



COLLABORATIVE ELEARNING: AN ACADEMIC EXPERIENCE BETWEEN THE UNIVERSITY OF COSTA RICA AND THE UNIVERSITY OF KANSAS

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Volumen 11, Número Especial
pp. 1-27

Este número se publicó el 30 de junio de 2011

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COLABORACION EN LINEA: UNA EXPERIENCIA ACADEMICA ENTRE LA UNIVERSIDAD DE
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Allen Quesada Pacheco¹

Abstract: *The continuing improvements in the worldwide access to the Internet are rapidly improving the ability for international collaborative eLearning. The University of Kansas (KU) and University of Costa Rica (UCR) are developing eLearning strategies designed to establish meaningful and sustained relationships. We are investigating: 1) how to use technology and pedagogy to enrich social interaction and learning, 2) strategies and technologies for engaging students in collaborating on issues of mutual interest, 3) understanding how the quality of relationships can improve learning, 4) institutional issues and barriers related to implementing coursework, certifications and academic programs across international institutions. Our analysis indicates that student collaborate more when they can meet in live teleconferencing as opposed to relying solely of asynchronous email or threaded discussions for collaborative project. Participants reported that strategies that scaffold activities by beginning with clearly stated problems and achievable common goals, such as locating and ranking relevant web resources, contribute to richer collaborations.*

Key words: COLLABORATIVE GROUP WORK, ASYNCHRONOUS AND SYNCHRONOUS COMMUNICATION, E-LEARNING, TELECONFERENCING

Resumen: *El crecimiento continuo del acceso a la Internet, a nivel mundial, está mejorando rápidamente el aprendizaje internacional colaborativo en línea. La Universidad de Kansas (KU) y la Universidad de Costa Rica (UCR) están desarrollando estrategias de aprendizaje en línea para establecer relaciones significativas. El equipo está investigando: (1) la integración de la tecnología y la pedagogía de enseñanza para enriquecer la interacción social y el aprendizaje, (2) la integración de estrategias y tecnologías para incorporar a los estudiantes en actividades de colaboración acerca de temas de interés común, (3) entender cómo la calidad de la relaciones sociales pueden mejorar el aprendizaje, y (4) los eventos y barreras internacionales relacionadas con la implementación de los cursos académicos, certificaciones y programas entre instituciones internacionales. Nuestro análisis indica que los estudiantes colaboran más activamente cuando tienen encuentros reales en teleconferencias y no simplemente con la interacción asíncrona o discusiones en línea para los proyectos colaborativos. Los participantes reportan que las estrategias, que facilitan las actividades iniciando con problemas claramente establecidos y con objetivos alcanzables, tales como localizar y priorizar los recursos mas importantes de la Internet, contribuyen a enriquecer las colaboraciones.*

Palabras clave: TRABAJO COLABORATIVO EN GRUPO, COMUNICACIÓN SÍNCRONA Y ASÍNCRONA, APRENDIZAJE EN LÍNEA, TELECONFERENCIA

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Artículo recibido: 7 de mayo, 2010

Aprobado: 16 de junio, 2011

"The taxonomy of Collaborative E-learning is a framework for planning, teaching, assessing curricula, courses, projects and learning activities". (Salmons, J., 2006, p. 1)

1. Introduction

E-Learning, online learning or web-based training are different names which signify the use of the Internet to deliver education and training to the community. The success of international collaborative eLearning appears to be influenced by the ability of the team members to identify common meeting times for synchronous sessions. Our initial investigations indicate that the quality of international collaborations and jointly produced products are best served when schedules overlap using "Any Place, but Same Time" communication strategies and technologies.

The initial university partnership between the University of Costa Rica (UCR) in San José and the University of Kansas (KU) in Lawrence is designed to establish meaningful and sustainable collaborations among faculty, students and academic programs. The University of Costa Rica, established in 1943, and the University of Lawrence, established in 1866, have (both) grown in research in different fields and this new type of research related to social collaborations through the Internet, has proved that eLearning can produce positive effects in the production of group-generated academic artifacts .

Several collaborative sessions have been conducted with students from KU and UCR that have involved both virtual and onsite collaborative project development. We are investigating user interfaces and tools for developing affordable community-based Web frameworks that can be easily implemented to advance collaborative learning in international settings (see figure 1).

This paper addresses the implications of teaching and learning collaborations in academic contexts. It describes the practical application of international collaborative eLearning through a case study type of research and provides results of its effectiveness.

1.1 Teaching and Learning Collaborations

Strategic and responsible collaboration among faculty, students and academic programs on both the UCR and KU campuses has been fostered throughout the years. Faculty in both universities have been involved in online collaborative teaching activities that were designed specifically to improve the quality of teaching and learning in their courses and ultimately benefit the overall quality of programs. The faculty members have conducted research to extend their

research agendas, and both student populations have collaborated on projects in ways that they have expanded their international perspectives and content expertise. The academic programs have enriched their course offerings to meet the students' needs and interests.

Teaching and learning international collaborations can be seen from a transnational perspective. In other words, this means relating to or involving several nations or nationalities. Recently, researchers, scholars and practitioners have come to understand that not only is the world increasingly globalized, but transnational (Portes, 1997; Pries, 2004). That is, resources and people cross (McBurnie & Pollock, 1998) boundaries to increase their competence academically and purposely as follows: a) to get better access to education; b) to provide knowledge for cultural awareness and competence among educators; c) to reach impact on local higher education systems; d) to gain foreign qualification without moving from their country of residence; e) to look at options for human resource development; f) to expand course offerings, among others..

