Student International Collaborative Projects

A Decade of Experience and Success

Panelists

- Cary Laxer, Professor and Head of Computer Science and Software Engineering, Rose-Hulman Institute of Technology, Terre Haute, Indiana, U.S.A.

- Luchen Li, Associate Dean for Global Programs, Rose-Hulman Institute of Technology, Terre Haute, Indiana, U.S.A.

- Anne-Kathrin Peters, Ph.D. Student, Department of Information Technology, Uppsala University, Uppsala, Sweden

Outline of presentation

- Cary Laxer will discuss the history and the mechanics of the collaboration
- Anne-Kathrin Peters will discuss how the students are assessed
- Luchen Li will discuss the importance of international student project work
- Discussion time

History and Mechanics

Cary Laxer

How it all began

- It's all about the people and the contacts you have
- In 2004, Mats Daniels, a member of the faculty at Uppsala University, contacts Dan Moore, Associate Dean of the Faculty at Rose-Hulman, about a possible collaboration on a project his students are doing
- Dan decides the project would best be housed in the Computer Science and Software Engineering department so forwards the details to Cary Laxer
- Cary solicits students to work on the project
- Four are chosen

That first year

- At Uppsala University, the project is housed in the course IT in Society
- At Rose-Hulman, the project is housed in an independent study course
- Students worked remotely; Rose-Hulman students were their own team
- At the end of the project, Rose-Hulman students and faculty traveled to Uppsala University to present the project to an IEEE Education Society Nordic Region conference and to the client
- Under debriefing, students enjoyed the project and the collaboration
- When asked if they thought a trip at the beginning of the project would have helped, they all said no

Another try

- After reviewing student feedback, Mats and Cary agree to try the collaboration again the following fall

- A solicitation for interested students is once again sent out, and four students are chosen to work on the project (two are repeats from the previous year)

- The course at Rose-Hulman is now a Special Topics in Computer Science course, titled "Computing and Society"

- Some teams have students from both schools

- Students got to work on an EU project, and were invited to present their work at the closing workshop for the project in Barcelona

Evolving the course

- 2006 – 10 students at Rose-Hulman; two trips to Sweden are made, one at the beginning and one at the end

- 2007 – Course gets a devoted course number and name at Rose-Hulman – CSSE 241, Computing in a Global Society; Cary Laxer spends part of his sabbatical at Uppsala University

- 2008 – Reflections are added as a means for students to think about their experiences and inform the faculty

- 2009 – Helena Bernáld, an expert on cross-cultural communications, is brought to Uppsala for seminars to the students while the Rose-Hulman team visits in the fall; Rose-Hulman students read "The World is Flat"

- 2011 – Personal learning contracts, based on the nine graduate attributes defined by Curtin University, are written

Involve social and cultural aspects

- Important for the students to learn something about the country they are working with
- Travel planned to leave U.S. on Friday night, arrive in Sweden on Saturday afternoon, and have Sunday to do some local sightseeing with some of the Uppsala University students
- Have a full day for sightseeing in Stockholm
- Evening social activities some nights allow students to build the team and to get to know each other

Student Assessment
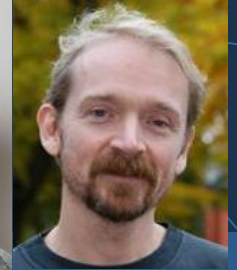# & the Client Perspective

Anne-Kathrin Peters

- Uppsala Computing Education Research

- Research on Education in Computer Science, Engineering

Outline

1. Assignment Overview
2. Scaffolding
3. The Client Perspective

Assessment Overview

Nr	Assignment	Due
1	Reflection on project, intercultural collaboration, learning	Sept 20
2	Personal learning contract → individual meetings	Sept 27
3	Peer review assignment: 1) Write part of report 2) Review teammate's report 3) Reflect on teammate's review	1) Oct 21 2) Oct 29 3) Nov 4
4	Report on project results: 1) Mid-project presentation and report 2) Final project presentation and report	1) Nov 14 2) Dec 12
5	Final reflections → individual meetings	Dec 20th

Scaffolding: Level of Reflections

Level	Explanation
Descriptive Writing	Simple description of experiences, non-reflective
Descriptive Reflection	Attempts to provide reasons for learning experiences based upon quasi-reflective personal judgements
Dialogic Reflection	Personal discourse to explore possible reasons for observed outcomes
Critical Reflection	Elaboration of reasons for personal learning decisions and experiences, taking into account psychological and pedagogical factors

Scaffolding: Competences

1. Apply discipline knowledge understand its theoretical underpinnings, and ways of thinking; extend the boundaries of knowledge through research.

2. Thinking skills Apply logical and rational processes to analyse the components of an issue; think creatively to generate innovative solutions.

3. Information skills Decide what information is needed and where it might be found using appropriate technologies; make valid judgements and synthesise information from a range of sources.

4. Communication skills Communicate in ways appropriate to the discipline, audience and purpose.

5. Technology skills Use appropriate technologies recognising their advantages and limitations.

6. Learning how to learn Use a range of learning strategies; take responsibility for one's own learning and development; sustain intellectual curiosity; know how to continue to learn as a graduate.

7. International perspective Think globally and consider issues from a variety of perspectives; apply international standards and practices within a discipline or professional area.

8. Cultural understanding Respect individual human rights; recognise the importance of cultural diversity particularly the perspective of Indigenous Australians; value diversity of language.

9. Professional skills Work independently and in teams; demonstrate leadership, professional behaviour and ethical practices.

Scaffolding: Review Criteria

Aspects	What to consider
Organization	Relevant sections, sub-headings, order easy to follow?
Citations	Adequate use?, reference list complete?
Content	Adequate summary of relevant aspects?, appropriate material covered?, contribution of thought?
Overall impression	What was good, what could be improved?

The Client

- Uppsala County Council
- Project:
  - Smart Care
  - SUSTAINS
  - …

Benefits for the Client

- Experiences on how to do such projects, improved collaboration with university
- Curiosity, critical questions of students → questioning, explanations
- Reports
  - 2 reports used for EU projects
  - provide ideas, information
- Contacts, Network → Reputation

The Importance of International Student Projects

Luchen Li

Learning continues beyond the traditional classroom

- ◆ Observation of faculty and student engagement in global learning

- ◆ Values of global projects for students in STEM disciplines

- ◆ Challenges for students in STEM vs. those for liberal arts and humanities

- ◆ Faculty-led "communications"

- **Enrich curricular offering with international components**

- **Create opportunities for students to engage in cross-cultural collaborations**

- **"Hybrid" communication models**

- **Assist faculty with curriculum innovation**

- **Connect RH faculty to global counterparts for collaborative research**

- **Establish dual-degree programs to build classrooms across cultures and borders**

- **Place global internships for students**

- **Help faculty with international collaborative research**

- **Bring in international scholars to RH campus**

- **RH Global Experience Fellowship for students**