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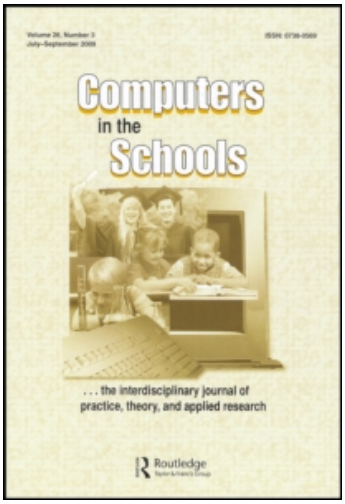

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Utilizing Web 2.0 to Provide an International Experience for Pre-Service Elementary Education Teachers—The IPC Project

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Utilizing Web 2.0 to Provide an International Experience for Pre-Service Elementary Education Teachers—The IPC Project

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This paper describes an international project completed by groups of pre-service elementary education students in four countries. Students utilized Web 2.0 technologies to design and conduct a study on a topic of their choosing related to curriculum and instruction, in elementary schools. This paper also presents results of a survey given to two groups of these students as well as anecdotal comments from others.

KEYWORDS internationalization, teacher education, projects, Internet, competence, global communication, Web 2.0

We must prepare pre-service teachers to take their place in the global economy. Skills needed by teachers and students in the 21st century have been defined by the Partnership for 21st Century Skills (2004a). These include moving "beyond a focus on basic competency in core subjects to promoting understanding of academic content at much higher levels by weaving 21st century interdisciplinary themes into core subjects" (Partnership for 21st Century Skills, 2004b, ¶2). One of these interdisciplinary skills is global awareness (2004b). The Partnership for 21st Century Skills also addresses life and career skills, one of which is social and cross-cultural skills. The partnership defines this as "bridging cultural differences and using differing perspectives to increase innovation and the quality of work" (Partnership for 21st Century Skills, 2004c, ¶4). The updated 2008 National Educational Technology Standards for Teachers (ISTE, 2008) also note a connection

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between teaching and globalization. Standards 3d, 4d, and 5a address modeling and facilitating "effective use of current and emerging digital tools to locate, analyze, evaluate, and use information resources to support research and learning" (¶3); developing and modeling "cultural understanding and global awareness by engaging with colleagues and students of other cultures using digital-age communication and collaboration tools"(¶4); and participating "in local and global learning communities to explore creative applications of technology to improve student learning" (¶5). Therefore, it is incumbent upon colleges of education to explicitly design and implement curricula that provide international experiences for pre-service teachers so they can develop the skills noted above.

The project described in this paper provided an international experience for pre-service elementary education students from the United States, Germany, Spain, and Bulgaria. The students were involved in an Internet-based investigative project that took place over eight weeks in the fall of 2008 and fall of 2009. Students from four universities in the four countries were placed in groups and utilized Web 2.0 technologies to investigate a topic of their choosing that pertained to curriculum, instruction, and lesson planning in elementary schools.

The purpose of this paper is to provide an evaluation of the project. Data were gathered both semesters in order to elicit student feedback from the students. In the fall 2008 project, student participants were asked to complete an online survey. The purposes of the survey were to determine if the project changed students' beliefs about internationalization in teacher education and to determine if their skills at using Web 2.0 tools were improved. In the fall 2009 project, the survey was not repeated, but anecdotal evidence was collected to judge the success of the project and to solicit student reactions to the project.

LITERATURE REVIEW

Many authors have called for internationalization in teacher education. A sampling of these includes Arnove, 2001; Bartell, 2003; Dooly and Villaneuva, 2006; Gillom, 1993; Ochoa and Suzuki, 1993; Roberts, 2007; and Rios, Montecinos, and van Olphen, 2007. Review of this literature finds much about what internationalization in teacher education is and definitions of internationalization, globalization, and global education. Ochoa and Suzuki (1993) stated, "Capacities such as the ability (a) to communicate with people from different ethnic and national backgrounds; [and] (b) to understand other cultures" (p. 62) should be part of the education of all our students. Roberts (2007) defined *international education* as developing "multiple perspectives, intercultural competence, and respect for human rights" (p. 12). She explained that "international education strives to embody knowledge, skills, and experiences that stem from in-depth study, work, and collaboration

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with groups and individuals in other countries and with international students and scholars" (p. 12). Bartell (2003) defined *internationalization* as "the process of integrating an international perspective into a college or university system" (pp. 45–46). He further noted that cultural competence has become a necessity in a world with "instantaneity in communication and rapid advances in transportation" (p. 49). This gives us some understanding of what internationalization is. While Bartell called for universities to restructure their curriculum to include international experiences for faculty and students, Gillom (1993) noted that "the success of efforts to bring a global perspective to undergraduate teacher education is largely dependent on the commitment of faculty members to the cause" (p. 41). Even though these two resources were written 10 years apart, they both indicate that internationalization has not taken place in our colleges and universities.