Accordingly, international collaborative eLearning falls into the trend of Transnational Education (TNE) insofar distance learning or virtual education is involved. Through international collaborations, students have clearly recognized the value of collaborating with students from different cultures in investigating different topics. Added to this, students who have access to multiple communication technologies and who have properly scaffolded challenges that culminate in meaningful knowledge artifacts, such as web reports, Wikis, and PowerPoint slides, have demonstrated significant growth in their knowledge and awareness of critical transnational issues.

Additionally, teacher collaboration has potential in international collaborative eLearning as a vehicle to professional development. Austin and Balwin (1991) have exemplified that "*people who collaborate work closely together and share mutual responsibility for their joint endeavor...It emerges from shared goals and leads to outcomes that benefit all partners*" (p. 21, cited in Smith, L., 2005). As professionals collaborate, they examine their practices together, make changes, reflect on their practices, promote collegial interaction, evaluate and refine their teaching. Through observation, documentation, and description of their on-line collaborative experience, immediate and long-term decision-making is fostered towards eLearning curriculum development. The feedback obtained from the participants in international collaborative eLearning (both students and faculty) provides the opportunity to make key instructional decisions and prepare needed classroom resources.

1.2 Collaborative eLearning

Ardil (2003) has stated that successful education programs accelerate the e-learning process through the active pursuit of knowledge, and help develop advanced thinking and reasoning skills through collaborating online. Salmons (2006) has restated this by defining collaboration as "*constructing knowledge, negotiating meanings, and/or solving problems through mutual engagement of two or more learners in a coordinated effort using Internet and electronic communications*" (p.2). Indeed, collaborative eLearning is a means for integrating efforts into one outcome as well as an opportunity for participants to learn from each other and transfer knowledge to innovate into new ideas and/or approaches, and to come up with new applications for better practices in their field.

The levels of collaboration for eLearning are paramount for its effective application and implementation. Salmons (2006) has explained that each level of collaboration is built upon the previous one in order to create multi-stage projects and to construct ICT (Information and Communication Technology) competencies and teamwork. These levels include dialogue, peer review, parallel review, sequential collaboration, and synergistic collaboration. At the dialogue level, participants exchange ideas in discussions or shared learning events. As they reach the peer review stage, teamwork involves mutual critique and the comments made on the on-line projects or assignments are based on peer input. Parallel collaboration proceeds by giving more responsibilities to the participants. In other words, each student must complete a component of the collective project or assignment. In the sequential stage, the final project is built upon each student's contributions by combining their ideas to create the final product.

In the last level of collaboration, the synergistic one, students integrate all contributions and use collaborative strategies at the fullest for the creation and presentation of an original product for online learning. These levels of collaboration have been experienced by students from KU and UCR in culminating papers or technology projects in the targeted themes such as global warming, aging, e-commerce, etc. The following example of a final project illustrates this level of collaboration (eBook).

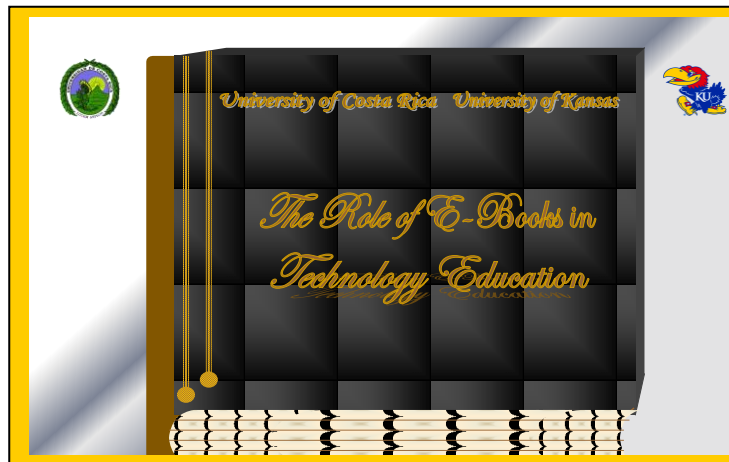


Figure 1. Sample final project for the synergistic stage

As students initiate and progress in these levels of collaboration, they employ reflective knowledge-building skills (KBS) or meta-skills/categories as explained by Stahl (1999, cited in Sorensen, 2004). These categories include *brainstorming* where participants introduce new ideas related to the topic; *articulating* where difficult and complex concepts are clarified, *reacting* where alternatives or amplified perspectives are provided as students discuss about the topics or concepts; *organizing* that allows participants to enrich previous knowledge with new knowledge for the emergence of new perspectives; *analysis* for comparing and contrasting different points of view; and *generalization*, that extends the existing and new knowledge into different environments.

1.3 Collaborative Student Projects

Active approaches to learning as constructivism sustain that learning is a social process that takes place through communication with others. The process of learning, according to constructivists, becomes interactive as students construct knowledge, formulate ideas into words, contribute and react to the responses of others. The concern of this paper is precisely the interactive models to learning as collaborative or group learning that encourage students to work together on academic tasks. This type of pedagogy focuses on the role of peer relationships in educational success rather than the direct-transfer or one-way knowledge transmission, very peculiar in traditional learning. Some examples of collaborative learning activities are seminar-style presentations and discussions (in which students are the teachers), debates, group

projects, simulation and role-playing exercises, Web pages, or other artifacts that demonstrate the knowledge and skills that are the subject of the course (Hitz, 1986).

