

## Retrospective Analysis of a Virtual Worldwide Conference for eLearning

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*The TCC Worldwide Online Conference was launched in 1996 as an alternative to a traditional face-to-face conference. Travel costs to and from Hawaii and travel time to the middle of the Pacific Ocean would prohibit many from attending a technology conference. As advances in ICT improved the quality of the virtual conference experience and as travel budgets continued to shrink, the number of participants attending TCC increased five-fold over 15 years. The concern by TCC was to maintain a high level of satisfaction with the virtual conference with increasing attendance. An analysis of 5 years of conference evaluation data shows that the ratings for key conference indicators: content, theme, community, interaction and face-to-face comparison were consistently high. Key themes emerged from open-ended and interview questions and recommendations were made for conference organizers to maintain a high participant satisfaction.*

**Keywords:** virtual conference, online conference, e-learning, distance education, emerging technology

### Introduction

Virtual conferences began in the early 1990s as a cost-effective, time-efficient alternative to face-to-face conferences. Advances in ICT have made it possible for busy professionals to receive quality conference experiences while eliminating travel costs (Anderson, 1996). When done right, virtual conferences can be just as effective as a face-to-face conference (Kimura & Ho, 2008) and the quality of interaction can even be better than that found in a face-to-face conference (Minshull, 2006; Wang, 1999). The elimination of travel also saves in cost of time away from work when traveling to and from a conference (Anderson & Anderson, 2010). Travel to international conferences may take up to a day and for domestic travel, between 4 to 8 hours.

Early virtual conferences used email as the primary form of interaction between presenters and participants (Shimabukuro, 2000). By the mid-90s, the Web and synchronous tools such as text chat were additional features available to virtual conferences.

In 1996, Kapi'olani Community College (KCC) in Hawai'i, launched the Teaching in the Community Colleges (TCC) Online Conference. This inaugural TCC conference attracted nearly 250 participants from Hawai'i and the continental United States. Email was the primary form of interaction between presenters and participants. Subsequent TCC conferences added newer technologies such as Web discussion forums, synchronous chat, streaming video and audio conferencing (Ho, Kimura, & Narita, 2006). The 15th annual TCC (now called Technology, Colleges & Community) Worldwide Online Conference was held in April 2010. Over 1,300 participants from around the world used Elluminate Live, a web-based multimedia conferencing system, to interact synchronously through audio and text.

It is apparent that the growth of TCC participation since its inception, by a factor of five times, is due to the increasing costs of travel and the decreasing budgets of universities for professional development. As conferences grow in size, it is possible for a diminishing quality of experience by conference participants. Could this have happened to TCC? Has this virtual conference evolved to meet the growing needs of those attending?

The goal of the study was to determine the perceptions of conference participants over time and to detect any changes in interests and problems that may be useful to conference planners. Data collected from participant comments and interviews with TCC advisory board members was also used to make recommendations for the implementation of emerging ICT in future TCC conference activities.

## **Research Questions**

In the early years of virtual conferences, Neal (2002) questioned if online conferences would be as effective as traditional conferences in creating an environment for networking and a sense of "connectedness" with other participants. Other researchers have indicated that the advantage of virtual conferences over face-to-face conferences is the high level of interaction achieved through synchronous and asynchronous communication (Minshull, 2006; Santo, Kimura, & Thompson, 2006). Over the years, TCC has consistently tracked data on several key indicators to determine the quality of conference experiences reported by participants (Kimura & Ho, 2008). The key indicators became the focus of the quantitative research questions for this study:

1. Is the conference content of high quality?
2. Are the conference themes relevant to teaching and learning?
3. Is the online conference experience equal to or better than that of a traditional face-to-face conference?
4. Does the virtual conference environment promote a sense of belonging to a community of learners?
5. Is the quality of interaction with other participants and presenters valuable?

## **Research Method**

This study employed a mixed-methods approach to examine quantitative and qualitative data collected from TCC conference participants over 5 years. Participants were primarily faculty and professional staff from two and four year colleges from the United States and to a lesser extent from universities in Asia and Europe. In recent conferences, graduate students have participated in increasing numbers and are part of the sample for this study. A post conference survey has been used from the outset of TCC conferences to help conference organizers with maintaining and improving the quality of the virtual conference experience (Kimura & Ho, 2008). Since the TCC 2006 Worldwide Online Conference, an online version of the survey has been used to collect conference evaluation data. Participants were emailed a link to the survey a few days after the end of the conference. A reminder email was typically sent out two weeks after the initial request for completing the survey. Although the completion of the survey was anonymous, participants were given the option of leaving their email addresses to be eligible for a random drawing for small, incentive door prizes. Participant identification through email addresses was not factored into the analysis of data.