The problem of how to gain this international experience remains a challenge for our universities. Student mobility and studying abroad, which is important for gaining international experience, is still playing a marginal role in individual student experience. The willingness to study a semester or more at a university in another country depends first of all on the students' social background. In most cases the personal attitude and motivation for studying abroad are influenced by the expected additional financial burden (Bundesministerium für Bildung und Forschung [BMBF], 2008).

The Organisation for Economic Co-operation and Development education online database (as cited in BMBF, 2008, p. 6) provided the rates of outgoing and incoming students for selected host countries (Australia, Great Britain, Germany, France, and the United States). As measured by the total number of students, the United States sent 0.2% of their students abroad. The Australian and British rates were similar at 0.9% (Australia) and 1.0% (Great Britain). France had a rate of 2.5% outgoing students and Germany showed 2.9%. The rates of the incoming students differed, too. They varied from 17.3% of the total number of students in Australia to 13.9% in Great Britain, 11.5% in Germany, and only 3.4% in the USA.

The reason for the better rates in European countries could be found in the Erasmus program. With the Erasmus program the European Union created a large measure to provide international experience to students within Europe. Erasmus is the European flagship education and training program, enabling more than 180,000 students to study and work abroad each year, as well as supporting co-operation actions between higher education institutions across Europe. It caters not only to students, but also to professors who want to teach abroad and to university staff who want to be trained abroad.

> Studies show that a period spent abroad not only enriches students' lives in the academic field but also in the acquisition of intercultural skills and self-reliance. Staff exchanges have similar beneficial effects, both for the people participating and for the home and host institutions.

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> . . . Around 90% of European universities take part in Erasmus and two million students have participated since it started in 1987. The annual budget is in excess of €440 million, more than 4,000 higher education institutions in 31 countries participate, and even more are waiting to join. (European Commission, 2010)

However, we have to consider a special situation concerning internationalization in teacher education (Hertel, 2005). A similar situation exists in Europe and in the United States: Teacher education programs vary from state to state and from country to country. Also the conditions for gaining employment as a teacher and the legal requirements for employment are different in each state and country. Europe also has to deal with the different national languages which make it difficult for non-native speakers to find jobs in schools in other European countries.

These problems, however, have to be seen alongside the advantages of intercultural knowledge and experience that can be provided by integrating international aspects into the educational programs for future teachers, especially considering the fluidity of today's society in Europe as well as in the United States. The process of globalization impacts learning; and teaching influences the content of subject areas, provides mobility for teachers, and inspires life-long learning.

There is scant information in the literature about how one should go about helping teachers understand internationalization and use it in their teaching. Cordeiro (2007) listed several questions that need to be answered as we prepare our teacher candidates to be global citizens: "What knowledge should be required of our graduates in order to be productive teachers in a global age? How is that knowledge best transmitted? How can we assess that that knowledge has indeed been learned? How can colleges of education ensure that future teachers not only have this knowledge, but they can teach it to children and youth?" (p. 153). These are important questions, but ones that do not seem to have been adequately addressed in the literature so far. Roberts (2007) noted that "few prospective teachers are exposed to international content either in university-required courses or in professional development tracks of education, and very few take foreign languages classes" (pp. 11–12). This project with pre-service teachers is seen as a first step in exposing students to an international experience using current digital technologies known as the *Web 2.0*. Web 2.0 is not a new version of the Internet, but a way of providing "greater collaboration among Internet users and other users, content providers, and enterprises" (Tech Target, 2008). As O'Reilly (2005) noted, users control their own data with Web 2.0 tools, and the "systems get better the more people use them" (sidebar). The choice of Web 2.0 tools was made to give students the experience of using these different tools and because it was felt that these tools would facilitate communication between the students and the construction of knowledge by the students.

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Concerning the use of Web 2.0 technologies in higher education, Franklin and van Harmelen (2007) noticed that "the possible realms of learning to be opened up by the catalytic effects of Web 2.0 technologies are attractive, allowing greater student independence and autonomy, greater collaboration and increased pedagogic efficiency" (p. 1). Web 2.0 encompasses a wide range of software. The most important educational software can be labeled as "social software, software that exists to facilitate group processes" (p. 5) such as blogs, wikis, social bookmarking, media-sharing services, social networking, and social presence systems, collaborative editing tools and syndication and notification technologies (Franklin & van Harmelen, 2007).

