



Impact of Study Abroad – 10 Years of Trips to Germany with Students

Dr. Henry W. Kraebber, Purdue University, West Lafayette

Professor Kraebber joined Purdue University and the faculty in Mechanical Engineering Technology in 1989. He began to develop contacts with Universities in Germany in 1990 and first traveled to Germany with 10 students in 2004. Since 2004 150 students in 11 groups have traveled with him. He has 15 years of industrial experience in electronics, consumer products and food product manufacturing. His areas of interest include international collaboration, production systems and lean operations, and quality systems.

Dr. E. Shirl Donaldson, Purdue University, West Lafayette

E. Shirl Donaldson received a doctorate of philosophy in Industrial Technology from Purdue University December of 2012 and is currently a post-doctoral fellow researching entrepreneurship, innovation and diversity. A strong advocate of inclusionary practices in education and business, she encourages students to work to their strengths while constantly expanding their skill sets and prospective of life. She has mentored several graduate and undergraduate students in areas of progression and transition from undergraduate to graduate studies, research, and study abroad. Her research agenda and commitment to intellectual growth is driven by her life experience. While completing her Master's degree and for several years after, she worked in a family owned manufacturing firm. As a doctoral student, Shirl was recognized as an AGEP scholar and received the Bilsland Fellowship. Outstandingly, she collaborated in the creation of an innovation course and taught the initial offering Today Dr. Donaldson's research interests include entrepreneurship, innovation, technology management, and diversity in STEM (science, technology, engineering, and mathematics) fields of study. She examines how academic and industrial environments enable effective learning, discovery, and realization of new and transferred knowledge

Ms. Katie Mae Hackney

Impact of Study Abroad; 10 Years of Trips to Germany with Students

Henry W. Kraebber, Purdue University School of Engineering Technology

E. Shirl Donaldson, Purdue University College of Technology

Katie Hackney, Purdue University College of Technology

ABSTRACT

140 Purdue students have traveled to Germany to tour industrial, cultural and historic and educational sites in groups of 12 to 15 led by a professor in Mechanical Engineering Technology between 2004 and 2013. Many of the study abroad participants graduated and joined companies that were looking for applicants with international experience; individuals who can work effectively with their counterparts all over the world. This paper presents the findings of a survey of participants in short-term (week long) study abroad trips to Germany. The survey captured demographic data on these participants and presented questions to capture insight into the value of this experience and the impact of the study abroad experience on their careers.

The Germany Trip Alumni Facebook Group and a list of email addresses provided survey access to 105 participants. The impact survey was distributed electronically to participants with active email or Facebook addresses. 74 responses were received (52% of all participants, 70% of those contacted). 73 participants (98%) agree or strongly agree that they value their investment in the study abroad opportunity. 72 participants agree or strongly agree that they want to return to Germany. The responses include extensive comments on the key concepts learned and how they benefited from the study abroad experience. Short-term study abroad trips are valuable learning experiences that provide positive impact to the participants beyond graduation.

Key Words: problem solving, global economy, culture, career, technology, engineering

Background

A Google search of the phrase “global economy” returns over 767 million results. With that being said, the global economy is impacting all of us. More of the products we buy include materials, subassemblies and finished products being made outside of the United States. Competition from foreign markets is forcing companies in the United States to change the way they design and produce products. Problem solving, communications and production in an international setting is a topic area that is becoming more important to manufacturing companies operating in the United States and overseas. ^[1] A crucial factor in our long-term economic survival will be our ability to work internationally. ^[2]

Companies in the U.S. are feeling the effects of the changing global economy. More and more

operations are working across different cultures and time zones to design and manufacture products. International experiences, skills and knowledge have tangible value to our students and the companies that employ them. One critical element of global manufacturing is an understanding of the culture and people involved. Applications of computers and technologies can help companies compete; however, technology does not eliminate cultural differences and communication problems. ^[3] Many of the study abroad participants will graduate and join companies looking for applicants with international experience; individuals who can work effectively with their counterparts all over the world. Is an international experience becoming more of a necessity versus an option for today's students and the next generation of employees?

The spring trip experiment

A successful study abroad trip to Germany with 10 students was completed in June 2004. The second trip with students was planned for March of 2005, during the Purdue spring vacation period. The spring schedule provided lower off-season airfare and hotel expenses. Also, the spring schedule gained interest from more students due to the fact that overseas travel during the spring semester kept options for summer employment open.

Information about the March 2005 spring trip was sent out to students during the start of the 2004 fall semester. Several students expressed interest and asked for more details on the cost, timing and course credit. The cost including airfare and expenses was estimated to be \$2,000. Students were asked to pay a \$200 deposit to hold their place. Commitments began to come in at the end of September. By the first week of December, 12 students were confirmed as participants and plane tickets were assigned.