Paurelle (2003) has explained that constructivism is often considered the ideal pedagogy for eLearning having more strengths than weaknesses for the following reasons:

- constructivist pedagogy sees the learner at the centre of the learning experience rather than the tutor. In the e-environment it is difficult to maintain the traditional role of the tutor, but more than that, the Internet forces the student to actively engage in their learning and gives them such a degree of choice – of what to study, where to study, how to study and with whom. It is thus accelerating the process of placing the student at the centre of the learning experience.
- constructivist pedagogy sees knowledge being built and applied according to individual experience. ELearning enables context-based, work-based learning.
- with the learner at the centre of the learning experience, students need to take responsibility for the learning. Online technologies easily allow students to record and reflect upon their learning.
- constructivist pedagogy sees the learner as an active participant in their learning experience rather than a passive vessel to be filled with information. E-learning forces learners to be adventurers seeking out information, making connections and building knowledge.
- constructivism sees learning as a social experience, hence dialogue and collaboration are crucial. ELearning easily enables communication between learners without the barriers of time and place. (p.1)

Murphy (1997) has highlighted that through eLearning, collaborative student projects derive from social negotiation between peers and the teacher. Because students construct their own knowledge, the role of the student is crucial and central in mediating and controlling learning. The primary sources of data that students use look for authenticity and real-world complexity. Equally, the strategies they select are of higher order thinking skills such as metacognition, self-analysis, problem-solving, regulation, reflection and awareness. Likewise, the role of the teacher changes from that of the controller to roles as guides, monitors, coaches, tutors and facilitators. In sum, collaborative and cooperative learning work hand-in-hand to expose learners to alternative viewpoints.

1.4 Collaborative Student Presentation / Teleconferences

According to Stahl (1994), one of the critical attributes to group/collaborative learning is that the cooperative behavior requires trust-building activities, joint planning, and an understanding of team support conduct. In addition, the grouping practices include procedures such as forming homogeneous or heterogeneous groups in terms of skills/levels/interests, role assignment; short or long term group assignments. It also involves the setting up of interdependence structures like goal achievement resources as well as division of tasks. Evaluation procedures cannot be disregarded from collaborative learning in order to reach levels of peer evaluation and self-reflection. According to Duffy and Cunningham (1996), the rationale of students working together is "*to promote dialogical interchange and reflexivity among learners*" (p.186)

As students collaborate in the development of their final or original artifacts, they have the opportunity to share alternative viewpoints, support each other's inquiry processes, and develop critical thinking skills that include the ability to reflect and improve on their own learning. That is the purpose of teleconferences and that is exactly what students from KU and UCR have experienced in their online collaborative projects.

For example, students collaborate on developing social awareness projects using a process that includes:

- 1) selecting topics that will enhance social awareness.
- 2) forming international collaboration groups who wish to investigate the topic.
- 3) defining the critical issues related to the topic.
- 4) locating and ranking web resources related to the topic.
- 5) developing a project and an evaluation rubric to engage students in exploring the topic.
- 6) producing an artifact (web site, wiki, powerpoint slides) that represents the teams' investigations.

Students present these projects under guidelines that specify advanced preparation and presentation structure and questions and answers (Q&A) time in a time and place where the students from joint university courses can observe and participate synchronously and asynchronously. These presentations will involve the distribution of papers, PowerPoint slides, web sites or other knowledge products and the use of synchronous teleconferencing software, such as Skype.

1.5 Co-Teaching Activities in Collaborative eLearning

The roles and competencies of educators participating in international collaborative eLearning programs as the one addressed in this paper are new and demanding. Goodyear, Salmon, Spector, Steeples & Tickner (2001) described these roles as content facilitator, technologist, designer, manager/administrator, process/facilitator, advisor, assessor and researcher. As the educators collaborate and enrich each other's programs, the quality of these distance education programs increase. Experts from different countries work in open, networked education and virtually reach students from different countries by exchanging and sharing their expertise with both students and other educators. Co-teaching can only be effective when the educators involved in eLearning organize the entire syllabus and put into practice teaching strategies appropriate to this type of pedagogy.

In co-teaching activities, the learner-centered model is adopted by the instructors. This type of model favors three main elements of assessment. One of these elements is individual self-assessment where students evaluate themselves using an established form or set of criteria. The other form of assessment is team collaborative assessment that allows students to evaluate a peer in a collaborative learning project, using a five-point scale to apply descriptors. And last but not least, the third type of assessment element is the facilitator's assessment which is characterized by being a continuous and interactive process that measures the achievement of the learner, the quality of the learning experience and courseware with continuing feedback. The assessment tools can be integrated throughout the project's evolution--process and evolving product become connected. Some examples of assessment tools in a learner-centered model in collaborative eLearning are checklists, collaborative assignments, conferencing, conversations, electronic formative feedback on collaborative group products, journals, peer assessment, rubrics, among others.

1.6 Research in collaborative eLearning

International Collaborative eLearning bridges the gap between teaching and learning practices online insofar research inquires into problems, technology issues, quality, success, effects, among others, related to this type of education for providing or building social communities through the internet. There are many other areas concerning collaborative eLearning that would indeed enrich this trend for teaching and learning.

Research on this international collaborative eLearning project is designed to: 1) extend and advance the research agendas of faculty and students at both UCR and KU and 2) provide a meaningful insight about the quality and success of teaching of the academic programs.

There are initially three general strands of research associated with this project. The interest in collaborative research is to investigate deeply into the following questions as follows: (strands vs questions)

1) Factors Influencing the Success of Online Teaching in International Settings: (Which collaborative tools do students in different cultures use? How are teachers integrating technology in curricula? Which technology integration strategies are perceived to have the greatest impact on learning?) 2) Research on Collaborative International Teaching: (What strategies are teachers and students using most often to advance learning? How are technology strategies integrated in curricula in different institutions? Which technology integration strategies are perceived to have the greatest impact on learning?) 3) Research on Educational Technology Integration in Diverse Settings: (What policies and procedures will optimize benefits to faculty, students and participating institutions?)

