

INTERNATIONAL COLLABORATIVE ELEARNING TO ADVANCE SOCIAL AWARENESS

Ronald Aust, University of Kansas, USA, aust@ku.edu

Allen Quesada, University of Costa Rica, Costa Rica, allenquesada@gmail.com

ABSTRACT

Advances in internet access and recent Web 2.0 technologies are rapidly increasing opportunities for universities to collaborate in international eLearning. This study of a collaboration between universities in North and Latin America focuses on sustainable eLearning in international settings. The study considers: 1) how technology and pedagogy can be used to enrich social interaction and learning, 2) strategies and technologies for engaging students in collaborating on international 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. This study found that international collaborations benefited more from “Any Place but Same Time” teleconferencing communications, as compared to relying solely of asynchronous email or threaded discussions for collaborative projects. 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 learning, eLearning, international education, collaborative teaching, teamwork .

1. Introduction

Authentic international eLearning activities can provide meaningful and motivating interactions with participants from diverse settings and cultures. Our approach involves mutually beneficial international university partnerships where students, faculty and academic programs share perspectives on course resources, curricula, and collaborative teaching methods.

Every university partnership will be unique and the overall goals may differ. We focused this investigation on a partnership between classes that cover topics on educational technology for teacher education and language learning. We began by reviewing curricula, syllabi, instructional strategies, technology resources, and facilities to assess how we could combine our strength to improve the quality of our courses and academic programs. We then drew on previous experience in designing interfaces and systems for eLearning content [1, 2], faculty professional development [3] and using technology to enrich language learning in rural urban K-12 schools [4]. We also benefited from a rich heritage and a 50-year formal partnership in international studies.

This paper addresses the implications of applying technology to create effective international teaching and

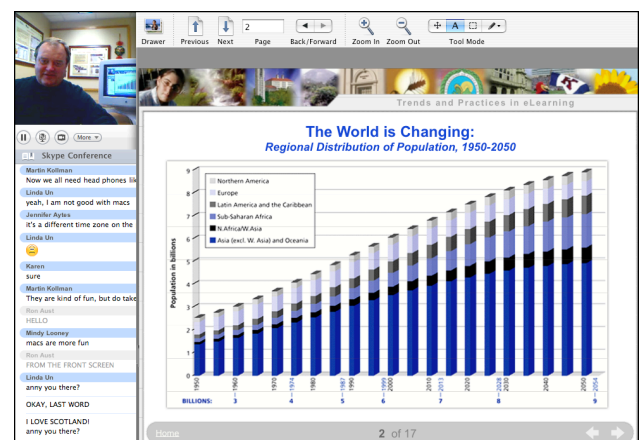
learning collaborations. It describes practical application of international collaborative teaching and constructivist activities where students collaborate in creating knowledge to addresses issues of international significance. This includes investigating the capacity of new technology and the pedagogy to support sustainable international open source collaborations. Thomas Friedman’s [5] describes open source approaches as key for levelling global societies and educational systems.

2. International Collaborative Teaching

After analyzing course syllabi and teaching strategies, the faculty partners determined the topics that they would teach. The primary instructor at the host institution taught most classes and the guest instructor taught at least one live and one online session at the host. This method capitalized on the understandings and experiences of each faculty member to enrich the instructional quality in both courses.

When presenting online, faculty posted their presentations in advance so that students could download the materials before the presentations. We sought to develop an affordable strategy that employed standard audio equipment, video cameras, free teleconferencing software (Skype) and a readily accessible (PDF) format for presentation. The presentations typically lasted about 40 minutes with 15 minutes for questions. As our experience increased we began to add pre and post activities to augment the sessions where students were asked to review notes, locate materials in advance, and provide follow-up reports. Figure 1 shows the layout for the online presentations. Students can see the instructor in the upper left corner with the chat board below and the PDF presentation on the right side of the display screen.