Developing interest and sustainability

Interest in this spring trip to Germany continued to grow as the second spring trip was planned for March 2006. The second spring trip was fully committed by students early in November 2005. The available spaces for these study abroad trips are typically reserved by the end of the first week in October. The size of the student group has grown from the original 12, to a maximum of 17 in the spring of 2013.

The spring trip to Germany developed into a sustainable operation. Planning and recruiting activities are ongoing throughout the year. The trip is promoted through the Purdue Study Abroad website, Study Abroad Fairs and presentations to classes and student groups. The best promotion comes from the student participants talking with their friends and encouraging them to participate. Although this course is listed as an MET offering and taught by an MET professor, students from every department in the college of Technology are attracted to the course and welcomed to enroll.

New students in technology and engineering come to campus with high expectations. International travel and study abroad is typically not something that students have given much thought. Students often need time to think about making a significant commitment to do a study abroad, even if only for one week. The additional expense for these week-long trips to Germany is about \$2,200, not a trivial additional expense for most students. Many students know that going overseas is expensive and the thought of that extra expense dissuades further consideration. Over time, students often make a decision to invest in a study abroad event as part of their Purdue experience. It may take 1 to 2 years after the initial exposure to a study abroad opportunity before a student is ready to make a commitment and invest in a trip. Comparatively speaking, \$2,200 for nine days is a small investment for an international experience, when a summer or semester long commitment is considered. A nine-day excursion exposes the student to a new world without limiting options for summer employment or extending the time to degree completion.

Minority student opportunities

Education costs have grown rapidly during the past 10 years. According to Purdue University's Office of Budget and Fiscal Planning, during the 2003-2004 school year tuition was \$5,860 for in state residents and \$17,640 for out of state students. During the 2013-2014 school year, in state tuition was \$9,992 and out of state students paid \$28,794. ^[4] This shows 71% increase for in state students and a 63% increase for out of state students. These statistics on student debt for education are scary. An average loan debt of more than \$30 thousand dollars is not uncommon. Travel overseas is often out of the question for many students. The need for minority student funding opportunities is significant too. Support for interested and qualified minority students began from the Louis Stokes Alliance for Minority Students (LSAMP) with sponsorship for one student in 2012 and two in 2013.

Expanding student impact

The initial trips with students were 8 days long during the university's spring vacation period for one credit hour. Before these initial trips began, students had limited opportunities to get to know each other. Traveling and living together in a foreign country exposes many issues, possible problems and challenges. Pre-trip preparation with students was limited, and this led to some confusion and misunderstanding of the expectations of student participants. In 2009, the trip became part of a 3-credit course to provide more preparation and bonding time for the student participants before the trip, and the trip was expanded to 9 days. Preparation for the trip is critical. Each cohort has contained at least one student that has never flown on an airplane before or did not possess a passport until this course required they do so.

The expanded course design provides added value to the student participants. Preparations increase the student understanding of German culture and the places and events that they will experience overseas. Students learn basics of the German language, develop presentations on German culture, and review details of the upcoming trip. Elements include: flight time, schedule while abroad and what to pack. Students forge connections and relationships that continue after the trip is over and everyone returns to the university.

Class sessions were held after returning from Germany to debrief and complete reflections on what was observed and learned. Photographs are shared as part of the documentation. Student ideas about the mechanics and logistics of the journey are gathered during these sessions to improve the expedition for the next year. The combination class/trip provides a comprehensive student experience. Students are enriched academically, professionally, culturally, and socially.

2013 Impact Survey

During the ten years since the first trip, 140 students have participated in short term study abroad trips to Germany. The spring trips have grown in content and participation. The questions of the long term impact of the short term study abroad on the participants were proposed as a graduate student project for the spring and summer of 2013.

Survey Methods

A research survey was conducted to gather information about the impact of past on the 140 students who have participated in week-long Germany study abroad trips through June of 2013. A survey was developed and approval for this survey was granted by the Purdue office of Human Resource Protection and created in online form using *Qualtrics Survey* software available through the Purdue University Information Technology group (ITAP). The survey featured demographic and open and closed end questions. Through the use of Purdue's Alumni Network and a "Germany Trip Alumni" Facebook group, active addresses were found for 105 trip participants. This group was contacted to complete the survey.

Results/Findings

Seventy-four student participants returned a completed survey. Of the seventy-four students, 50 males and 24 females responded. A large majority, 74% were either juniors or seniors when they traveled to Germany. The racial mix of the respondents was 70% Caucasian, 12% Asian, 8% Black and 4% Hispanic. 89% were US Citizens.

Participants reported their first job title after leaving Purdue and the diversity of majors surfaced. Job titles included: engineers, pilots, manager trainees, human resources associates, and

educators. 31 (45%) reported a first job as some type of engineer. Placement rate of participants—all employed full time or professional internships was higher than the college average. Although the placement of MET graduates has been historically strong at 84%, there was an uptick in May 2013 to 94%.

