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The INSITE Project: Engaging Students in International Team Collaborations to Create a Web 2.0 Tool Repository

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There is a growing need to engage our undergraduate students in international, cross-cultural experiences. In an effort to engage every education student in an international experience, we explored the idea of using a shared wiki to enable students in a required, core course to interact with international peers. In this paper, we describe the evolution of this project including the initial design decisions made, the participants and context, the constraints encountered, as well as the subsequent design decisions. This design case focuses on the experience from the perspective of the American students and project participants. We end with a reflection on insights we have gleaned from the process.

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Over the past several years, our expectations for what students need to gain from the typical college classroom experience have expanded rapidly beyond normal course content. There is an increasing need for students to become better problem solvers, to work more collaboratively, and to view their world from a more global perspective (Partnership for 21st Century Skills, 2007; West, 2010). For example, a number of professional education organizations (e.g., Association of State Colleges and Universities, 2008; National Council for Accreditation of Teacher Education, 2008) have recently stressed the importance of producing globally competent teachers. Similarly, in their most recent set of standards, the International Society for Technology in Education (ISTE, 2008) emphasized the need for K-12 teachers and students to participate in global learning communities and to demonstrate "cultural understanding" and "global awareness."

In response to the call to provide increased cross-cultural experiences for undergraduates, universities have sought to expand their study abroad programs and to provide greater access to international volunteer and travel opportunities. Unfortunately, very few students actually participate in these programs (Chia, Poe, & Wuensch, 2009). Bellamy (2006) noted that only about 1% of undergraduate college students participate "…and the numbers are skewed to wealthier students from elite colleges and universities" (p. 20).

In considering how to give every Purdue education student an international experience, we turned to technology, specifically Web 2.0 tools, which could offer a reasonable alternative to study abroad programs by connecting students, electronically, with international peers. This, then, led us to target one of the core courses of the teacher education curriculum as a possible platform for internationalizing our teacher education program. *Introduction to Educational Technology and Computing* is a required large lecture course that helps pre-service teachers from six different colleges (Agriculture, Consumer & Family Sciences, Education, Liberal Arts, Science, and Technology) learn how to 1) use technology to develop instructional materials and 2) integrate emerging technology tools within their future classrooms to facilitate 21st century teaching and learning. The course has an enrollment of approximately 300 students each semester. The majority of these students are pre-service teachers in their first or second years of the teacher education program; this is their only required educational technology course. Each week, students attend a large one-hour lecture plus a smaller two-hour lab section where they complete hands-on projects for the course. Each lab consists of approximately 20-24 students and is led by a graduate teaching assistant (TA).

The overarching goals of the project included the expectations that students would gain:

- knowledge, practical experience, and expertise with several Web 2.0 technologies, including how those technologies could be utilized in the K-16 and business/training learning environments;
- experience working on collaborative teams to solve a practical instructional design problem; and
- a greater global/cross-cultural perspective as they communicated, worked, and solved instructional problems with team members from universities outside of the U.S.

For this specific project, pre-service teacher education students were presented with the problem of creating a wiki repository about various Web 2.0 applications (e.g., wikis, blogs, social networking tools) and how each tool could be used within a variety of educational and training environments. The finished repository needed to be accessible to educators (and others) throughout the world who wished to learn about the technologies and make informed selections of the proper tool(s) to use in their specific situations. To accomplish this, students were divided into small teams that incorporated international partners (IPs -students from other universities outside of the United States). Team collaborations between members who were located so far apart depended on the use of various Web 2.0 technologies. That is, students used Web 2.0 technologies to create the repository that described those same types of technologies.

The initial project design decisions were made by the lead instructional designer/course instructor. The decision about the study of Web 2.0 technologies was selected because of a desire by the instructor to highlight key Web 2.0 technologies and how they could potentially be used within educational settings. He soon was overwhelmed with the number of potential technologies which could be included within the course. He took his concerns to the Teaching & Learning Technology group of the Information Technology at Purdue (ITaP) organization and they discussed various possibilities. That group suggested the potential use of a wiki repository that could be developed through several iterations of the project across several semesters. The wiki would allow contributions from authors beyond the course members and it would allow for individuals everywhere to access and use the information. At this point, additional discussions between the lead designer/course instructor with the Office of International Programs identified the possibility of contacting individuals at other universities throughout the world to also participate in the wiki repository development. Contacts with those universities were established and initial funding for various elements of the project was obtained through both ITaP and the Office of International Programs.

