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Study abroad as innovation: Applying the diffusion model to international education

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This paper uses diffusion of innovation theory as a framework for studying why United States college students who attend study abroad information sessions fail to take advantage of such educational opportunities. Surveys were administered to two groups of undergraduate students – those who studied abroad and those who did not. Students ranked their decision based on five attributes of diffusion theory, relative advantage, compatibility, complexity, trialability, and observability. The results indicated relative advantage and trialability were the most important factors in deciding to study abroad, while those choosing not to study abroad ranked complexity and compatibility as the primary reasons. Recommendations include targeting the role of study abroad adviser as a change agent to influence student study abroad decisions and educating faculty about the benefits of studying abroad.

Study abroad, diffusion of innovation theory, change agent, college students, study adviser, international education

INTRODUCTION

Over the last 70 years, study abroad has gained momentum at United States universities as a way to expand students' education beyond the campus and their everyday world. Offices were established and staff hired to specifically assist students who wanted to spend a summer, semester, or year in another country. According to Open Doors 2003, study abroad continues to attract more and more students. Despite 9/11, study abroad participation in 2002-2003 grew by 8.5 per cent over the previous year (*Open Doors 2003*, 2003).

Even with the impressive numbers of students studying abroad, many more choose not to participate. The intent of this study is to examine why students, after showing interest in studying abroad, fail to take advantage of the opportunity. Roger's diffusion of innovation theory as it pertains to the decision process will be used to identify what factors affect the decision.

In the field of science and technology research, diffusion of innovation theory has been a consistently useful model to study how new information is communicated to the public. But how can this theory be used for more social studies areas? This study explored the applicability of the diffusion model to communication processes in the international education field, placing special emphasis on study abroad itself as a kind of innovation. Although diffusion research has faced criticism, the researchers believe the basic tenets of diffusion as outlined by Rogers (2003) provides a good starting point for examining the decision process involved in study abroad. This article contains a brief review of the pros and cons of study abroad, followed by a review of the principal elements of the diffusion model, including how these principles relate to the context of

study abroad opportunities. Suggestions for international education and the use of the diffusion model in study abroad are also provided.

REVIEW OF LITERATURE

Study Abroad

As far back as the 1930s, education was seen as a key factor in affecting international understanding (Meras, 1932). Students who study abroad are able to learn more about world affairs and increase their acceptance of other countries. Increasing international responsibility can change people's attitudes that in return can affect public opinion and potentially impact foreign policy (Meras, 1932).

Study abroad offices promote study abroad by letting students know what they will gain from the experience. Students can develop new perspectives on academic subjects and real-world issues, achieve proficiency in a foreign language, experience personal growth, and develop valuable career skills (McCormack, 1966; Nash, 1976). Other benefits of study abroad have been identified as an increase in global awareness and a change in attitude (DeLoach, Saliba, Smith, and Tiemann, 2003). According to Northwestern University, "to be successful-personally, intellectually and professionally, students need to become global citizens skilled at interacting in and between multiple cultures and capable of analysing issues on a global level" (*Why study abroad?*, 2003). Through study abroad, students can build this global competence.

Study abroad influences student learning and personal development (Carsello and Creaser, 1976; Kauffmann and Kuh, 1984; Kuh, 1995; Limburg-Weber, 1999/2000). Investigations have shown that study abroad improves students' global perspective, world mindedness and cross-cultural awareness (Bakalis and Joiner, 2004; Carlson and Widaman, 1988; Douglas and Jones-Rikkers, 2001; Kitsantas, 2004; Kitsantas and Meyers, 2001; McCabe, 1994). Study abroad has also been found to make students aware of their own national identity and influence how they view people from other nationalities (Dolby, 2004; Drews and Meyer, 1996). In one particular study, students noted they had developed a deeper interest in the well-being of others, an understanding of multinational economic and cultural issues, an increased self awareness, and increased interpersonal competence (Kuh, 1995).

Students study abroad for various reasons. Some study abroad to raise their job prospects, improve their proficiency in a foreign language, or study under an expert in the academic field (Gullahorn and Gullahorn, 1958; McCormack, 1966). Others study abroad to find personal freedom, seek adventure, or gain understanding of another culture (Carsello and Creaser, 1976; Meras, 1932).