OVERVIEW OF THE PROJECT

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The project in the fall of 2008 took place between students at the University of North Carolina in Charlotte in the United States, the Catholic University of Eichstaett-Ingolstadt in Germany, and the University St. Kliment Ochridski in Sofia in Bulgaria. It was an outgrowth of a project called "Internet and Project Competence" (IPC) begun in 2004 in Germany by Jean Pol Martin. The project that took place in the fall of 2009 included those same universities as well as the University of Granada in Spain. The IPC project (Schultheis, 2009) was designed as an innovative and international teaching project for students at the university level. Referring to the constructivist paradigm of learning, the students work in international groups and carry out common research projects. Therefore, the didactic conception enhances autonomy and one's own initiative. The students work as autonomously as possible. This is a learning process for the students that is enhanced by support and guidance from the instructors. Each participating university has at least one native speaking professor and a student tutor or graduate assistant available for online coaching and communication during the project. Thanks to the combination of local meetings at the universities and the online presence, the students can be assisted whenever needed.

There are three main learning objectives for the project: project competence, Internet competence, and professional expertise. Goals of the project are for students to develop communicative competence in an international setting using Web 2.0 tools, to build positive attitudes toward people of other countries, and to compare and contrast topics in the study of education pertaining to curriculum and teaching methods. Communicative competence includes working in a team, being proactive and communicating in an international group, and making working plans and time schedules for the group's work. Internet competence includes using modern information technology and Web tools such as Internet networks, weblogs, wikis, discussion boards, Skype, Doodle, chat rooms, and online survey utilities. Finally, we want students to gain expertise concerning their study curriculum to develop

professional expertise, and to develop and prove hypotheses. Cultivating professional expertise includes developing an understanding of cultural differences and educational systems in other countries. The comparative view of instruction methods, curriculum, childhood activities, and so forth, gives the students a wider perspective and provides a better understanding of the teaching and learning processes at schools in different places.

An IPC project consists of three phases. In phase one the students introduce themselves in the discussion boards and they create a personal user page. They first contact their international partners through the discussion board, chats, and blogs. In this phase the professors provide some general readings and make suggestions for the preparation of the particular subjects of the project. In phase two the students are ready to choose a topic and to form online working groups. They now continue searching for and reading basic and special literature concerning the chosen topic. After this they develop a hypothesis for their research question, they work on a draft of a research design (e.g., questionnaires, interviews), and prepare their investigation. Phase three includes processing of the surveys and interviews (data collection) and the interpretation and evaluation of the collected data. A main task of this phase is to create a group presentation with the research results that must be published on line in the chosen IPC Web site. Presentations of the results take place at each university during the students' class time. In the projects described in this article, a group of the German students had the chance for a study trip to Charlotte in the winter of 2009 and 2010 and therefore for a public common presentation with their partners.

Although the organization of the classes was different in the four countries, and the numbers of students participating in each country were different, students in all four locations completed the same work in each of the projects. In the fall of 2008, students were asked to complete a survey online using surveyshare.com to gather data about any international experiences they may have had, their beliefs about teaching and international perspectives, and their skills using different Web 2.0 technologies. The survey was optional, but almost all students chose to participate.

In the first three weeks students and the instructors introduced themselves to each other using the project wiki on Wikiversity and an online discussion board. A common reading assignment, "ICT/Global Awareness" (Partnership for 21st Century Skills, 2004a) and "The Framework for 21st Century Learning" (Partnership for 21st Century Skills, 2004b) was provided to facilitate the online discussion and provide a common resource. Doodle, an online scheduling tool, was used to place students in groups according to their interests. Group wikis were then set up in Wikiversity so that each student group would have a common work area. Students used a KWL chart on their group wikis to help them organize their investigations. In the next four weeks students worked in their groups researching their chosen topics and communicating through the wikis, the discussion boards, and e-mail. At the

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end of the project, the KWL chart was completed, and groups shared their learning online using PowerPoint presentations via the project wiki. Students also presented their information in their classes. At that time, students were asked to complete the online survey again, this time with the addition of some questions to evaluate the project itself.