The Design: INSITE Project

The International Network of Students Investigating Technology in Education (INSITE) is a project that takes place from week 11 to week 15 of the course in which it is carried out. The course instructor/lead designer determined the project should be implemented later in the semester in order to allow time for his students to gain the necessary prerequisite skills in working with basic technologies, time for project managers to be selected, and time for the international partners to be identified, trained, and integrated successfully. The project consisted of creating small teams of Purdue students, coupled with IPs, to investigate specific Web 2.0 technologies. Each team was tasked with creating a wiki chapter about an assigned Web 2.0 technology. Initially the lead designer provided a list of questions that served as an outline for the structure of each chapter. These questions guided the students to provide descriptions of the targeted technologies, examples of how they could be used, training materials on how to access and get started using them, and educational materials (i.e., lesson plans) outlining how they could be utilized within the K-16 and/or business training environments. Students were expected to contact the developers of the technologies, examine any and all information available about them, and to compare features among the targeted and similar technologies. Although specific chapter specifications were not given during the initial iteration of the project, as drafts of those chapters were created, examples were selected, highlighted, and discussed within the project manager meetings. Project managers (PMs) exchanged ideas and together selected examples to use as guides for their respective chapters. Later drafts of the chapters evolved to reflect the accepted PM standards.

All chapters were assembled into a single wiki repository (see http://www.web2insite.com) which currently consists of over 170 chapters of different Web 2.0 technologies. After creating the wiki chapters, students presented information about their Web 2.0 applications at a "showcase" event. This comprised a 3-hour evening session in which all teams presented posters about their applications.

The Web 2.0 Technology Repository

The current repository is a wiki site that consists of three basic pages of information (the home page that includes a video describing the repository and a list of featured wiki chapters, a page with a video explanation of how and why the project was created, and a page with a link to a video explaining the involvement of the International Partners; see Figure 1). In addition to those explanations, there is a "Web 2.0 Tools" page that lists all 171 individual Web 2.0 tools in tagged categories (e.g., Blogging, Chat Tools, Charts & Graphs). As shown in Figure 2, the repository allows users to rate and review the overall functionality of each individual application, as well as providing links back to the original Web 2.0 tool chapters.

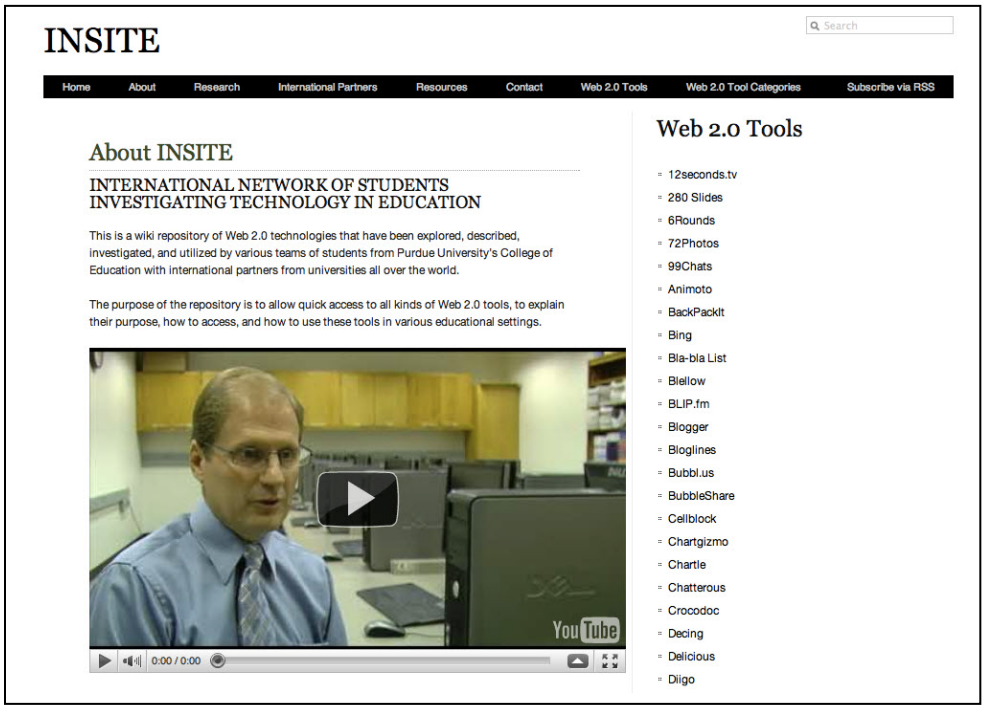


Figure 1. Home page of the INSITE Project Web 2.0 wiki repository showing introduction explanation, video and links to Web 2.0 categories and tools.