Undeniably, Collaborative teaching and learning (CTL) seek to promote student learning and foster higher levels of achievement. A way to strengthen collaborative eLearning can be obtained through collaborative research. Both sides, both ends of the process, both students and facilitators, have a lot to contribute, and this information will give the researcher answers for an improved implementation, increased access and increased performance of collaborative eLearning. On-the-ground experience of the participants can determine the development of skills and competencies needed for successful eLearning practices because it is them who receive and give, share, negotiate, and collaborate. For this reason, research studies should focus on the individual, the group and the coach or facilitator.

2. Methodology

2.1. Type of Research

This paper favors the case study type of research because it refers to the collection and presentation of detailed information about a particular participant or small group, frequently including the accounts of subjects themselves. This case study looks intensely at an individual or small participant pool, drawing conclusions only about that participant or group and only in

that specific context. This study is an "illustrative case study" because it makes the unfamiliar familiar (Becker, et al., 2005).

2.2. Participants

The subjects of this study were 28 students at the university level (Bachelor, Master or doctoral degree seeking), 16 from the University of Costa Rica (UCR) and 12 from the University of Kansas (KU). Their ages ranged from 25 to 35 years old. The areas of study of UCR students were TESL/TEFL, and KU students, Educational Technology, Educational Administration, Special Education, and TESOL. The students from UCR were Costa Rican. Those from KU were multi-cultural students. That is, these students were from Saudi Arabia, Perú, China, Brazil, Taiwan, South Korea, Turkey, Puerto Rico, Canada, Panama, and the majority from the United States.

2.3. Data Collection Techniques

In order to value the use of collaborative eLearning, the following non-observational instruments for gathering information were used: online survey (through surveymonkey.com) that asked the participants about the effectiveness of the new technologies of Information and Communications (TICs) as a means for preparing and presenting collaborative social awareness projects such as the use of video conferencing with the free software SKYPE, threaded discussions, email, chats, wikis, blogs, face-to-face / online interactive elements which are synchronous and asynchronous types of communication. The observational techniques for gathering information used were the online interviews to the participants and online (real time) presentation of final products that were developed by the participants through Skype conferencing between the UCR and KU during the duration of the course. Another observational technique that gathered information related to the development of the TICs referred to the reports, via email, about the progress and problems encountered throughout online collaboration. All of the data was collected in a period of one semester which was the duration of this online collaborative project between the UCR and KU.

2.4. Description of the instruments:

One of the instruments was a five-level likert scale survey where participants had to choose from the following categories:

1. Strongly agree
2. Agree
3. Neither agree nor disagree (neutral)
4. Disagree
5. Strongly disagree

This survey had 11 close-ended and 3 open-ended questions. The close ended items asked participants to validate the online presentations and the open-ended questions were intended to obtain results on the pro's and con;s about eLearning and collaboration. An example of the online survey is shown below.

The screenshot shows a survey interface with the following content:

Research on International Online Education Exit this survey >>

3. Presentation Evaluation

Describe your thoughts about the online presentation that you just participated in.

2. This online presentation...

	1. Strongly Agree	2. Agree	3. Neutral	4. Disagree	5. Strongly Disagree
was easy to see.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
was easy to hear.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
covered important content.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
had an international flavor.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
helped me to learn important ideas.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
made it easy for me to ask questions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
was as good as a face-to-face presentation.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
helped me to learn more about another language.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
made it easy for me to interact with the instructor.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
made it easy for me to interact with the other students.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
made me want to learn more about the speaker's culture.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Figure 2. On line survey <http://www.surveymonkey.com/s.aspx?sm=q8NgoDu7U96PwFjqPmd9Pw%3d%3d>

The following example displays the open-ended questions used in the survey. This type of instrument had the purpose of receiving direct and real feedback of online communication as the collaborative projects were developed.

Research on International Online Education

4. Your ideas about online presentations.

3. Compare this online collaboration project with a face-to-face collaboration. How is it BETTER? How is it WORSE?

4. Explain the advantages and/or disadvantages of international online collaboration with classes from a different country.

5. Other comments including what you liked or how we can improve these online collaborations?

<< Prev
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Survey Powered by:
SurveyMonkey

Figure 3. Open-ended questions about the online presentations

The results of this study were descriptive. To obtain trustworthy and reliable results from the five-level likert scale survey, each of the items in the questionnaire were counted and marked in a tally chart to avoid subjectivity or inconsistency in the results. An example tally chart was used:

Item:				
Rating Score	Tally marks per item	Number of tally marks	Multiply tally marks by the rating score	Score Total
1			x 1 =	
2			x 2 =	
3			x 3 =	
4			x 4 =	
5			x 5 =	
	Tally Marks Total		Score Total	
Score TOTAL is divided by Tally Marks Total = Average/mean				

Figure 4. Sample tally chart count for the five-level likert scale survey

In regards to the open-ended questions in the survey, each of the responses was placed in a comparison chart and the responses were recorded in the written form. The interviews were recorded via skype interviews (see interview sheet in the appendix section), and the other observational techniques to obtain data like personal opinions and reports were kept as the subjects sent the information via email. The final products were assessed through a holistic scale, considering peer, self and the instructors' assessment.

This is an example of the chart used to record written responses by the subjects from the survey.