Despite the many perceived benefits of study abroad, a majority of students do not participate in study abroad programs. Students cite time and money as major factors that impact their decision. Other reasons include difficulty in transferring credits, unnecessary for their major, delayed graduation, and no knowledge of a foreign language (Carlson, Burn, Useem, and Yachimowicz, 1991; McCormack, 1966).

Are these the real reasons students choose not to participate in study abroad? Or is there some deeper reasoning behind these excuses? Many non-English speaking countries offer programs in English so students do not need knowledge of a foreign language to study abroad. By planning their study abroad properly, students can still graduate on time. Lastly, with the abundance of study abroad options available to students, virtually any major can benefit from an experience in another country.

Diffusion of Innovation Theory

Rogers (2003) defines diffusion as "the process by which an innovation is communicated through certain channels over time among members of a social system" (p.11). For the purpose of this article, study abroad is viewed as the innovation. The authors examined how study abroad is adopted or not adopted by students.

Diffusion of innovation contains six key concepts (Dearing et al., 1996). The first is 'communication channels', which is how messages are transmitted between people. The second is the 'innovation-decision process' which contains five stages (knowledge, persuasion, decision, implementation, and confirmation) that people pass through when deciding whether or not to adopt a new idea. The third is 'homophily', which is the degree to which two people interacting perceive themselves as similar. The fourth is 'attributes', which describes five characteristics of innovation and how they are positively or negatively associated with the rate of adoption. The fifth is 'adopter categories' that describe people in relation to their rate of adoption. The last is 'opinion leaders' who are people that influence others attitudes.

In this particular investigation, the authors focused on Roger's five attributes of innovation. They are 'relative advantage', 'compatibility', 'complexity', 'trialability', and 'observability'. **Relative advantage** describes the extent to which an idea is seen as better than the idea that precedes it. The more relative advantage an innovation is viewed as having, the faster its adoption rate will be. Students must recognise how study abroad will benefit them before they will adopt it. **Compatibility** is the degree to which an idea is seen as agreeing with an individual's belief system. An innovation that is perceived as fitting with the individual's values and norms will be more rapidly adopted than an innovation that is not. Students who view study abroad as an extra and outside their normal characteristics, will not view it as compatible and will choose not to study abroad. **Complexity** involves the extent the innovation is viewed as difficult to understand and use. Innovations that are more complex will take longer for people to adopt than those that are simpler to use. Students will not participate in study abroad if they see the process as too complicated. Conversely, if the process is seen as smooth and easy, more students will choose to go. **Trialability** describes the degree to which an idea can be tried without fully adopting it. People who can experiment with an innovation first have a higher rate of adoption. Students who have travelled for short periods before maybe more interested in studying abroad than those who have not. **Observability** is the amount of visibility a new idea has to people. The ability to witness the results of an innovation increases the likelihood of adoption. Students who see what others have gained from their study abroad experience may then decide they too could participate in study abroad (Rogers, 2003).

In summary, study abroad is like any other innovation, there must be perceived benefits in participating. Study abroad must be compatible with the values and norms of students. The process cannot be too complex or it may discourage adoption. Students that have travelled overseas before may be more willing to participate in longer experiences. Finally, students must be able to observe study abroad's positive aspects such as through talking with previous participants.

RESEARCH QUESTIONS

The Office of International Programs conducting this study met with over 350 students about study abroad opportunities during the 2003-2004 academic year. However, of that number only 135 students chose to study abroad. What happened to the remaining students? Why did they decide not to study abroad?

This investigation examines study abroad as an innovation and how Rogers' five attributes of innovation influence students' decisions on whether or not to study or not to study abroad. More specifically our research questions are as follows.

RQ1: Which of the five characteristics of adoptability are important to those students who have chosen to study abroad?

RQ2: Which of the five characteristics of adoptability are barriers to study abroad?