The project was similarly conducted in the fall of 2009. This time, however, a more user-friendly Web site (mixxt.com) was used that combined a wiki, a whole group discussion forum, small group discussion forums, and a means of uploading files easily. The project began with readings on a common topic (curriculum) in each of the native languages. The four professors consulted with each other before the project began to find suitable readings on a common topic for their students. Doodle.com was used again to facilitate the formation of the student groups. Each group contained students from at least two countries. The groups proceeded as before to identify their topic, decide on their method of data gathering, gather data, synthesize their findings, and create a PowerPoint to share their findings. Anecdotal evidence was collected from the American students to gather data concerning what they had learned from the experience. The emphasis in this project was not as much on internationalization in teacher education, but more on what students had learned about working with their peers in other countries and what they had learned about education in other countries.

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PROGRAM EVALUATION DATA COLLECTION

This study utilized data from pre-and post-study surveys administered to students in the investigators' fall 2008 classes. Participating in the surveys was not required as part of this project; however, all but three students ($n = 56$) agreed to complete the surveys. Forty-one students responded to the first survey and 32 to the second survey. This is a response rate of 73% for the first survey and 57% for the second survey. Students were assigned identification numbers before they took the first survey. These were kept by another faculty member at University of North Carolina, Charlotte so that the surveys would remain anonymous. Students were provided that faculty member's e-mail so they could contact her if they lost their identification number before the second survey. Identification numbers were used so that answers to the surveys could be matched and pre- and post-study information could be compared. Because not all of the students completed both surveys, only 21 surveys were able to be matched. Students were asked to take the first survey during the first week of the project; the second survey was taken in the week after presenting their projects in class. Anecdotal data were also taken from reflection papers written by the American students. The surveys were both administered through surveyshare.com, an online survey tool. Because all of the students spoke English, the survey was written in English.

Data from the surveys were put into Excel for analysis. Descriptive statistics were used in the analysis of quantitative items. Constant comparison was used for the qualitative items on the survey; answers were compared and themes emerged from the data. The themes from the surveys were also compared to see if any change occurred in the time between the two surveys.

In the fall of 2009, anecdotal evidence was gathered from the 30 American students through written reaction papers to ascertain what they had learned from the project. The papers were read through, looking for common themes. As themes emerged from the data, codes were developed and applied to the students' writing.

Results of the Project Evaluation, Fall of 2008

In the fall of 2008, both surveys were completed by 21 students in the United States and Germany, 15 from the United States and 6 from Germany. None of the Bulgarian students completed both of the surveys, so their data were not included in the final analysis. All but one of these students was female and all but one was in the 18–28 year-old age range. All of the American students indicated they were in their first semester (out of four) of their teacher education program. All of the German students indicated they were in their fifth semester (out of seven) of their teacher education program. When asked what foreign languages they spoke well enough to hold a conversation on a basic level, three of the American students answered *Spanish*, and all of the Germans answered *English*. One German student also indicated that she spoke French and Spanish as well. When asked what foreign language they knew well enough to communicate in writing on a basic level, four American students answered *Spanish*, and all of the German students answered *English*. In addition, two German students indicated that they could write in French and one in Spanish. Thirteen out of the 21 students (62%) said they had traveled outside of their native country. Only two students (10%) said they had participated in a study-abroad program. Fifty-two percent reported having had some sort of international experience. These experiences ranged from exchanging e-mails with a person in another country, to church mission trips, hosting foreign students in their homes, and cruises.

Beliefs about Internationalization in Teacher Education

Several questions on the survey provided data on the pre-service teachers' beliefs about internationalization in teacher education (research question one). When asked if they believed an elementary (or primary) teacher in the 21st century should know about educational practices in other countries, 95% ($n = 20$) answered *yes* on survey one and 95% ($n = 20$) answered *yes* on survey two. One student answered *no* on both surveys. A follow-up

Downloaded By: [Schultheis, Klaudia] At: 17:03 17 December 2010

question asked students to provide a rationale for their answer. The top two themes that emerged from these answers in survey one were to *learn about other country's practices in order to improve ours* ($n = 7$) and to *help teachers with students of different cultures* ($n = 4$). The top two themes in survey two were to *learn about other country's practices in order to improve ours* ($n = 12$), and to *help teachers with students of different cultures* ($n = 5$).