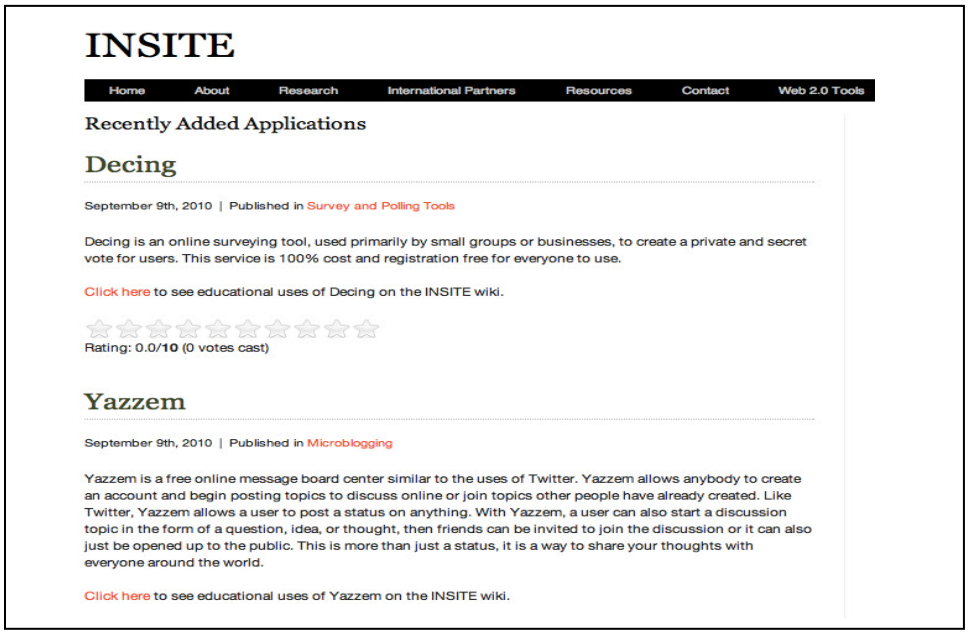
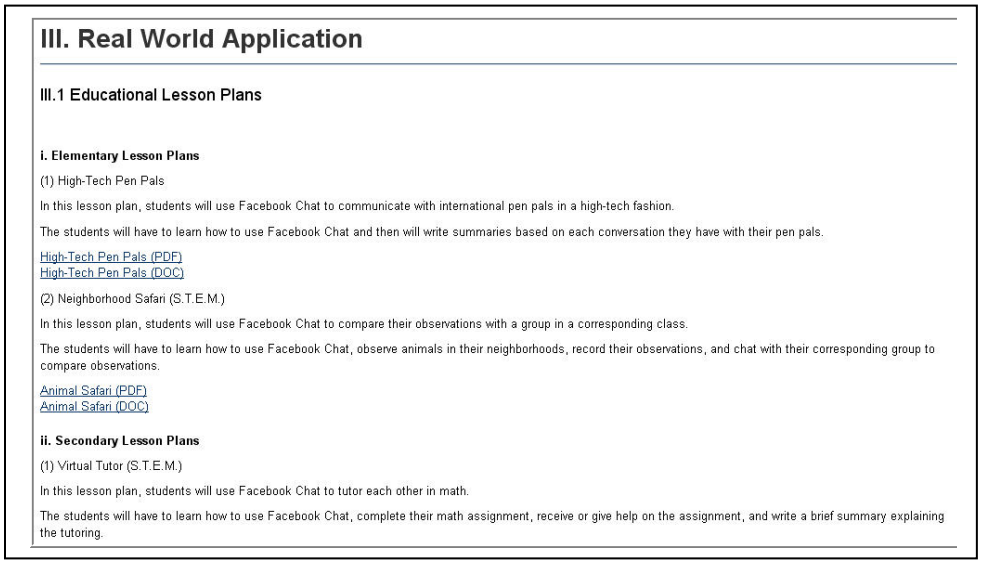


Figure 2. Example of the repository Web 2.0 tool description and rating page.

As shown in the example illustrated in Figures 3-6, all repository chapters have been designed around a similar set of common elements. As described earlier, these elements were outlined initially as a set of questions provided by the course instructor/lead designer (e.g., How is it used?; What does it do?; How can it be applied in the classroom setting?)

Figure 3. Example of a Web 2.0 repository chapter (i.e., Facebook Chat) with opening introductory information about the application.

Figure 4. Example of a Web 2.0 repository chapter application comparison information



III. Real World Application

III.1 Educational Lesson Plans

i. Elementary Lesson Plans

(1) High-Tech Pen Pals

In this lesson plan, students will use Facebook Chat to communicate with international pen pals in a high-tech fashion.

The students will have to learn how to use Facebook Chat and then will write summaries based on each conversation they have with their pen pals.