METHOD

Two different surveys were developed and sent to undergraduate students electronically through a medium-sized midwestern university computer centre. A total of 117 survey invitations were sent to students who had files in the International Programs Office indicating they had studied abroad. Surveys were also sent to 130 students who had attended an informational meeting about study abroad opportunities, but failed to take advantage of those opportunities. The survey instruments included an attitude scale and other information such as sex, whether they had travelled abroad before, size of their high school graduating class, whether family, friends, and advisers were supportive of study abroad opportunities, opinions about the cost to study abroad, and the effect outside influences such as terrorism and SARS had on their study abroad decision.

In addition, students were instructed to rank from 1 to 5 (1 being the most important and 5 being the least important) the five factors that, according to Rogers (2003), influenced adoptability. The questions on the survey administered to those who had studied (or were about to study) abroad were developed by the researchers to fit the five categories. For example, the trait of relative advantage was constructed as " I see benefits from studying abroad", compatibility was constructed as " Studying abroad fit(s) well with my plans", complexity was written as "The process for studying abroad was easy to carry out", trialability was "I have always wanted to study abroad and felt no need to try it out on a trial basis for a shorter length of time", and observability was constructed as "I talked with others who benefited from a study abroad experience."

The wording of these five attributes had to be written in the negative for those who failed to take advantage of study abroad opportunities. Relative advantage was written as "I fail to see any benefit from studying abroad", compatibility as "I do not feel that studying abroad fits well with my plans", complexity was written as "There are too many barriers or complexities involved in studying abroad", trialability was written as "There is not an opportunity to try out studying abroad for a shorter time period than a year or a semester", and observability was written as "I was not able to talk with others about the benefits of study abroad."

Second requests for responses were mailed out one week after students were invited to take the survey over the Internet. Survey responses were anonymous and students received no compensation or class credit for taking the survey. The survey was closed after three weeks.

RESULTS

As expected, students who had or would soon be studying abroad were more likely to respond to the survey, with a response of 75 out of the 117 (64%) requests e-mailed. Respondents who did not take advantage of study abroad opportunities totalled 31 out of 130 (24%) and included two respondents who were omitted from the analysis because they were mistakenly sent the study abroad version of the survey. This resulted in a rather small sample size of 29. Attitude towards study abroad was measured using a nine-point semantic differential scale (desirable to undesirable; good to bad; beneficial to harmful; wise to foolish; and favourable to unfavourable) and was found reliable (Cronbach alpha = 0.89). An average attitude measure from the attitude scale was calculated for each respondent, indicating no significant difference in general attitude

about travelling abroad between those who took advantage of the opportunity (M=8.71, SD=0.54, and those who chose not to study abroad (M=8.44, SD=0.88), t(97)=1.86, p=0.066.

Respondents were asked to indicate their academic major and what country they studied abroad in, or, for those choosing not to take advantage of study abroad opportunities, which country they would visit if given the opportunity. Numerous majors were listed for each survey, indicating that students from all university colleges had either taken part or had considered study abroad opportunities. Most of the countries listed on each survey were in Europe, with several respondents listing Mexico and Australia. In no case did students mention that they had a desire to study in a country but were told by the International Programs Office their choice was unavailable. Table 1 provides demographical information:

Table 1. Study abroad demographics

Characteristic	Study Abroad Group		Not Study Abroad Group	
	n	%	n	%
Travelled abroad before?				
Yes	39	53.4	17	58.6
No	34	46.6	12	41.4
High School Class Size				
Under 50	18	24.0	4	13.8
50-199	22	29.3	11	37.9
200-499	28	37.3	10	34.5
Over 500	7	9.4	4	13.8
Sex				
Female	44	58.7	22	72.9
Male	31	41.3	7	24.1
Family/friends support decision?				
Yes	51	68.0	18	64.3
Mixed	24	32.0	6	21.4
No	0	0.0	3	10.7
Not Sure	0	0.0	1	3.6
Academic Adviser Supportive?				
Yes	37	49.3	10	35.7
Not Sure	19	25.3	14	50.0
No	18	24.0	4	14.3
Costs				
High, worth it	37	49.3	13	46.4
Too High	N/a	N/a	4	14.3
Reasonable	31	41.3	9	32.1
Not part of my decision	6	8.0	2	7.2
Low	1	1.3	N/a	N/a
Outside influences				
Not a concern	36	48.0	20.0	71.4
Low	27	36.0	N/a	N/a
Medium	12	16.0	7.0	25.0
High, but not a factor	0	0.0	1.0	3.6
High, big factor	N/a	N/a	0.0	0.0

Note. Percentages adding up to less than 100 per cent were due to omitted questions.