Students were asked what internationalization in teacher education meant to them. The analysis of the answers from survey one produced a number of themes: *learning about education in another country* ($n = 6$), *educating students about other countries* ($n = 3$), *sharing educational experiences with others* ($n = 3$), *learning about teacher education in another country* ($n = 2$), *knowing and communicating with people in other countries* ($n = 2$), *integrating information from other cultures into classroom education* (n = 1), and *understanding the cultural backgrounds of international students* ($n = 1$). Analysis of the answers from survey two included the same themes, but the numbers of responses were different: *learning about education in another country* ($n = 5$), *educating students about other countries* ($n = 0$), *sharing educational experiences with others* ($n = 1$), *learning about teacher education in another country* ($n = 0$), *knowing and communicating with people in other countries* ($n = 0$), *integrating information from other cultures into classroom education* ($n = 5$), and *understanding the cultural backgrounds of international students* ($n = 0$). Three additional themes emerged from the responses in the second survey: *learning about cultural practices in order to teacher diverse students* ($n = 3$), *interacting with students and teachers in other countries* ($n = 1$), and *doing international projects in class* ($n = 1$).

To complete the data on students' beliefs about internationalization in teacher education, students were asked what knowledge should be required of teacher education graduates in order to prepare them to be productive and effective in an age of globalization. In survey one, four predominant themes emerged from the data: *technology skills* ($n = 5$), *educational practices in other countries* ($n = 3$), *knowledge of other cultures* ($n = 3$), and *knowledge of foreign language* ($n = 2$). The same four themes were also the most prominent in survey two but the numbers of responses increased in three of the themes: *technology skills* ($n = 6$), *educational practices in other countries* ($n = 5$), and *knowledge of other cultures* ($n = 4$). The theme, *knowledge of foreign language*, decreased to one response.

Web 2.0 Tools

The survey asked students to rate themselves from one to five (one being a novice and five being an expert) on their skills using wikis and online discussion boards, both of which can be described as Web 2.0 tools (O'Reilly,

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2005). In survey one, 52% ($n = 11$) of the students rated themselves at a two on wikis and 19% ($n = 4$) rated themselves at a three. No one rated him/herself at a four or five on wikis. In survey two, however, only 19% ($n = 4$) rated themselves at a two on wikis, and 57% ($n = 12$) rated themselves at a three. Ten percent ($n = 2$) rated themselves at a four on wikis. This shows an increase of 10 students (48%) rating themselves at a three or above on wikis. On online discussion boards in survey one, 33% ($n = 7$) rated themselves at a three, 24% ($n = 7$) rated themselves at a four, and 5% ($n = 1$) rated themselves at a five. For online discussion boards in survey two, 57% ($n = 12$) rated themselves at a three, 19% ($n = 4$) rated themselves at a four, and 14% ($n = 3$) rated themselves at a five. This shows an increase of six students (29% of the total) rating themselves at a three or above.

Downloaded By: [Schultheis, Klaudia] At: 17:03 17 December 2010

Fall of 2009

Analysis of the anecdotal evidence from the American students' reaction papers after the fall 2009 project revealed three themes: content, project results, personal reactions. The content theme contained comments about similarities and differences between the curriculum and instructional strategies of the four countries. Depending on the experiences and content of the groups, most students were surprised to see the similarities between the countries, and others, the differences. Laura commented, "I ended up with the realization that German and Bulgarian teachers are much like me ... I was surprised how similar our curriculum and life experiences were." The same student added, "I was refreshed to see that the curriculum topics were much the same, that all of us had guides for curricula, and that we all added our own supplements to the curriculum to make it more interesting for our students." Kathy reported, "Teachers have a greater influence in Germany over the curriculum than teachers in the United States do ... The German teachers seem to have leeway in what they teach their students." Comments on similarities outnumbered the comments on differences.

In the project results theme, students commented on what they had learned from the project. These results were varied. Several focused on communication. Amanda said, "I learned the importance of communication and working together." In a similar manner, Christine commented, "I have learned it is not easy to communicate with people you don't know, in a different country, with different time [zones], and a different language." "I also learned to be extremely patient in terms of response time and quality of responses," reported Kathy. Other comments were concerned with global perspectives. Amanda said, "Working with a student from another country allowed me the opportunity to see education from a different perspective." Laura said she would recommend this type of project to "all college students as a way of broadening our work and world views." Sarah observed, "This

is a great project to teach collaboration and to remind us that there are other perspectives of education besides just those in the U.S."

In the theme of personal reactions, students reported on their feelings about the project. Laura commented, "It made me feel more connected to a larger view of the work of teachers in that we all are helping to provide our world with more educated and functional citizens." Mary said, "I love the fact that I was able to learn so much about the German curriculum from interacting internationally with other students." Amanda remarked that this project "helped me become more aware. I will be able to bring a lot of what I learned into my teaching career."