High-Tech Pen Pals (PDF)
High-Tech Pen Pals (DOC)

(2) Neighborhood Safari (S.T.E.M.)

In this lesson plan, students will use Facebook Chat to compare their observations with a group in a corresponding class.

The students will have to learn how to use Facebook Chat, observe animals in their neighborhoods, record their observations, and chat with their corresponding group to compare observations.

Animal Safari (PDF)
Animal Safari (DOC)

ii. Secondary Lesson Plans

(1) Virtual Tutor (S.T.E.M.)

In this lesson plan, students will use Facebook Chat to tutor each other in math.

The students will have to learn how to use Facebook Chat, complete their math assignment, receive or give help on the assignment, and write a brief summary explaining the tutoring.

Figure 5. Example of a Web 2.0 repository chapter revealing linked lesson plans that show how to integrate the application across specific age levels of students and various content matter.

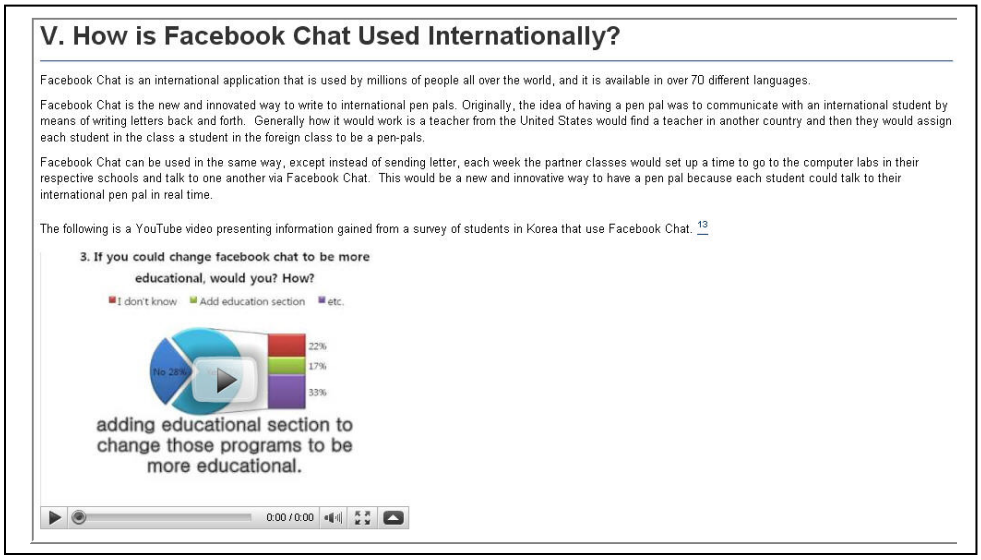


Figure 6. Example of a Web 2.0 repository chapter showing an example of how the current application may be used from an international perspective.

The utility of this project rests in the fact that individuals can visit a single site and have access to information about a large number of Web 2.0 tools. Individuals can visit the site, quickly examine what the various tools do, how they work, and compare each with other tools that have similar capabilities. With a specific need in mind, an individual can search the

categories of tools, examine all of the tools that are grouped within a specific category, and then make a selection of which would be most appropriate. In particular, this repository has been developed to help classroom teachers and students identify and select tools that would be relevant to use from an educational perspective. In some cases, this educational use is limited; however, within each chapter, example lesson plans have been developed and included to demonstrate how the tool could be integrated to facilitate learning across various student age levels and subject matter.

Expansion of this project will include the design and development of problem-based cases to challenge repository users in the selection and integration of the technologies given various real world learning situations and constraints. Users will be presented with various cases involving different types of target learners, learning environments, and content. Using a set of guided questions, users will review the strengths and weaknesses of the repository's technologies and they will be able to explore different alternative technologies within the repository. After initial development and implementation of a small number of example cases, additional cases will be developed by teams of students similar to the teams now participating to create the Web 2.0 repository. Case teams will also include international partners and the goal is to develop a case repository that can be linked directly to the Web 2.0 technology repository.

Initial Planning Decisions

During the initial planning stages of this project, several key decisions had to be made. First, with the size of the course, how would an effective, meaningful project be completed? It was determined that small cooperative teams could be used (generally, this resulted in 40-50 teams working simultaneously each semester). To create the teams, students in each lab were divided equally into two separate groups. Teaching assistants selected and assigned the group members to ensure that each group was equal in size and capabilities. Group size varied based on the size of the lab, but in most cases the initial teams consisted of a core of 10 to 12 Purdue students. To facilitate communication and to help organize the roles and responsibilities, it was quickly determined that each team needed to have a project manager (PM). Selection of the PMs was based on students' initial lab performances (i.e., how well each performed on earlier course projects and how well they helped mentor others in the lab setting). PMs created team timelines and assignments, monitored completion of various tasks, and helped to ensure all responsibilities were completed by their respective teams.