Figure 1: Online Collaborative Teaching



3. Transnational Perspectives of eLearning

Our interpretation of transnational eLearning begins with the premise that partnerships between institutions will be mutually beneficial where faculty, students and programs contribute significantly in advancing learning environments. This differs considerably from descriptions of “off shore” transnational education [6] where sending institutions are located in a country different from where the receiving institutions’ learners are based. We prefer the literal interpretation of transnational education as “education that transcends national boundaries” without the diminishing stipulation sending and receiving status. This interpretation involves faculty, students and institutions growing together in mutually beneficial learning environments.

Recently, researchers, scholars and practitioners have come to understand that not only is the world increasingly globalized, but transnational [7, 8]. That is, resources and people cross boundaries: a) to get better access to education; b) to provide knowledge for cultural awareness and competence among educators; c) to reach 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.

International collaborative eLearning falls into the trend in transnational education. Through international collaborations, students clearly recognize the value of collaborating with students from different cultures in investigating topics and producing artifacts that demonstrate significant growth in their knowledge and social awareness of issues with international significance.

4. Collaborative International Projects

In addition to sharing teaching presentations we also sought to engage students in activities where they collaborate to construct new knowledge. Drawing on the philosophies of Piaget [9], Papert [10], Bruner [11], and Vgotsky [12], constructivist approaches assume that the most meaningful learning occurs when learners are actively involved in mentally constructing new knowledge. Rather than the one-way “pouring in” of knowledge that typifies direct instruction, constructivist’s pedagogy focuses on peer relationships, the context, the learning environment and learners’ beliefs.

Constructivist models of international learning encourage students to work on real-world problems of international significance. This type of pedagogy focuses on the role of peer relationships and interactions rather than the direct-transfer or one-way knowledge transmission in traditional direct instruction. Examples of collaborative learning activities are seminar-style presentations, debates, group projects, simulation and role-playing exercises, web pages, or other artifacts [13].

According to Stahl [14], effective cooperative behavior requires trust-building, joint planning, and an understanding of team support. In addition, the grouping

practices include forming groups in terms of skills, levels interests, and role assignment. It also involves establishing interdependence structures such as goal achievement resources as well as division of tasks. Duffy and Cunningham [15] indicate that collaborative learning should also involve peer evaluation and self-reflection.




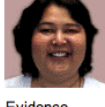
According to Salmons [16], collaborative eLearning should evolve through multi-stages to build knowledge, communication competencies and teamwork. These levels include dialogue, peer review, parallel review, sequential and synergistic collaboration. At the dialogue level, participants exchange ideas in discussions or shared events. As they reach the peer review stage, teamwork involves mutual critique and comments concerning projects or assignments. Parallel collaboration proceeds by giving more responsibilities to the participants. In other words, each student completes a component of the collective project or assignment. In the sequential stage, the final project is built upon the student contributions by combining ideas to create the final product.

Our students came from diverse geographic and cultural settings yet they ventured into collaborative eLearning willingly. Students from both universities worked on at least one collaborative social awareness project involving the construction of knowledge requiring mutual understandings on a common theme with international significance. For example, students explored question of Rainforest Destruction, Transmigration, Bilingualism, eBooks, and Central American Free Trade Agreement (CAFTA). Once the teams were organized, they use email, threaded discussions and teleconferencing to explore the issues, collect information and create new knowledge artifacts that reflects their understandings. Depending on their technical skills and preferences these products included papers, PowerPoints, wikis, youtube videos and websites.

Figure 2: Online International Student Group

E-books (eMail Group)
Descriptions and Critical Issues
How are e-Books being used? How the changing patterns of ebook is affecting learning?
How available are eBooks world wide?

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 Assistant of the Master's program. Besides, I work for "Conversation Courses" teaching youngsters and adults. I love swimming and reading books in English and Spanish.
	UCR: Juan Pablo Zuriga - vigilsoul@gmail.com - SKYPE: vigilsoul I am an English teacher/student. I am enrolled at the M.A. in English Besides, I work as a teacher at public English conversation course love music; I am a singer in Laus Deo Choir (www.lausdeocr.com), My philosophy is simple: student and teacher can learn from each other
	KU: Bander AlMatari - may1977@ku.edu - SKYPE: razan1977 My name is Bander Almatari. I am from Saudi Arabia. I am working on my M.A in Curriculum and Instruction Graduate Teaching Assistance. I am teaching Arabic
	KU: Rachel Magario - magario@gmail.com - SKYPE: magario I am a Brazilian graduate student at Technology Education back ground is on communications and geography. I concentrate on line and that is why e-books is a great topic of interest to me.