DISCUSSION, IMPLICATIONS, AND RECOMMENDATIONS

Beliefs about Internationalization in Teacher Education

The responses from the survey questions that addressed the first research question—How does participation in an international study project utilizing Web 2.0 tools influence elementary pre-service teachers' beliefs about internationalization in teacher education?—show us that all but one (95%) of the students taking the survey believed a 21st century teacher should know about educational practices in other countries. The one student that answered *no* said in survey one, "I feel that teachers have enough things to worry about and to know for their own schools and classrooms." In survey two the same student wrote, "I think it is interesting to compare the teaching styles of other countries with those of our country. It is interesting to see the similarities and differences among completely different cultures." While replying *no* on both surveys, it seems this student did see some value in learning about education in other countries as a result of participating in the project. Two themes were predominant in the responses to providing a rationale for their answers: *to learn about other country's practices in order to improve ours,* and *to help teachers with students of different cultures*. It is interesting to note there was an increase in the numbers of responses for each of these themes from survey one to survey two.

When students were asked what internationalization in teacher education meant to them, a number of themes emerged from their responses. In the themes that were the same in each survey (*learning about education in another country, educating students about other countries, sharing educational experiences with others, learning about teacher education in another country*, *knowing and communicating with people in other countries, integrating information from other cultures into classroom education,* and *understanding the cultural backgrounds of international students*), the numbers of responses in each of the themes changed from survey one to survey two. Of note are several of these themes. *Learning about education in another country* decreased from six responses in survey one to five responses

Downloaded By: [Schultheis, Klaudia] At: 17:03 17 December 2010

in survey two. This shows that most of these students retained this belief throughout the project. *Educating students about other countries* changed from three to zero from survey one to survey two. These three students seemed to have been considering internationalization in teacher education from a student's viewpoint. After completing the project, they seemed to change their minds and dropped this belief. In survey one, only one student had a response that fit into the theme *integrating information from other cultures into classroom education*. But in survey two, the number of responses for this theme increased to five. This indicates these five students formed new opinions about internationalization in teacher education. The addition of three themes from the second survey shows students developed new understandings about internationalization, some of which included several of the same components as those discussed in the literature review for this paper. When students were asked what knowledge should be required of teacher education graduates in order to prepare them to be productive and effective in an age of globalization, again themes emerged which are reflected in the literature. The fact that there was an increase in responses to three of the themes shows that students' beliefs increased. These themes were also reflected in the literature. These responses are also not surprising, given that 52% of students reported having had some sort of international experience.

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Web 2.0 Tools

The second research question asked, How does participation in an international study project utilizing Web 2.0 tools affect pre-service teachers' skills using Web 2.0 tools? The data show the project helped students increase their skills using wikis and discussion boards. From survey one to survey two, students indicated their skills in using wikis and in using online discussion boards grew stronger. The largest increase was in the use of wikis, which many students were unfamiliar with prior to the start of this project. That no one scored himself/herself at a five on wikis is not surprising, since exposure to wikis was rather short term in this project.

Following up on informal comments from students after the fall 2008 project, we made a change in the Web 2.0 tools used for fall of 2009. The mixxt.com Web site was chosen for the fall 2009 project since it integrated several tools into one Web site. The use of this Web site was a bit more intuitive than the sites used the previous year; and according to informal conversations in class and comments on the reaction papers, the American students generally considered it user-friendly.

Reactions to the Project

Reactions to the project were overwhelmingly positive. Students realized that there were more similarities than differences in curriculum and instruction in

the four countries. This can help students see that people in other countries are not so "foreign" and that they have more in common with others than they realized. Multiple students commented on the valuable lessons they had learned about communicating with their peers in other countries and how the project had allowed them to gain different perspectives on education. In a global economy, this is surely a valuable skill to have.

Implications and Recommendations

As noted in the literature review, Bartell (2003) defined *internationalization* as "the process of integrating an international perspective into a college or university system" (pp. 45–46). We feel that an international perspective was integrated into the programs through this project. While the students in the fall 2008 project did not seem to form a comprehensive understanding of what internationalization in teacher education is, they all did seem to form an initial understanding of this concept, and their ideas of what internationalization is changed positively from the beginning to the end of the project. For a project that was just eight weeks in implementation, this is an acceptable result. The students' overall understandings of the concept of internationalization include many of the operational definitions of various authors discussed in the literature review.