Responses	Better	Worse
Face to face collaboration		
	Advantages	Disadvantages
Online communication		
		Other Responses
Comments		

2.5. Procedure of the case study:

The methodology of international collaborative eLearning deals with the production and presentation of collaborative final projects and the feedback provided by the participants. It also describes the procedure for expertise exchange through online co-teaching. In regards to the latter, organization between colleagues is paramount. This organization and preparation occurs prior to the online presentation of the educator. The following steps should be considered for a successful outcome: a) Open the presentation web page; b) Download the presentation (PDF) file; c) Launch SKYPE and connect to presenter; d) Set Screen Orientation as shown:

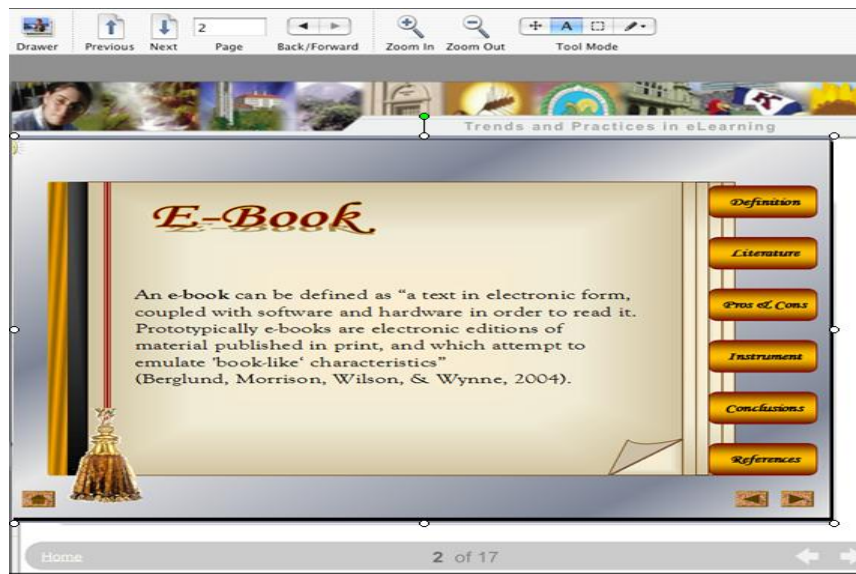


Figure 5. Screenshot of Video Conference using Skype.

Before the online presentation itself in front of the students, both the online professor and the instructor of the course should practice beforehand in order to ensure that content and delivery are in optimal conditions.

Co-teaching was part of the partnership between the University of Kansas and the Universidad de Costa Rica. For example, the *Technology Enriched Learning* course taught by Dr. Aust at KU used the National Educational Technology Standards (NETS) to guide the course syllabi. Students were required to produce an online portfolio that demonstrated their competency in each of the standards. One of the standards involved the application of technology resources to enable and empower learners with diverse backgrounds, characteristics, and abilities. Dr. Quesada at UCR worked with students from diverse backgrounds, mainly General English and TEFL, and one of the objectives of the course was understanding the benefits of using technology in language learning.

The students, on the other hand, should develop three stages: preparation, presentation, and questioning. In the preparation stage, items should be prepared to be posted on the web site at least 2 days in advance of the presentation date. The following example shows how groups were posted. The information for each group included the name of the project, description and critical issues, participants (name of participant, name of the university, email

address, and a brief information of the participant), and the evidence (word file, PDF file, PowerPoint presentation, video, wiki, or any other tool).

6. E-books ([eMail Group](#))

a. [Descriptions and Critical Issues](#)

How are e-Books being used? How the changing patterns of ebook and physical book is affecting learning? How available are eBooks world wide?

b. Participants



UCR: **Irene Marin** - iremarce@gmail.com - SKYPE: irene.marin

I am currently finishing my M.A. in TEFL at UCR. This is my second year as a Graduate Assistant of the Master's program. Besides, I work for the Program "Co-teaching youngsters and adults. Right now, I am also learning Portuguese. As part of my hobbies, I love swimming and reading books in English and Spanish. I favorite genres. I enjoy solving jigsaw puzzles at home. I believe that I am very curious regarding language; that is probably the reason why I love teaching. It gives me constant language research.



UCR: **Juan Pablo Zuriga** - vigilsoul@gmail.com - SKYPE: vigilsoul

I am an English teacher/student. I am enrolled at the M.A. in English teaching at UCR. Besides, I work as a teacher at public English conversation course program; I am a singer in Laus Deo Choir (www.lausdeocr.com). My teaching philosophy is simple: both student and teacher can learn from each other, for learning



KU: **Bander Almatari** - may1977@ku.edu - SKYPE: razan1977

My name is Bander Almatari. I am from Saudi Arabia. I have been in the U.S since 2005. I am working on my M.A in Curriculum and Instruction and I am also a Graduate Assistant. I am teaching Arabic as a second language and I am enjoying reading, writing and teaching.



KU: **Rachel Magario** - magario@gmail.com - SKYPE: magario

I am a Brazilian graduate student at Technology Education and Interaction Design. My background is on communications and geography. I concentrate in access to information and that is why e-books is a great topic of interest to me.

c. Evidence

■ [Web and Other Resources](#)

■ Description of the Student Activity ([Word File](#)). ([Accessible Word File](#)).

■ Student Project 1 powerpoint ([Powerpoint](#)).

Figure 6. Online International Student Group

One of the final artifacts, a word file, described the activity that students will participate in, a list of links to web resources that students will use to investigate their topic and a link to an example of a project that the students might create (PowerPoint, web or wiki site). To complete the preparation stage, students engaged in several asynchronous types of communications such as: email, threaded discussions, and synchronous types of communication such as chatting and videoconferencing through Skype. An example of a threaded discussion is shown below:

Re: Group 7: How do I Choose a Healthy Diet

Posted By: John <chiyang@ku.edu>
Date: Wednesday, 8 November 2006, at 9:33 a.m.