Evidence

- Web and Other Resources
- Description of the Student Activity ([Word File](#)) ([Accessible Word File](#)).
- Student Project ([Powerpoint](#)) ([Ebook Web](#)) ([Movie](#)).

In this example of a social awareness project group, each member of the group has created a personal profile including their email and Skype address. There is a description of how the project evolved including the project objectives, collaboration, topic description, and critical issues. As evidence of their investigation and new knowledge created, they provided a collaboratively developed PowerPoint, website and movie about eBooks.

During the development process, the students engaged in both synchronous communication (often using Skype) and asynchronous communications using email and threaded discussions. Threaded discussions organize the group's communication into easy to read messages threads with new ideas and responses. Students responded to an ongoing discussion about a set topic (graph, chart, equation, image, chapter or readings). As students discuss their projects, they were also creating a record of their comments, ideas, opinions, and suggestions. The following excerpt shows who posted comments, the posting date, and number of viewers.

Figure 3: Sample Threaded Discussion

[Thread]	[Respond]	[Index]	[Prev]	[Next]
Re: Group 7:	How do I Choose a Healthy Diet			
Posted By:	John <john@xyzuniversit.edu>			
Date:	Wednesday, 8 Nov. 2008, 9:33 AM			
Response To:	Group 7: How do I Choose a Healthy Diet (Ana Marta)			
	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 initial ideas. I have a hunch that it's gonna be a great turnout.			

As students collaborate in the development of their knowledge 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.

One benefit of international collaborative eLearning is engaging participants from partner universities in diverse cultural perspectives. In our case native countries included: Saudi Arabia, Peru, China, Brazil, Taiwan, South Korea, Turkey, Puerto Rico, Canada, Panama, and several of the United States. This eLearning environment creates multicultural awareness and encourages the formation of new social relationships.

Team Work Procedures

While completing the collaborative projects, the students work in teams of usually 2-5 participants. They select a topic and demonstrate their ability to work collaboratively in establishing goals and delegating responsibilities. Topic selection is important. In our case the topic should relate to the content area that at least

some member(s) of the group aspires to teach. The topic should also engage students in a collaborative discussion that relates to current social issues in their community and can be generalized globally. The global topics should be comparative in nature and allow group members to contribute their own unique local perspectives. Sample topics: food, family, traditions, holidays, entertainment, comedians, economics, careers, climate change, environmental protection, tourism, pop culture, poverty, diseases, music, musicians, sports, athletes, habitation, natural disasters, evolution of languages, accessibility for all individuals, different cultures, and languages.

Using email, threaded discussion, Skype and other communication tools, students communicated with their team members and determine how they will collaborate. They met online with their project team to discuss the nature of the student activity, what artifacts they would create and the roles that team members would adopt.

5. Method

Participants:

The investigation involved two faculty and 52 student participants, 22 from UCR and 29 from KU who ranged in age from 22 to 58 years with a mean age of 27. Data collection took place during the Summer (N=24) and Fall (N=27) with 16 male and 36 female participants. The multicultural nature of participants included natives from Brazil, Canada, China, Columbia, Costa Rica, Panama, Peru, Puerto Rico, Saudi Arabia, South Korea, Taiwan, Tunisia, Turkey and at least 9 of the United States.

Survey Instrument:

We designed an online survey on international collaborative eLearning using a 5 point likert scale (1=strongly agree, 3=neutral and 5=strongly disagree) with items regarding the technical clarity and relevance of presentations, comparisons to traditional face-to-face presentations and the success of interactions among the instructors and other team members in the collaborative knowledge construction activities. The survey collects information on Age, Gender, Online Course Experience, Academic Major and Institutional Affiliation. The survey also included open-ended questions including: "How does this online collaboration activity compare to a traditional face-to-face educational collaboration. How is it better? How is it worse? What are the advantages and/or disadvantages of international collaborations?"