Second, how were the IPs to be recruited for this project? Initially, we decided to contact our former teaching assistants and visiting scholars who had first-hand experiences with this Purdue course, prior to returning to teach at universities in their home countries. After describing the project to them (e.g., its goals, schedule, and requirements), the IP instructors determined the feasibility of engaging their current students in the project (e.g., "Would it fit

into their semester schedules? Would it allow students to meet the course objectives?). Instructors who joined the project provided us with their students' contact email information. Based on the total number of International partners (IPs) participating, two to three IPs were assigned to selected teams of Purdue students (Note. For this first iteration, we did not have enough IPs to partner with every Purdue team). Once assigned, IPs were all contacted individually (via email) by the course instructor and later by their assigned PMs and other group members.

Third, and most important, was the decision regarding *which* topic/technology should be studied. The topic needed to provide ample material for large numbers of teams to investigate, while also being relevant to the course content, and having the potential to be used by a wide audience of teachers and trainers. Moreover, we hoped to find a topic that would engender large amounts of learner participation and involvement. By choosing Web 2.0 technologies as the focus of this project, we believed there would be more than enough material to investigate, and that teams would be able to create a project that would be relevant to them, with the potential to be used by others in the field. We believed that this project would allow our students to leave a rich resource that others around the world would find beneficial.

Schedule of Initial Implementation

Table 2 highlights the major activities that were scheduled to occur during the initial implementation of the project.

Table 2*: INSITE project schedule with planning period shaded*

Week	Task

Prior to start of the semester	• Calculate the project timeline
	• Create participant pre/post surveys
	• Contact IP instructors:
	  o Request participation
	  o Present project timeline

Week 1-8	• Design training for all students (IPs and Purdue) to use of the wiki • Identify the Web 2.0 applications to be used • Create the blank wiki and determine how it will be accessed by all team members • Continue contact with International Partners o Obtain finalized list of participant names and email addresses • Send identified Web 2.0 applications to instructors for verification that they work in their countries
Week 9	• Determine team make up of Purdue students and IPs • Assign the Web 2.0 application to each specific team • Send designated Web 2.0 and team assignments to IP instructors
Week 10	• Official welcome of the IPs to the project (email and video) • Project explained within the Purdue lecture and labs • Project manager meetings begin – roles and responsibilities explained

Week 11	• Project officially begins • Team members review training on how to work on the wiki • Team members introduce themselves via the wiki • IPs are contacted by individual student teams • Roles and responsibilities are discussed and selected • Research begins and relevant information is posted by team members on the wiki • Project managers continue to meet and discuss the progress of their chapters
Week 12	• Different sections of the chapter are composed and edited on the wiki • Lesson plans integrating the Web 2.0 applications are created
Week 13	• Initial draft of the wiki chapters are completed • Lesson plans finalized • Showcase event roles are discussed and selected by team members
Week 14	• Peer team evaluations of the wiki chapters • Wiki chapters are finalized • Finalized development of presentations for the Showcase Event
Week 15	• Showcase event occurs – all teams present their application information • Evaluation via small groups and individual interviews • Post project surveys are administered and data collected

Process Design

This project was designed following a simple rapid prototyping approach (see Culatta, 2010; Tripp & Bichelmeyer, 1990). This allowed for the project to be completed, evaluated, and redesigned across successive semester iterations. That is, using feedback and data from the previous semester's version, the project slowly evolved over the course of several semesters. Personnel involved in the initial design included the project designer (the course instructor), 10 teaching assistants (all PhD and Masters instructional design students), and a team of evaluators (a professor of instructional design and 3 research assistants) who conducted both formative and summative evaluations. The project was organized into three major components. The first component focused on key project elements including the goals and objectives of the project as well as the intended learning outcomes. This also included deciding when the project should occur in the semester and how much time should be allotted to it. In addition, we needed to determine the key roles and responsibilities of the local participants (instructor, TAs, students), as well as the procedures for identifying teams and project managers, and outlining how they would accomplish their tasks. The second component included identifying the international partners, contacting and scheduling the project with the IP instructors, and assigning IPs to each team. The third major design component included preparing the wiki space and identifying the Web 2.0 applications to be studied. After each

iteration of the project, we revisited each of these main components to determine which aspects were successful and which required adjustment.

Process of Continuous Improvement: Addressing Constraints through Redesign

The project was expected to evolve over the course of several semesters. At the conclusion of each implementation, the project was evaluated for what worked well and what needed to be adapted. Prior to the next iteration, changes were made based on that feedback.