Seventy-three students responded to the Likert-scale portion of the survey. Students were asked to what extent they agreed with different questions. Results conveyed very positive thoughts and feelings about the study abroad opportunity. The following percentages are based upon those students who either strongly agreed or agreed with the questions. 90% believed they formed relationships with others as a result of their trip. 84% believed the experience of traveling to Germany helped them in their future work endeavors. Only 10% of the students had returned to Germany after visiting with a Purdue group. 60% of the participants had traveled to other destinations since visiting Germany. All but one student believed they would like to return to Germany. 100 percent of the responders indicated that they valued their investment in the study abroad opportunity in Germany.

Three questions provided the participants an opportunity to comment in an open text format. 86% commented on three concepts learned through visiting Germany that stay with them now. These comments were reviewed and grouped into eleven subcategories see Table 1. below:

Reported concept learned	Sorted responses	percent
Cultural differences	33	52%
German manufacturing methods	30	47%
Technology and innovation	20	31%
Living and working - Transportation	18	28%
Time management - work ethic	14	22%
Relationships and communication	14	22%

Table 1. Sorted responses to open-ended question on concepts learned that stay with the participants

The second open-ended question asked participants to report what was most enjoyable for them during the visit. 88% of the participants responded. One of the most common threads was experiencing a different culture that was new, interesting and exciting. Many commented on the value of the tours of industrial and historic sites and the insights they learned that have stayed with them as they look back. They reported that experiences of the industrial visits helped them deal with issues in their jobs that deal with national and international companies and management teams.

Several participants commented on the special opportunity that the trip facilitated. Opportunities to visit and interact with members of world-class companies like KUKA and BMW do not come along often in the regular academic environment. **A significant benefit was found when interviewing for jobs and internships.** The international experience provided thought-provoking conversation starters in interview situations. Insights into the German production methods and work place designs helped students differentiate themselves from other candidates. Several students commented that their experience on the trip helped them in their careers and with advancement opportunities to management level positions. An MET major reported being surprised by the number of interviews he was invited to after traveling to Germany. He noted that a significant portion of the actual interview was focused on his international experience and lessons learned. A second participant, majoring in IT, from a subsequent trip reported a similar experience. She stated that she was offered an interview for a summer internship during a spring career fair before actually traveling based on her plans and commitment to study abroad. This evidence of the value placed on international learning experiences by employers.

Conclusions and remarks

During the first several years of the week-long visit to Germany available spaces on the trips were allocated first to students in their third or fourth year of study. In the most recent years more participants were students in their first or second year of study. First and second year students have more opportunity for additional travel abroad to other countries or to participate in other study abroad activities during their undergraduate careers. This early international experience is often leveraged in pursuit of intern positions.

Traveling with students during a week of intensive activities enhanced the connection of participants to the faculty leaders. Great learning can take place when students and faculty are immersed in a different culture in a new location as a special mentoring connection develops outside the traditional classroom. The classroom was expanded to a small bed and breakfast hotel where the class and faculty resided together for 9 days. Faculty members, in an effort to facilitate new relationships between unlikely pairs, assigned roommates. The usual cliques were avoided and new friendships were formed.

The entire unit met every morning for breakfast and to review the daily agenda. If changes were necessary, the rationale was explained, i.e. weather concerns or meeting time adjustments initiated by a host. Students rotated being team leaders when it was necessary to divide into smaller groups for flexibility or practicality of travel. This practice of small team leadership gave each student an enhanced working knowledge of the public transportation system, rather than simply following the pack. It was an additional opportunity to manage schedules, handle foreign currency and lead team members. Colleagues pursuing common interests often formed the smaller groups. The interests may have been seeing a particular historical landmark, a desire

to visit a certain restaurant or a need to get back to the hotel for a nap. Managing several factors for a common goal helped build personal bonds between the students and the faculty leaders. There was an unspoken sentiment of trust between the group members that allowed each student to explore the new surroundings without apprehension of the unknown. Upon leaving the hotel each morning, the learning environment was expanded again.

Overall, the responses demonstrate an overwhelming recognition of the value of the student's investment in study abroad for the short time of one week. The week-long study abroad helped create student interest in future travel overseas to other destinations.

References

1. Trooboff, S., VandeBerg, M. & Rayman, J. (2007). Employer Attitudes toward Study Abroad. *Frontiers: The Interdisciplinary Journal of Study Abroad*. Winter 2007-2008.
2. Redden, E. (2014). Generation Study Abroad. *Inside Higher Ed*. Retrieved from <http://www.insidehighered.com/news/2014/03/03/new-initiative-aims-double-number-americans-studying-abroad#ixzz2yzSAB9bN>
3. Institute of International Education. (2014). Every student should have the opportunity to study abroad. *Open Doors Report on International Educational Exchange*.
4. Purdue trustees approve frozen tuition and fee cuts. (2013, May 22). *Purdue News*. Retrieved from <http://www.purdue.edu/newsroom/releases/2013/Q2/purdue-trustees-approve-frozen-tuition-and-fee-cuts.html>