The primary implication to emerge from this project is that we are not doing enough to internationalize our college of education programs and prepare our students for teaching in a global society. This is also reflected in the literature. Much more than an eight-week project in one class needs to be done to truly help students develop an understanding of internationalization and be able to carry this over to their own classrooms as they become teachers. However, this type of project utilizes technology that most universities and most students have readily available and is an economically feasible way to incorporate a global perspective into teacher preparation courses. Students do seem to benefit from such a project. They can gain a better understanding of global communications via the Web, experience first-hand learning with others whose primary language is not the same as theirs, and discover different perspectives for considering topics and issues in education.

There were technical issues to be resolved in the course of these projects; this can be expected in any project that utilizes computers and the Internet. It is important to have technical support options available to assist students as they begin using unfamiliar Web 2.0 technologies. In these projects, we had the timely and invaluable support of a German graduate student who translated the German discussion board for the Americans in the fall 2008 project, oversaw the wikis, organized and administered the mixxt.com Web site in the fall 2009 project, and answered students' questions via e-mail. This was an important factor in the success of this project.

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Even though there are challenges to overcome, we need to do more in our colleges of education to provide this international perspective for pre-service teachers. One way to do this is to address this on a college level, not just in individual courses by individual professors. At the University of North Carolina at Charlotte, a college-wide effort is underway to add international components to all the programs in the College of Education. This has been facilitated through a grant from the Longview Foundation. Funds from a grant such as this can be used for curriculum development, sending professors to conferences to meet potential partners, and for program evaluation.

Because of the differences in the semester start and stop times in the four countries involved in these projects, an eight-week window in the fall was the only feasible time to implement this project. Semester start and stop times, as well as exam schedules, can make finding common times in which to work together difficult. Establishing partnerships with institutions in all parts of the world needs to be accomplished to provide a wide range of possibilities. The biggest challenge comes in finding international partners with whom to work. Attending international professional conferences with suitable emphases is one way to make contacts and find partners. Using the connections foreign-born professors in our own universities have is another way to increase the pool of potential partners.

There are two other challenges to be considered in undertaking an international project. A project such as this has to be incorporated into already full university curricula or take the place of an existing project. This is an issue that must be decided at each institution and this is where curriculum development funds can be helpful. Because many American students are not fluent enough in a foreign language to easily communicate with native speakers, finding partners who can also communicate in English is important for American students. Because English is gaining popularity as a second language in many countries, this is not always a problem. Many students in other countries are eager to practice their English and this type of project gives them a perfect opportunity to do so.

Projects such as these are a start, but more ways need to be found to bring pre-service teachers from different countries together so that they can learn from and with each other. With the technologies available today, this should not be difficult to accomplish. We believe that if providing our future teachers with an international experience is important, then these challenges can be overcome. The task we have set forth for ourselves is to continue working to make the IPC a noteworthy and valuable learning experience for our teachers in training.

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APPENDIX A

Survey

1) What foreign languages do you speak well enough to hold a conversation on at least a basic level? Please check all that apply.

- ☐ Bulgarian
- ☐ Chinese
- ☐ English
- ☐ French
- ☐ Germany
- ☐ Italian
- ☐ Japanese
- ☐ Portuguese
- ☐ Romanian
- ☐ Russian
- ☐ Spanish
- ☐ I don't speak another language well enough to hold a conversation on a basic level.
- ☐ I don't speak another language at all.
- ☐ Other:

2) What foreign languages do you know to the extent you can communicate on at least a basic level through writing?

- ☐ Bulgarian
- ☐ Chinese
- ☐ English
- ☐ French
- ☐ German
- ☐ Italian
- ☐ Japanese
- ☐ Portuguese
- ☐ Romanian
- ☐ Russian
- ☐ Spanish
- ☐ I don't know another language well enough to communicate through writing on a basic level.

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- ☐ I don't know another language at all.
- ☐ Other:

3) What interests do you have in foreign countries? Please check all that apply.

- ☐ architecture
- ☐ cultural events (music, art, theater, dance)
- ☐ education
- ☐ food
- ☐ geography
- ☐ government
- ☐ history
- ☐ nature
- ☐ politics
- ☐ sports
- ☐ transportation

4) How do you get information about other countries? Please check all that apply.

- ☐ books
- ☐ Internet sources
- ☐ magazines
- ☐ newspapers
- ☐ personal contact with a person in another country
- ☐ television

5) Have you traveled outside of your native country? If you answer, "Yes," please answer the next question also.

- ☐ Yes
- ☐ No

6) If you answered "yes" to the previous question, please tell us to which country or countries you have traveled.

7) Have you participated in a study abroad program, either before college or during college? If you answered "Yes" to this question, please answer the next question.

