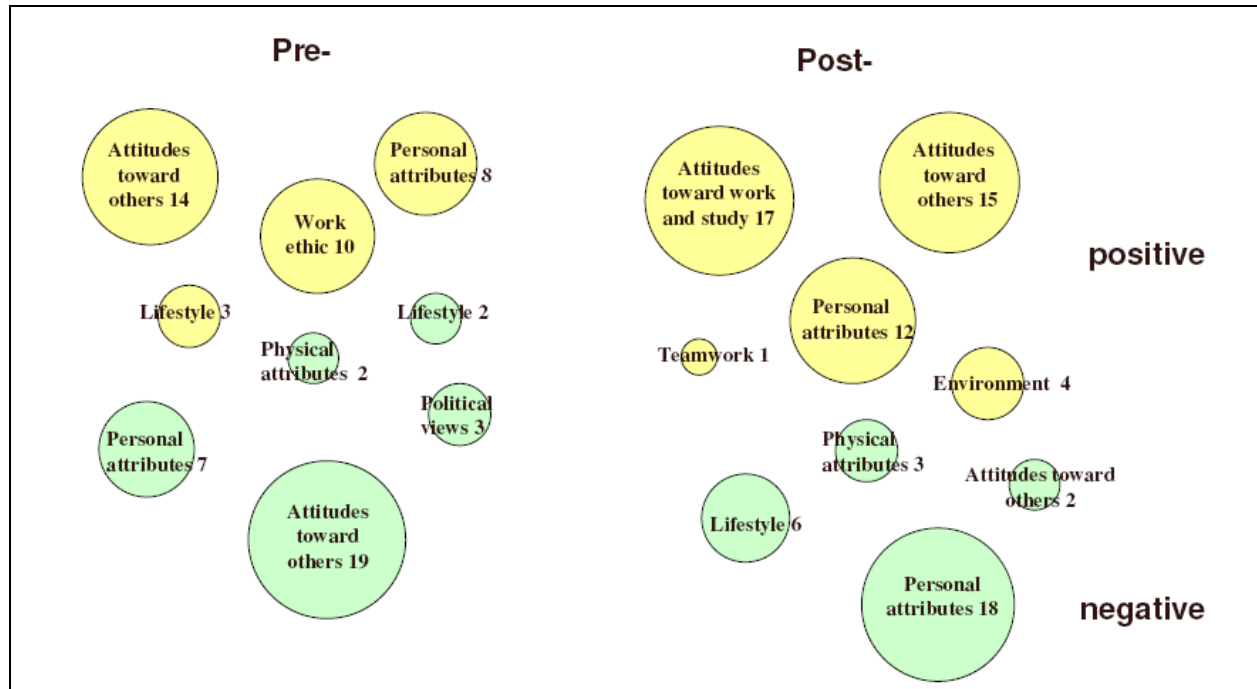


Figure 6. Shifts in Person direction



**Figure 7. Student's cultural attitudes and knowledge about Japan (Country) before and after the study-abroad program**



**Figure 8. Students' attitudes and knowledge about Japanese people before and after the study-abroad program**