For those choosing to study abroad, the ‘relative advantage’ of doing so was ranked as the primary reason by 47 out of 73 respondents (64%), indicating students who have or will travel abroad see benefits of doing so. ‘Trialibility’ ranked second, indicating they had always wanted to study abroad and felt no need to try it out on a trial basis. ‘Observability’, which was the ability to talk with others about studying abroad, was ranked third and ‘compatibility’ with plans was fourth. The fifth factor affecting the decision to study abroad was ‘complexity’, defined here as an easy process to carry out. Table 2 provides rank sum data.

Table 2. Rank sum of students studying abroad

	Number of Students							
Factors	**1**	**2**	**3**	**4**	**5**	**Rank Sum**	**Mean**	**SD**
Relative advantage	47	18	3	3	2	324	1.56	0.96
Triability	17	20	13	17	6	244	2.66	1.29
Observability	2	17	27	17	10	203	3.22	1.04
Compatibility	5	16	16	23	13	196	3.32	1.20
Complexity	2	2	14	13	42	128	4.24	1.04

Note. n = 73 for each factor

Students choosing not to take advantage of study abroad opportunities ranked ‘complexity’ as the number one reason they chose not to study abroad while their second choice was the ‘compatibility’ factor, indicating the process was either too complicated or there were too many barriers to the process. Not being able to try out the process for a shorter time period (‘trialability’), the inability to talk to others (‘observability’), and seeing no benefit to studying abroad (‘relative advantage’) were ranked third, fourth, and fifth respectively. Table 3 provides information sorted by rank sum.

Table 3. Rank Sum of Students Not Studying Abroad

	Number of Students							
Factors	**1**	**2**	**3**	**4**	**5**	**Rank Sum**	**Mean**	**SD**
Complexity	10	13	1	2	2	111	2.04	1.17
Compatibility	11	6	4	7	0	105	2.25	1.24
Trialability	3	6	9	7	3	83	3.04	1.17
Observability	2	2	13	7	4	75	3.32	1.06
Relative Advantage	2	1	1	5	19	46	4.36	1.19

Note. n = 28 for each factor

In addition to the above rank sum data, Chi Square tests were performed to determine if any relationships between the decision to study abroad and independent variables in the surveys existed. Due to the small sample size of those choosing not to take advantage of study abroad opportunities, the only Chi Square test the researchers were able to calculate was to determine whether there was a relationship between choosing to study abroad and previous foreign travel. No significant relationship was found between these two variables with Chi Square = 0.226, p=0.63 (df=1, N=102).

DISCUSSION

Those who chose to take advantage of study abroad opportunities made their decision based primarily on recognising the benefits or relative advantage that such opportunities provide. The second most frequently selected factor was ‘trialability’, indicating that students who have chosen to study abroad have always had a desire to do so, feeling no need to try out the process with a shorter time frame, such as a few weeks of a month rather than a year or semester. ‘Observability’ was ranked as the third factor, indicating an approximately equal number of respondents felt discussing study abroad programs with others was beneficial in making their decision to take part. ‘Compatibility’, defined here as “fitting well with my plans” was ranked as the fourth factor involved in making a choice to study abroad, indicating that this factor, along with the fifth choice of ‘complexity’, were not as strongly considered when making the study abroad decision. This indicates that students in the survey were not as concerned with whether the processes fitted well with their plans, nor were they as concerned with whether the processes involved with studying abroad were easy.