Procedures:

Although the faculty partners had previous experience in the collaborative co-teaching, the collaborative knowledge construction was a new activity that we first piloted in the spring semester. Both of our courses were held in lab environments, and we conducted site visits midway during the semester to meet with faculty, plan activities and review technical configurations. We administered the survey at the end of the Summer and Fall semesters using the online SurveyMonkey system.

6. Results

We compiled descriptive and analytical statistics using SPSS from the survey data. After reviewing survey results from the summer (N=24) semester and responses to the open ended items we made several adjustments to our courses and strategies and administered the survey at the end of fall semester (N=27). Table one shows the results on items from the survey on collaborative eLearning. Means for the summer semester class were near “neutral” (M=2.9). The fall semester means (M=1.9) were clearly lower indicating, “agree” to “strongly agree.” The significantly lower values for the fall semester indicate that the participants agreed more strongly with the positively worded items.

The results showed that older students rated many aspects of the collaborative eLearning activities higher than the younger student in the course. With Pearson correlations on 47 subjects (some missing age data) we found that the item “...covered important content” was negatively correlated with age (-.326, p=.029). In other words, older participants agreed more with these positively worded items. We also found significant negative correlations with age and items: “had an international flavor” (-.336, p=.024), “helped me to learn important ideas” (-.412, p=.005), “was as good as a face-to-face presentation” (-.328, p=.028), and “made me want to learn more about the speaker's culture” (-.352, p=.018).

Table 1. Collaborative eLearning Across Semesters

	Sum	Fall	Sum	Fall	F	Sig.
1	M=2.2	M=1.6	SD=.82	SD=.84	5.948	P=.018*
2	M=3.5	M=1.8	SD=.93	SD=.75	49.41	P=.000**
3	M=2.3	M=1.7	SD=.99	SD=.81	4.064	P=.049*
4	M=2.4	M=1.5	SD=.75	SD=.64	9.004	P=.004**
5	M=2.7	M=1.8	SD=.81	SD=.85	16.33	P=.000**
6	M=3.0	M=2.2	SD=.91	SD=.97	7.33	P=.009**
7	M=3.3	M=1.9	SD=1.2	SD=1.0	18.83	P=.000**
8	M=3.3	M=2.7	SD=1.1	SD=1.3	2.56	P=.116
9	M=3.3	M=2.1	SD=1.3	SD=1.0	12.50	P=.001**
10	M=3.0	M=2.0	SD=1.2	SD=.98	11.14	P=.002**
11	M=2.4	M=2.0	SD=1.1	SD=1.1	1.016	P=.318
	M=2.9	M=1.9	SD=1.0	SD=.93		

Survey items were rated on a 5 point Likert scale (1= strongly agree, 3= neutral, 5= strongly disagree)
*P<.05, **P<.01; Summer N=24; Fall N=27; F(1,50)

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. I learned more about other cultures.

Comparisons across institutions revealed a significant difference for only one survey item with the 22 UCR participants rating the collaborative eLearning presentations somewhat “easier to see” (M=1.6) than the 29 KU participants (M=2.1) (F 1, 50= 5.590; p=.022). The ANOVA analysis did not reveal significant difference on the survey items for the factors of gender, online course experience or academic major.

The open-ended comments from the summer semester generally began with positive comments about the value of collaborating with individuals from a different nation. For example, one participant listed advantages of “intercultural communication, language practice, losing fear about interpersonal relationships, opportunity to challenge our knowledge and compare it with other university students.” Another participant for the summer session described that they, “learned about important ideas in another culture; learned about their technology; how they learned and what they were learning.” The disadvantages listed by the summer participants centered on problems in communicating with their partners (37 references). These communication comments related to technical difficulty in hearing or seeing their partners and especially to scheduling difficulties. One participant explained that, “class meeting times can not match up ... and communication was primarily through email.” Another participant explained, “There are moments when ambiguity could affect the normal communication process, since it is impossible to take into account face gestures.” Several comments asked to, “Have the class times overlap more to allow for more communication with other students.”