In Response To: [Group 7: How do I Choose a Healthy Diet](#) (Ana Marta Arguedas)

Lynette and I have been working on a brief proposal entitled, "Mom isn't here, how do I choose a healthy diet?" I am sure that it would be done by today's class and then we would be able to send you guys the initial ideas. I have a hunch that it's gonna be a great turnout.

Messages in This Thread

[Group 7: How do I Choose a Healthy Diet](#) (views: 44)
Ana Marta Arguedas -- Tuesday, 7 November 2006, at 3:54 p.m.
Re: Group 7: How do I Choose a Healthy Diet (views: 34)
John -- Wednesday, 8 November 2006, at 9:33 a.m.
[Re: Group 7: How do I Choose a Healthy Diet](#) (views: 11)
Lynette Hosek -- Thursday, 9 November 2006, at 10:03 p.m.
[Re: Group 7: How do I Choose a Healthy Diet](#) (views: 6)
John -- Friday, 10 November 2006, at 1:02 a.m.
[Re: Group 7: How do I Choose a Healthy Diet](#) (views: 13)
Daniela -- Friday, 10 November 2006, at 3:02 p.m.

Figure 7. Example of a threaded discussion, an asynchronous type of communication

In the presentation stage, which should take approximately 10 minutes, students must tell their names and current positions for each member of the group, and they should describe the activity they designed (title, the development environment, how the students collaborated, describe the student problem and activity), and finally present the example of the final artifact. The last stage, questioning, deals with questions and answers regarding the student social awareness activity and the entire planning and development. The online presentations could be done by launching Skype or by using videoconferencing. At the end of the presentations, students were expected to fill in an online survey about collaborative eLearning, mainly on aspects related to the online communication that took place through Skype.



Figure 8. Example of the online presentation through Skype. UCR students are on the top left-hand screen. KU students are on the bottom left-hand screen.

3. Results and Discussion

Indeed, it is hard to maximize the validity of the results in these types of studies. The aim of this case study was mainly to understand and validate the importance of international collaborative eLearning as a means for initiating and culminating team-based projects at the university level with similar standards as face-to-face on site collaboration. To provide trustworthiness in the results, both observable and non-observable techniques for gathering data were used. In other words, triangulation was used as a strategy to improve and strengthen the credibility of the findings. The following results are based on the online interviews, surveys, and questionnaires about the process of international collaborative eLearning.

In sum, students participating in international collaborative eLearning from KU and UCR have given feedback about this type of pedagogy. One of the main concerns of this study was the participants' opinions related to advantages and disadvantages of using collaborative eLearning vs face-to face (on site) collaboration. For some students, a collaboration project like this provides students with the opportunity to enrich their own ideas for creating a common project. Online collaboration enhances equal participation, interest and respect. It is also

designed to promote the success and learning of all group members through the use of computer tools.

A disadvantage, for other students, is the lack of personal contact that the persons involved in the project have and the unpredictable problems with software or hardware that inevitably occur. Concerning eLearning, most of the participants stated that it is an excellent experience to communicate and work with someone in another country and from another culture, and it allows for different perspectives to be expressed.

One of the participants expressed that through collaborative eLearning, students have the opportunity to explore different academic backgrounds. In linguistic terms, the participant expressed that students are exposed to different vocabulary and structures. This participant added that students learn to respect, evaluate and accept ideas different from theirs. This in turn, helps to promote student's critical thinking skills. Another participant stated that an online collaboration project definitely improves students' computer literacy and provides the opportunity to exploit students' previous knowledge. This participant also said that it also gives students ideas on how to use computer tools in their own classes. It allows students to build strong relationships with international students and this is a great source of motivation for further projects. For this participant, two main disadvantages were difficulty to agree on schedules for communicating with group members and difficulty to assess each member's work and effort.

Mainly, the disadvantages about collaborative eLearning were related to the difficulties in trying to listen to, see or hear each other through Skype because of connectivity, bandwidth or speed problems.

For the participants, face-to-face communication has the advantage of direct on-site contact with the participants of the project who live in the same area but not for international communications. "Face-to-face interaction is what is commonly done", expressed one of the participants. "*Face-to-face cannot be done with participants from other countries, unless it is done online through Skype or other tool.*" expressed another participant of the questionnaire. This participant expressed that face-to-face interactions may be improved by the use of multimedia. The difference is that in an online collaboration project, computers act as powerful instruments for communication and product-creation. Another participant noted differences between online collaboration vs face-to-face project. An example of the responses is as follows: "*When doing an online collaboration, there has to be a lot of communication in order to decide on a common place and time with all the members. With a face-to-face project, there are more*

opportunities to organize information but also to get to know all of the members of the team personally". (Thu, 12/7/07, 9:33 AM)

Most of the participants in this questionnaire agreed that one of the requirements for international collaborative eLearning projects is responsibility. They stated that it is harder to make decisions online than face-to-face because in face-to-face collaborations, you can push your teammates harder to fulfill the project because you can see them or call them more.

The online survey was analyzed in two ways: by obtaining the average or mean of the responses, based on the five-level likert scale, and by analyzing the percentage of responses on a 100 % basis.