As the project progressed, several changes and adaptations were required based upon various constraints, problems, failures, and insights that were encountered with the original design. The project re-design began by focusing on the three main components outlined earlier: a) the structure of the teams and the responsibilities of the individual group members; b) the identification, training, and integration of the IPs; and c) the structure and composition of the wiki chapters.

Project Logistics

Working on teams offered several challenges to the project. Team size, for example, placed certain constraints on the design of this project. Project managers found it difficult to work with 10 to 12 Purdue members plus the additional 2 to 3 IPs. Most of the PMs had little if any team management experience and often found it challenging to keep their members focused and on task with the project. To ensure team success, PMs were frequently found to be doing a majority of the team work instead of having their members cooperatively complete the tasks. To resolve some of these issues, group size was reduced to approximately six students from Purdue with the potential of two to three IPs being added. This subsequently increased the overall number of teams participating, but reduced team size to no more than nine members per team. In addition, based on evaluation comments, short training and discussion sessions were designed for each of the PM weekly meetings. These focused on delegating, monitoring, and facilitating team member responsibilities. Moreover, a new/introductory team project was created to precede the beginning of wiki project in order to increase students' experience working on cooperative teams. Finally, each role and responsibility of all team members was defined to a greater degree which allowed students to select their primary and secondary roles more effectively.

International Partners

The most challenging constraints to the success of this project related to working with the large number of IPs. Language differences, time and physical distances, lack of thorough training, lack of instructor support, and feelings of being "outsiders" were several of the key problems encountered. With each iteration of the project, steps were taken to redesign the project and create a

better experience for our international partners. For example, following the first two iterations of the program, a project coordinator was added to the design team to facilitate the selection, scheduling, and training of the IPs and their instructors. Additionally, to help integrate the IPs into the project more quickly, a requirement was instituted for all teams to contact their IPs synchronously, during the initial week of the project, to make introductions, welcome them as team members, and to discuss potential roles and responsibilities. Video training sessions were also designed, developed, and delivered by the course instructor to fully explain the project, walk the IPs through the schedule, and explain the major tasks of the project. Training was also created for the IP instructors to help them understand the program and how to promote it and critique student performance within their own classes. In some cases, it was found that designating one specific IP as the IP project manager worked well to coordinate efforts between the IPs and the Purdue team.

Table 1: *INSITE project participants from Fall 2008 – Spring 2010*

Semester	**Purdue Participants**	**International Partners (IPs) and their universities (number of participants in parentheses)**
Fall 2008	241	(38) Ewha Woman's University (South Korea) (5) Middle East Technical University (Turkey) (40) Okanagan College (Canada)
Spring 2009	346	(47) Beijing Normal University (China) (78) University of Southern Queensland (Australia) (4) National Cheng Kung University (Taiwan) (6) National Institute of Education (Singapore)
Fall 2009	335	(24) Yakutsk State University (Siberia, Russia) (64) Ewha Woman's University (South Korea) (20) Umea University (Sweden) (9) Oxford University (England)
Spring 2010	304	(74) Umea University (Sweden) (8) East China Normal University (China) (7) University of Dundee (UK) (10) National Cheng Kung University (Taiwan) (20) Middle East Technical University (Turkey) (24) Bilkent University (Turkey)
Total	**1226**	**478 International Partner participants**

The Task

During the initial semester of implementation, students didn't have examples of what the wiki chapters should look like. Although the lead designer provided a list of questions to help organize the material and the general look of the chapters was discussed and determined during the PM meetings, there were still differences in the chapters based on depth of content and their overall appearance. At the conclusion of the first semester of implementation, all completed chapters were evaluated and several were selected as examples to

be used for the next semester's teams. These examples were selected by the design team including the lead designer and the course teaching assistants. Example chapters allowed subsequent teams to more quickly grasp what was needed as well as the desired level of quality. However, a different, unforeseen challenge resulted once the example chapters were provided. Although their use facilitated the efficiency of creating additional chapters, in some cases their use came to constrain team creativity. Initially, teams were tasked with creatively solving the problem of "what the chapter should look like" – but once the examples were in place, their creative approach was limited as students tended to conform to the presented style of the examples. Although the examples helped students feel more confident and efficient in accomplishing the required tasks, it also had a potentially negative impact on their motivation for the project. This unresolved tension persisted throughout the project, and we foresee facing it again in the future.