- ☐ Yes
- ☐ No

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8) If you answered "Yes" to the previous question, please tell us the country or countries you studied in.

9) Have you had any other type of international experience? If you answered "Yes" to this question, please answer the next question.

- ○ Yes
- ○ No

10) If you answered "Yes" to the previous question, please tell us what other types of international experiences you have had.

11) Would you like to travel or study in another country in the future? If you answered "Yes" please answer the next question also.

- ○ Yes
- ○ No

12) If you answered "Yes" to the previous question, please tell us what might prevent you from traveling to another country or studying in another country.

13) What contact do you have with people in other countries? Please check all that apply.

- ☐ friends
- ☐ family (parents, grandparents, brothers, sisters, aunts, uncles, cousins)
- ☐ business or professional associates
- ☐ I have no personal contacts in another country.

14) If you answered "family," "friends," or "business or professional associates" in the previous question, please tell us what type of contact you have had.

- ☐ writing letters or postcards
- ☐ making telephone calls

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- ☐ personal visits in the other country
- ☐ sending e-mail
- ☐ instant messaging
- ☐ texting
- ☐ video conferencing over the Internet

15) What does "internationalization in teacher education" mean to you?

16) Do you believe an elementary (or primary) teacher in the 21st century should know about educational practices in other countries?

- ○ Yes
- ○ No

17) Please tell us why you answered the previous question as you did.

18) What knowledge should be required of graduates of teacher education programs in order to prepare teachers to be productive and effective in an age of globalization?

19) How might international experiences (travel, study, e-pals, etc.) benefit an elementary education teacher?

20) How might teachers' international experiences benefit their students?

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21) How would you rate yourself on using the following software or Internet sites and programs? Please rate yourself on a scale from 1 to 5, 1 being a novice and 5 being an expert.

	1	2	3	4	5
PowerPoint	☐	☐	☐	☐	☐
Wikis	☐	☐	☐	☐	☐
Blogs	☐	☐	☐	☐	☐
Online discussions	☐	☐	☐	☐	☐
Facebook	☐	☐	☐	☐	☐
MySpace	☐	☐	☐	☐	☐
Online video conferencing	☐	☐	☐	☐	☐

22) Please help us evaluate this international project by indicating your agreement with the following statements.

	Strongly agree	Somewhat agree	Agree	Disagree	Somewhat disagree	Strongly disagree
I received sufficient support from my instructor to be successful in this project.	☐	☐	☐	☐	☐	☐
The project Web site was very useful to me.	☐	☐	☐	☐	☐	☐
The project blog was very useful to me.	☐	☐	☐	☐	☐	☐
The project wiki was very useful to me.	☐	☐	☐	☐	☐	☐
I learned technology skills in this project that will benefit me professionally.	☐	☐	☐	☐	☐	☐
This project contributed to my overall understanding of education in another country.	☐	☐	☐	☐	☐	☐
I would be interested in doing a similar project again.	☐	☐	☐	☐	☐	☐
I found working collaboratively online helpful in understanding my topic.	☐	☐	☐	☐	☐	☐
Developing new technology skills was a good outcome of this project.	☐	☐	☐	☐	☐	☐

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	Strongly agree	Somewhat agree	Agree	Disagree	Somewhat disagree	Strongly disagree
The experience of working with my peers in another country contributed to my understanding of my topic.	☐	☐	☐	☐	☐	☐
The experience of working with my peers in another country contributed to my understanding of students in other countries.	☐	☐	☐	☐	☐	☐
Getting the perspective of others while studying a topic was helpful.	☐	☐	☐	☐	☐	☐
Participating in this project has made me interested in traveling to another country.	☐	☐	☐	☐	☐	☐

23) Are you male or female?

- ☐ male
- ☐ female

24) What is your age? Please click on the appropriate age range.

- ☐ 18–28
- ☐ 29–38
- ☐ 39–48
- ☐ 49–58
- ☐ 59 or older

25) What country do you live in?

- ☐ Bulgaria
- ☐ Germany
- ☐ USA

26) At what stage of your teacher education program are you currently? Please check the appropriate answer. (For U.S. students, please count the number of semesters you have been in your elementary education program, not your total semesters in college.)

- ☐ 1st semester
- ☐ 2nd semester
- ☐ 3rd semester
- ☐ 4th semester

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- ☐ 5th semester
- ☐ 6th semester
- ☐ 7th semester
- ☐ 8th semester

27) The personal identifier given to me by my instructor is:

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