The mean of the responses can be seen as follows:

Table 1. Survey items were rated on a 5 point Likert scale (1= strongly agree, 3= neutral, 5= strongly disagree); Fall N=28

	<i>Mean</i>
1	M=1.6
2	M=1.8
3	M=1.7
4	M=1.5
5	M=1.8
6	M=2.2
7	M=1.9
8	M=2.7
9	M=2.1
10	M=2.0
11	M=2.0
	<i>M=1.9</i>

Survey Items (abbreviated)

1. was easy to see.
2. was easy to hear.
3. covered important content.
4. had an international flavor.
5. helped me learn important ideas.
6. made it easy to ask questions.
7. was as good as a face-to-face.
8. learned about another language.
9. was easy to interact with the instructor.
10. was easy to interact with other students.
11. learned more about other cultures.

The average/mean results illustrate that most of the responses fell in levels one (1) and two (2) of the five-level likert scale of this study which were strongly agree and agree. Only items 6, 8, 9 were between levels two (2) and three (3) which were agree and neutral. The final average indicated that most of the subjects strongly agreed or agreed in the effectiveness of online communication for eLearning.

These same results were analyzed from a percentage point of view, too. The following results were obtained from adding the two main areas with the highest percentages: *strongly agree and agree*. (**The complete table is presented in table 1, appendix 2**). Based on this complete chart, a summary is presented below (table2). This table explains that 85.7 % of the students agreed that it was easy to see the live videoconference; 81.4 % stated that it was easy to hear. 85.8 % reported that it covered relevant content; 92.8 said that it had an international flavor; 82.2 said that it helped them learn new ideas. 60.7 % confirmed that it was easy to make questions; 71.5 % reported that it was as good as a face-to-face presentation; 57.1 % agreed that it was easy to interact with the instructor as well as the other students; 60.7 % stated that it made learners know about the speaker's culture. These results can be viewed in a bar graph on Appendix 1.

Table 2. Effectiveness of international collaborative eLearning

Effectiveness of Live Videoconference	Percent agreement	of Response Count
Easy to see	85.7 %	28
Easy to hear	81.4 %	28
Covered relevant content	85.8 %	28
Had an international flavor	92.8 %	28
Helped students learn new ideas	82.2 %	28
Easy to make questions	60.7 %	28
As good as face-to-face presentation	71.5 %	28
Easy to interact with instructor and students	57.1 %	28
Made learners know about the speaker's culture	60.7 %	28

The results of this study also considered the feedback given by the facilitator about the different projects as an additional source of information. While students were presenting their final projects, students received immediate assessment of their presentations.

The following is an example:

- A clear and illustrative title for the activity.
- A description that defines the development environment and technical requirements.
- A description of how the students will collaborate.
- A clear description of the problem and issue that the students will address.
- A description of the media that the students should use in their presentation.
- A list of web resources that researchers might draw while investigating your topic.
- A clear example of the resource(s) that students might create to reflect their learning.

Additionally, the students received a comment from the facilitator such as:

Example of the comments:

Distance learning was a well-conceived topic and good example of international collaboration. You have provided some excellent resources about distance learning worldwide. It is interesting to see how universities around the world move fast toward the distance learning. Your use of videos and PowerPoint slides offers increased opportunities to share and learn from many unique cultural perspectives. We were especially impressed with how well you collaborated with your partners on this project.

As a whole, the triangulation of results from the different observational and non-observational techniques for obtaining data in this qualitative study demonstrates that collaborative online projects is a powerful tool for connecting learning to action as students collaborate on real issues. Online communication technologies such as email, video conferencing, blogs, threaded discussions, discussion boards, among others, facilitate meaningful and authentic student learning. Online collaborative eLearning opens the boundaries for the development of broad, deep, creative, and cooperative projects and for the creation of e-Communities who can acquire the social skills to work across differences and distances.

Conclusion

The study reveals that there are still some technological issues that have to be improved to ensure the success of videoconferencing through Skype. Even though this software shortens the distance between international collaborators, connectivity issues affected 100 % effectiveness in some of the online sessions.

In addition, participants must be aware of the requirements for efficient communication skills for distance online learning such as responsibility, mutual engagement and organization, discipline, increased independence, self-directed preparation, and motivation. The instructor also plays a crucial role in this online medium of eLearning. The instructor should be involved in and be aware of student experiences and suggest ways to address it. In the absence of face-to-face learning, it is imperative for the instructor to establish rapport with students, make them feel comfortable with the online experience and encourage them to participate. The channels of communication between the instructor and the student must be open and constant. It should be driven by regular emails, active involvement in discussion forums, and chats.

The main advantages of international collaborative eLearning are narrowed to four main aspects: improved performance in comparison to face-to-face types of collaborations, increased access due to the fact that knowledge is crossing borders, flexibility for learners at the university level (any place, any time), and state-of-the art development of skills and competencies for TICs. As a matter of fact, one of the assets of developing an international collaborative eLearning project is having multicultural participants from partner universities. Certainly, eLearning creates multicultural awareness and encourages the formation of new social relationships or e-communities with new ideas that strengthen the development of e-projects.

Without a doubt, the *International Collaborative eLearning Project* is a new initiative which has significant teaching and research benefits for faculty, students and programmatic units at both the UCR and KU. The teaching and research partnerships will serve as models for collaboration across the two universities and at the same time increase the capacity for both universities to partner with other institutions. The fact that some of the participants have worked together previously and tested the technical requirements for this project increases the feasibility and chances for sustainable outcome from the project.

The collaborative activities in this project will create synergies by jointly offering courses to students from both universities, giving students access to a wider pool of academic options, creating opportunities for greater interaction and collaboration between staff and students.