Comments from the fall semester were more positive. When asked to compare this online collaboration project to a face-to-face collaboration, one participant explained, “It is better because we share information from other countries and learn from each other, and this interaction is not always possible.” Another commented, “It is better in the sense that it is a very good example of how technology can be used effectively in a multicultural learning,” and “it is a perfect way to put into practice everything you have learned about a language, cultural, personal and academic aspects.”

While the fall semester comments include few references to technical problems, again there were many references to scheduling challenges. Despite the fact that there was some overlap time, one participant mentioned, “we can not agree on a date/time to chat online because of studies, work, time, and Internet access.” Another participant explained, “sometimes it is hard to agree on a time and day to work together... maybe the students can have a designated time to communicate.”

7. Conclusion and Recommendations

The insights drawn from the summer investigation guided our development of the collaborative knowledge construction model that we used in the fall (Figure 3).

The educational events are scaffolded to establish confidence, develop requisite technical skills, and build trust, communication and teamwork in collaborative knowledge construction. Because team members did not always share the same schedule or place we clearly defined the educational events in terms of expected outcomes. This allows for checkpoints for each event so that all class members could understand and learn from each other. We used a team planning web site (Figure 2) with a description of the team's topic, member photos, brief biographies, email and Skype addresses as well as ranked list of information sources and the final knowledge resources. We used teleconferencing (Skype) to present and confirm outcomes at each event across universities.

Figure 2: Stages in Implementing International Collaboration Online

Implementing Online Collaboration	
1	Select Topics <i>List of topics and draft description(s).</i>
2	Form International Teams <i>Team member's bios, photos, & addresses.</i>
3	Define Critical Issues Goals and Evaluation <i>List goals and evaluation rubrics.</i>
4	Identify and Rank Information Sources. <i>Post top 10 web or other information sources.</i>
5	Develop Prototype and Revise Resource(s) <i>Web, Wiki, Concept Maps, PowerPoint ...</i>
6	Demonstrate & Celebrate Accomplishments <i>Present and Post Knowledge Resource(s)</i>

During the initial teleconference for the knowledge construction activity, the students 1) select and describe a list of possible topics. Next, they teleconference to 2) form teams and exchanged biographical and other information. After working together as a team, they present their 3) goals and the evaluation rubrics that they will use to assess the success of their final knowledge resource(s). The next step asked team members to 4) identify and rank the information resources in a top 10 list for their topic. During the early pilot trials, we asked students to post an unranked list of web resources. We added the requirement to rank the list in order to develop communication and teamwork early on using an apparently low stakes task that became more demanding than we first anticipated. Imagine that your team has decided to investigate the impact of global warming. You Google "global warming" and after receiving 29 million matches, you must determine which web site is most important. Your teammates in another country are also wading through millions of matches and you must agree on which is the first, second and third most important web site. What began as a simple listing of web sites became a significant research and team building activity.

Following principals of rapid prototyping, team members 5) prototype review and revise the knowledge resources which might include web sites, wikis, concept

maps with inspiration, graphical diagrams, or PowerPoint slides that represent the collective knowledge of the team. The teams present their prototypes in a teleconference to peers from both universities who are encouraged to provide constructive reviews, alternative viewpoints, and the ability to reflect and improve on their own learning.

The culminating outcome is to 6) post and present one or more mediated knowledge resources. This event has three stages: preparation, presentation, and questioning. In the preparation stage, items are posted at least 2 days in advance of the presentation. These presentations can become highly motivating when guests are invited. One of the more rewarding surprises was when two students from Costa Rica became so engaged in their final project work that they decided to personally finance a trip to Kansas, in the cold of November, so that they could meet with their team members and present their final projects in person.

We did not initially anticipate that older students would post higher ratings for several items, including "had international flavor, want to learn more about culture, and was as good as a face-to-face presentation." than the younger "digital native" students. This might be because the non-resident foreign students are somewhat older and they highly value transnational exchanges. It might also be because the mean age for the improved design fall semester (M=29.8) was higher than the spring (M=24.8). These findings suggest that collaborative transnational exchanges will be appreciated by learners of many ages.