Another constraint that quickly developed was that the general philosophy of focusing on *creating* the repository chapters had to be expanded to also consider how to *maintain* the deposited chapters. Web 2.0 applications are constantly changing and it became necessary to consider how to continually review and update the chapters that were already within the repository. This was resolved to some degree as graduates of the course project were offered additional course credit to systematically review, update, and maintain chapter information within the repository. As the repository grows and access to new Web 2.0 tools wanes, future iterations of the project will need to focus on using the information that is already within it versus adding new information.

Project Evaluation

Participant Evaluation

The impact of participation in the project was assessed in a number of ways. First, pre and post survey data were collected that examined changes in participants' perceived levels of confidence and value for using Web 2.0 tools for learning, as well as changes in perceptions about working with individuals from other countries and cultures (i.e., cultural competency). Second, following the conclusion of the project, focus group interviews were conducted with project managers, teaching assistants, and selected teams of students. These interviews focused on the successes and the challenges experienced as they worked on their teams developing the repository chapters. Finally, informal synchronous and asynchronous interviews were conducted with many of the IP instructors in order to obtain their input regarding what their students gained from the experience and how the process could be improved.

Product Evaluation

Repository chapters were evaluated through a two-step process. During the initial development of the chapters, team peer evaluations were conducted in which each team was assigned to examine and evaluate one or

more of the other teams' chapters and make recommendations about how the chapters could be improved and other things that should be noted and/or included. Following publication of the final version of the chapters, all repository chapters were evaluated by the teaching assistants and their assigned peer-evaluators from other teams. The course instructor randomly selected a majority of the projects to review.

Learning Outcomes

Impact on Student Learning

Based on the most recent set of analyzed data (Fall 09), students' confidence for using Web 2.0 tools, knowledge on how to use these technologies in teaching, as well as their perceptions of the benefits to using wikis, social networking, and video sharing tools all increased significantly following the team experience (see Table 3). Moreover, qualitative results demonstrated changes in student perceptions of their sense of connection with the larger society, as well as their perceptions that Web 2.0 tools could facilitate meaningful collaborations with others.

Table 3. *Changes in Students' Perceptions (Confidence, Value, Benefits) for Using Web 2.0 Tools*

Variable	Mean Difference (Pre – Post)	Standard Error	t-value	p-value
Confidence for using Web 2.0	-10.88	.33	-31.11	< .0001
Perceived Value for using Web 2.0	-2.07	.28	-7.50	< .0001
Perceived Benefits to Using:				
Blogs	.12	.99	.12	.904
Wikis	-8.14	1.07	-7.57	< .0001
Instant Messenger	-.16	.93	-.17	.867
Social Network	-2.70	.99	-2.74	.007
Video Sharing	-2.43	.91	-2.66	.008
Online Games	-1.18	1.13	-1.05	.297
Virtual Worlds	1.21	1.06	1.14	.253

The majority of students interviewed expressed satisfaction with their experiences with the international partners. For example, one project manager explained, "I am so impressed with the interaction I have been getting with the international partners in Beijing. I feel that [they] are very dedicated to this project and show a genuine interest in it." Another student explained, "These applications helped show how although we might have different cultures, the technology helps us learn more about others and shows how we actually have more in common with them than we originally thought." Another team member wrote about how the team experience helped to expand her view of working with those of a different culture, "Going into it was a little intimidating and I definitely had some stereotypes about the Australians and a little skeptical that they would do all the work that they needed to do. But as the project went on,

they were just a lot of fun… it just kind of flowed… just talking to them on Skype whether about the project or just life in Australia. I would like to go to Australia one day and meet them face-to-face because we have this connection now. I think that's really neat."

Insights

The design as implemented presented challenges which led to additions and adjustments, as well as some insights regarding the most successful components of the design.

The Central Problem

The central problem needed to be something that would attract and maintain the attention and efforts of the students. Web 2.0 tools had a broad appeal for many of them and thus served as a strong starting point to bring them together and to focus their efforts. Once one or two chapters in the repository were created, students immediately saw its utility and quickly developed a desire to add to that repository.

We expected buy-in to the project to be facilitated if students understood the long term value for themselves. In addition, it was important that they understand that their efforts would contribute to something that others can explore, learn from, and use. We learned that we needed to continuously highlight the vision of the project and emphasize its relevance and need in the real world.

The Teams

Working with 50-55 small teams at one time was a daunting task. Project management would have been easier with fewer teams, but in today's college environment of large introductory courses, the project showed us that working with this number of teams could be successful.

The key to team success in this project was the proper selection of the project managers. For our purposes, the selection process began by closely observing students during the completion of their first assignments and projects of the course. High performance on those early course assignments prompted us to consider those individuals as potential PMs. In addition, we looked for individuals who frequently offered unsolicited help and support to others in their lab sections.