Specific outcomes for the project include the following: a) updating and improvements to curricula, b) course content, and delivery; c) innovative uses of technology in teaching and research; d) expansion of the participating faculty's research; e) a lasting partnership between faculty and students at UCR and KU; f) increased capacity to partner with other institutions; and g) a Website that showcases students projects which demonstrate collaborative development

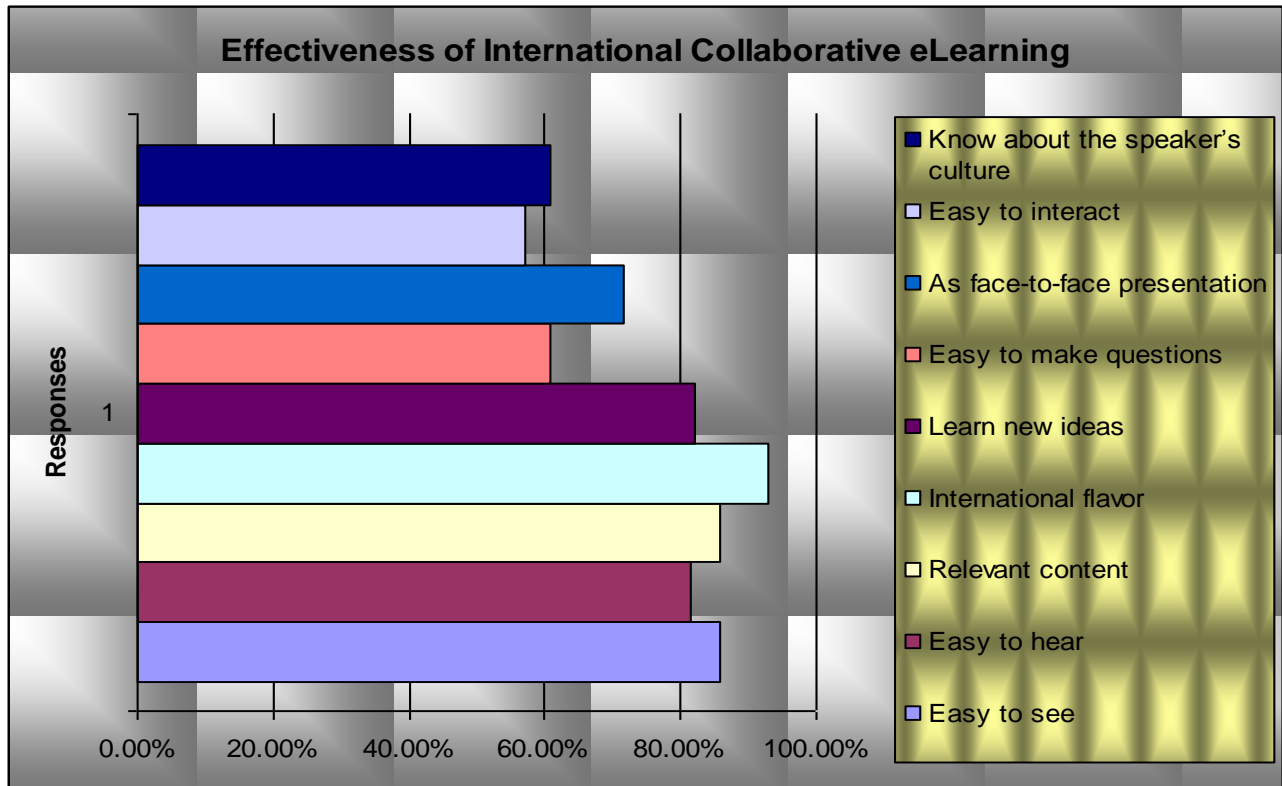
and consensus building. These outcomes are sustainable and they are aligned with the teaching, research and service missions of the participating departments and universities.

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Appendix 1



Effectiveness of International Collaborative eLearning

Appendix 2

Table 1. Sample survey. Effectiveness of online collaborative projects

Effectiveness of Live Videoconference	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Response Count
was easy to see.	57.1% (16)	28.6% (8)	10.7% (3)	3.6% (1)	0.0% (0)	28
was easy to hear.	37.0% (10)	44.4% (12)	18.5% (5)	0.0% (0)	0.0% (0)	27
Covered important content.	42.9% (12)	42.9% (12)	10.7% (3)	3.6% (1)	0.0% (0)	28
had an international flavor.	60.7% (17)	32.1% (9)	7.1% (2)	0.0% (0)	0.0% (0)	28
helped me to learn important ideas.	42.9% (12)	39.3% (11)	14.3% (4)	3.6% (1)	0.0% (0)	28
made it easy for me to ask questions.	25.0% (7)	35.7% (10)	28.6% (8)	10.7% (3)	0.0% (0)	28
was as good as a face-to-face presentation.	42.9% (12)	28.6% (8)	17.9% (5)	10.7% (3)	0.0% (0)	28
helped me to learn more about another language.	22.2% (6)	22.2% (6)	25.9% (7)	18.5% (5)	11.1% (3)	27
made it easy for me to interact with the instructor.	35.7% (10)	21.4% (6)	35.7% (10)	7.1% (2)	0.0% (0)	28
made it easy for me to interact with the other students.	42.9% (12)	17.9% (5)	35.7% (10)	3.6% (1)	0.0% (0)	28
made me want to learn more about the speaker's culture.	39.3% (11)	21.4% (6)	28.6% (8)	10.7% (3)	0.0% (0)	28

Appendix 3.

Sample Interview.

Answer the following questions according to your participation in the collaborative group you belong to.

1. What problems have you encountered in the process of communicating with your project group?
2. How was the communication carried out and how often have you communicated?
3. How was the online project carried out?
4. Were the objectives of the project accomplished?
5. What did you learn from this online collaborative experience?