Many eLearning advocates [17] tout "Any Time /Any Place" advantages of eLearning. Transnational collaborative eLearning requires that learning participants be in different places. As Robin Mason, [18] explains, "the strongest arguments (for eLearning) relate to the benefits of a global student body... including: working with students from many different countries, shared expertise, access extended to educationally disadvantaged and multi-cultural course content." On the other hand, results from this investigation do not support the notion that asynchronous "Any Time" eLearning is as effective as synchronous eLearning. Humans are social. They like to meet. There is a give-and-take quality to synchronous communication that enhances immediacy [19] and fosters more absorbing, more rewarding, more now learning. Thus, we advocate an "Any Place Same Time" model for collaborative eLearning.

This jointly-sponsored teaching and research partnership serve as a model for collaboration that engage researchers in worthwhile activities and tangible deliverables including joint teaching, curricula, course improvements and co-authoring of research that neither side might accomplish on their own. These initiatives also foster a greater appreciation for diversity among faculty and students. Moreover, each unique transnational partnership will increase capacity for open source collaborative eLearning.

References

- [1] R. Aust & R. Isaacson, Designing and evaluating user interfaces for eLearning. In Richards, G. (Ed.), *AACE World Conference on e-Learning in Corporate, Government, Healthcare, and Higher Education*, Chesapeake, VA, 2005, 1195-1202.
- [2] R. Aust & E.L Meyen, The design and development of a scaleable e-Learning authoring system. *Proceedings of the IASTED 2005 Web-Based Education Conference*, Grindelwald, Switzerland, 2005, 225-229.
- [3] R. Aust, B.W. Newberry & J.O'Brien, Learning generation: fostering innovation with tomorrow's teachers and technology. *Journal of Technology and Teacher Education*. 13(2), 2005, 167-195.
- [4] A. G. Quesada & R. Aust, Cyberl@b: Technology enriched English language learning in Costa Rica. *Proceedings of the IASTED Ninth International CATE Conference*, Lima Peru, 2006.
- [5] T. L. Friedman, *The world is flat: A brief history of the twenty-first century* (New York: Farrar, Straus and Giroux, 2005).
- [6] L.A. Wilson & L. Vlăsceanu, Transnational education and recognition of qualifications. In *UNESCO-CEPES, 2000, Internationalization of higher education*, Bucharest, 2000, 75-85.
- [7] A. Portes, Immigration theory for a new century: Some problems and opportunities, *International Migration Review*, 31(3), 1997, 799–825.
- [8] L. Pries, Determining the causes and durability of transnational labour migration between Mexico and the United States: Some empirical findings. *International Migration*, 42(2), 2004, 1-57.
- [9] J. Piaget, *The psychology of intelligence*. (New York: Routledge, 1950).
- [10] S. Papert, *The children's machine : Rethinking school in the age of the computer*. (New York: Basic Books, 1994).
- [11] J. S. Bruner, The act of discovery. *Harvard Educational Review* 31(1), 1961, 21–32.
- [12] L. S. Vygotsky, *Mind in society: The development of higher psychological processes*. (Cambridge, MA: Harvard University Press, 1978).
- [13] S. R. Hiltz, The virtual classroom: Using computer-mediated communication for university teaching. *Journal of Communication*, 36(2), 1986, 95-104.
- [14] R. J. Stahl, The essential elements of cooperative learning in the classroom. In: *Clearinghouse for Social Studies Social Science Education*, (Bloomington IA, 1994).
- [15] T. M. Duffy & D. J. Cunningham, Constructivism: Implications for the design and delivery of instruction. In: Jonassen, D. J. (Ed.), *Handbook of Research for Educational Communications and Technology*, (New York: Macmillan Library, 1996, 170-198).
- [16] J. Salmons, *Taxonomy collaborative e-Learning* <http://www.vision2lead.com/Taxonomy.pdf>, (2006).
- [17] NASBE: *Any time, any place, any path, any pace: Taking the lead on e-Learning policy*. National Association of State Boards of Education (NASBE). http://www.nasbe.org/e_Learning.html, (2001).
- [18] R. Mason, *Globalizing education: Trends and applications* (London: Routledge, 1998).
- [19] R. LaRose, P. Whitten, Rethinking instructional immediacy for web courses: A social cognitive exploration. *Communication Education*, 49(4), 2000, 320-338.