Survey results for those choosing not to take advantage of study abroad opportunities were also quite interesting. Students who attended an informational meeting but went no further in the

process indicated the primary factor for not moving forward with study abroad opportunities was that there were too many barriers or 'complexities' involved in the process. Closely related to this factor is that of 'compatibility'. Respondents ranked this factor second, indicating they felt study abroad programs did not fit well with their plans. In effect, the two factors of 'complexity' and 'compatibility', ranked as least important by those choosing to study abroad, were the same factors listed as the primary reason students not studying abroad gave as the reasons for not choosing to do so.

Alternatively, 'observability', ranked fourth by those choosing not to study abroad, and 'relative advantage', ranked as the last factor, was ranked as reasons three and one respectively by those choosing to study abroad. When combined with the rankings of the other factors, this indicates that the idea of studying abroad is not what is holding students back. Rather, those choosing not to take advantage of study abroad opportunities simply felt the process was too complicated and that such opportunities did not fit well with their other plans. The low ranking of 'relative advantage' and 'observability' for those not choosing to study abroad indicates these were not factors for choosing to abandon the idea of studying abroad. In effect, student respondents did not choose to forgo study abroad opportunities because nobody was available to discuss these plans with them, nor because they saw no benefit to studying abroad. Rather, they simply felt the process was too complex and not compatible with other plans that they had.

The demographical information provided in Table 1 also contains some interesting findings. For example, only four out of 28 (14%) respondents indicated the cost of study abroad as too high. While many often assume that the high cost of study abroad is deterring students from pursuing such opportunities, perhaps this statistic shows otherwise. In fact, the majority of student respondents (49% of those studying abroad and 46% of those choosing not to study abroad) indicated that although the cost was high, study abroad opportunities were worth pursuing. Similarly, outside influences such as SARS and terrorism, were not a concern for either group, with 48 per cent of the study abroad group and 71 per cent of the group not choosing study abroad as an option, indicating such outside influences were not a concern.

IMPLICATIONS

As shown by the above research, students who do not study abroad still see it as beneficial. The reasons students choose not to study abroad are not solely due to time and money. The results indicate that complicated procedures and not viewing study abroad as compatible with their plans impact students who choose not to study abroad the most. These findings of complexity and compatibility are similar to a study by Carlson et al. (1991) that examined students' motivations for studying abroad. Of the control group of students who did not study abroad, 66 per cent said they were willing to commit time and money to study abroad and only 23 per cent indicated they had little interest in studying abroad. The reasons they did not study abroad were because they found it unnecessary for their course of studies, inappropriate for their majors and feared it would delay their graduation.

Even though compatibility and complexity were ranked the lowest for students who participated in study abroad, if study abroad offices wanted to increase involvement, these areas must be addressed. Study abroad offices must show how study abroad is related to students' academic programs and how uncomplicated the process can be.

Targeting the role of the study abroad adviser as the change agent could be influential. Rogers (2003) defines the change agent, as "an individual who influences clients' innovation-decisions in a direction deemed desirable by a change agency" (p.27). Study abroad advisers, in their role as change agents, would explain to students how study abroad could benefit any major. Educating faculty on the process for study abroad would also prove beneficial. Faculty could advise students

more effectively on their class choices so that students can be better prepared on what classes they take on their home campus and what classes they take abroad so as not to delay their graduation. In addition, making faculty aware of the various programs available to students in their academic area might help make them more supportive of the idea.

Working more effectively with faculty and educating them on the benefits of study abroad is one way to make the study abroad process less complicated and more compatible for students. Study abroad offices can work with faculty and the registrar's office to facilitate the transfer credit process. Educating students on the process to study abroad can also make it less complex for them. Showing them how it will benefit their majors and future career opportunities is another option in making study abroad more compatible for students. Through these ideas, study abroad advisers can convert more students to study abroad and increase involvement.

CONCLUSION

The diffusion of innovation theory provides a new framework through which to study why some students take advantage of study abroad opportunities and other do not. The high cost of studying abroad and the threat of outside forces such as SARS and terrorism was shown to have little effect on student decisions on whether or not to study abroad. Due to the small sample size, further research should be conducted on why students who showed an initial interest in study abroad did not participate. By learning more about these factors, study abroad offices can better address these concerns and see more students choosing to study abroad.

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