Regularly scheduled PM meetings were critical to the project's success. These meetings helped to delineate the short and longer term goals, to encourage and motivate the managers, and to teach specific skills about their wiki design and development efforts, as well as coach them on their team leadership skills. In addition, these meetings offered a forum where all PMs could discuss specific challenges and relevant solutions with each other. Project managers needed to see and understand the vision of the project prior to the

project being introduced to the full teams. They needed to be able to tell their groups from the first day, "Yes, we can do this and it will be worth the effort."

Optimal team size for this project was about 6 Purdue students and 3 IPs. Smaller than that, and the project became overwhelming for those involved; more than that, and it was difficult for the PMs to keep everyone involved.

It was critical to get all team members involved as soon as possible. To facilitate this, the grading rubric included points that were available only to those who contributed information about their assigned tool within the first few days of the project.

Specified roles and responsibilities needed to be identified and team members needed to volunteer and/or be selected for those roles. PMs needed to record who would complete which roles and remind those individuals of their responsibilities and deadlines. Backup plans were always needed and this was accomplished by having individuals assigned to primary as well as secondary roles. Secondary roles ensured the task will be completed even if those with primary responsibility were unable to complete the task.

The International Partners

Communication with the instructors of the IPs needed to be established well before the start of the project. Prior to selecting an international group of participants, we needed to map schedules, and hold a discussion about language capabilities, motivation, and assessment of the students.

IP instructors played a key role in the success of the project and needed to be encouraged to be full participants. The IPs generally went to their instructors first with questions about the project and if the instructor didn't have the answer, this led to confusion. Prior to the start of the project, instructors needed training about the repository and the various roles and responsibilities required to successfully complete the task.

A critical piece of this project was ensuring that the IPs are incorporated as full partners in the project. In order to do this, we found the following steps to be invaluable. (1) IPs were introduced to the project BEFORE it began. They needed to know what the project is, how they would be involved, and how they could get in to the wiki and make contributions. A video introduction from the project coordinator explained the vision of the project and showed examples of what they would be producing during the course of the project. IP instructors took an active role in introducing the project to their students. They needed to emphasize that they were working as partners with their U.S. counterparts. (2.) All team members introduced themselves on the wiki. This helped them get used to logging in and contributing to the wiki and it helped to overcome apprehension about language challenges and group cohesion. (3.) Within the first week of the project, a synchronous meeting (e.g., via Skype, Facebook Chat) was arranged so that all group members could "talk" and discuss the project. This was critical for group cohesion and for clarifying

roles and responsibilities. This was often difficult to complete because of time zone differences, but it was important to make every effort to complete this meeting. Once students saw their team members' introductions on the wiki and talked to them synchronously, their comments on the wiki were made with more confidence and the work progressed at an accelerated speed.

We did not let time differences between local and international partners and language barriers slow the progress of the group. The beauty of the wiki environment was that individuals all over the world could access it and make contributions – no matter what time of day. In addition, because it could be edited, if there were language difficulties, editing roles could be assigned and the language can be improved once posts were made. Although these were the most cited "challenges" for participants in the project, these were readily overcome within the wiki environment.

The Process

There needed to be a definite date for when the project started and ended. We scheduled a "showcase" event at the conclusion of the project where all of the groups came together in a large poster session to present each of their wiki chapters. IPs were be involved either asynchronously (e.g., via pre-recorded YouTube videos shown during the showcase) or synchronously (through direct Skype or chat sessions during the showcase).

It was important to get all needed information (e.g., names, email addresses, language capabilities) prior to the start of the project. We included training and a practical assignment in which all participants needed to use the repository in some way prior to the start of the project. It was important to make sure that all of the problems of group assignments, log in issues, and the vision of the project were solved prior to the project's start.

We monitored and logged all interactions with the IPs. If there was no contact with an individual over a period of time, we needed to have a means to contact the IP instructor to see if there was a reason why the IP was not responding. Follow-up was critical to maintain involvement.

We created short term goals that had definite due dates. For example, identifying when the research for the application had to be posted on the wiki, when the first draft of the chapter needed to be completed, and so on. During the PM meetings it was important to show exactly where the development efforts should be. The project workload needed to spread out over the full development time so that students didn't wait until the final few days before the project was due to complete the majority of the work.

Conclusion

This project has proven beneficial because it allowed students to learn about Web 2.0 tools as they used those same tools to develop a valuable resource. Moreover, pre-service teachers gained experience and confidence

collaborating with team members even when they were from different locations and cultures. These collaborations have translated into student understanding of different perspectives and work methods. This experience has had a documented impact on students' global perspectives and has the potential to impact their future teaching; moreover, we anticipate increased numbers of students who have had this initial experience to participate in study abroad experiences later in their college careers.

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