### **Data collection instruments**

The online evaluation survey consisted of 27 fixed-response items including 5-point Likert-type questions (Agree Strongly – Disagree Strongly), 4-point rating questions (excellent to poor), and multiple-response (check all that apply). In addition, 8 open-ended questions were included to gather qualitative data.

More qualitative data were collected through a post conference interview with several veteran TCC advisory board members. The board members responded to four interview questions that allowed them to reflect on their past experiences with TCC as a conference participant and advisor.

- Q1. When was your first TCC conference?
- Q2. What was the most significant change in TCC over the years as a result of changes in information technology?
- Q3. What kind of conference activities can a virtual conference like TCC offer that are unique?
- Q4. What suggestions do you have for integrating Web 2.0 technologies in future TCC activities?

### **Data Analysis**

Quantitative data were extracted from TCC Worldwide Online Conference surveys from 2006 through 2010 and imported into a spreadsheet. Seven items were selected for comparative purposes. For each Likert-type item, positive responses were combined (Agree Strongly – Agree and Excellent – Good) and percentages were determined over total responses. Two items were number counts drawn from participant attendance records and evaluation surveys submitted.

Qualitative data were coded from four open-ended questions that were extracted from the

conference evaluation surveys of TCC 2006 and 2010. The data were grouped into clusters of keywords or themes and then ranked by frequency of responses. Rankings were then compared between 2006 and 2010. Qualitative data from the interviews were collated and major themes that emerged were listed.

## Results

### 2006 to 2010 data

The quantitative data from five consecutive TCC Worldwide Online Conferences are reported in Table 1. In 2006, there were 650 registered participants for the TCC conference. The number of participants steadily increased over the years and for the 2010 TCC conference, the number grew to more than double (1,373) the number of participants from 2006. And, with the exception of 2007, the number of respondents who completed evaluation surveys remained proportional to the number of conference participants with about a 20 percent completion rate.

The content quality of the conference over the years has been rated extremely high with more than 96% of the responses falling in the “excellent” and “good” categories. Ratings for the relevancy of conference theme to teaching and learning were also high. In fact, over the past four years, ratings were consistently positive and ranged from 96.2% to 100% for responses in the “strongly agree” and “agree” categories.

The sense of belonging to a community of learners has been an important goal of the TCC Worldwide Online Conference since the outset and the responses to this item suggests a success in this area. Positive responses ranged from 75.2% to 84.1% indicating conference participants experience a strong sense of community. Related to a participant’s sense of belonging to a community is the value of interactions with other participants and presenters. In this regard, a consistently high percentage (81.3% - 88.9%) of positive responses were obtained for value of interaction. The final item observed in Table 1 asked participants whether the TCC online conference was equal to or better than a traditional face-to-face event. Over the past four years, a majority of participants agreed or strongly agreed with statement with percentages ranging from 68.9% to 78.4%.

**Table 1.** *TCC Conference Evaluation Survey Data 2006-2010*

Item	Response Type	2006	2007	2008	2009	2010
No. Participants		650	855	1088	1345	1373
No. Respondents		134	88	208	298	287
Content quality	R	98.50%	98.80%	96.40%	96.80%	96.30%
Conference theme	L	88.10%	100.00%	96.20%	97.90%	97.90%
Feeling of belonging to a community	L	76.10%	84.10%	76.30%	75.20%	80.90%
Interaction with others	L	81.30%	87.40%	81.60%	88.90%	85.30%
Compared to F2F	L	NA	78.40%	68.90%	75.50%	76.80%

Note: L = Represents a Likert scale, added total of Strongly Agree and Agree

R = Represents ratings that include Excellent & Good combined

## 2006 compared to 2010 data

For the qualitative portion of this study, three open-ended survey questions were used to compare data collected from the 2006 and 2010 TCC Worldwide Online Conferences.

### *Conference strengths* (see Table 2)

The top categories of strengths mentioned by participants of the 2006 and 2010 conferences were very similar. In 2006, the quality of content offered through presentations and keynote sessions was mentioned most often followed by comments made about the convenience, flexibility, cost-effectiveness, and accessibility of a virtual conference. For 2010, the frequency of comments was reversed with the “virtualness” of the conference mentioned most frequently as strength. The next two strengths mentioned in 2006 focused on the technology used in the conference and the frequency and quality of interaction among participants and presenters. These strengths were not mentioned as frequently in 2010. Instead, the variety of topics and sessions, and the ability to view recordings of all conference sessions were mentioned as strengths. Participants in 2006 and 2010 similarly ranked the remaining categories of strengths.

**Table 2.** *Conference strengths reported by 2006 and 2010 participants*

<b>2006</b>		<b>2010</b>	
Quality Content/Presentations/Sessions	28	Virtual/Online/Convenience	65
Virtual/Online/Convenience	22	Quality Content/Presentations/Sessions	41
Technology Used/New Tech	14	Variety	35
Interactivity	14	View Recordings	25
Variety	11	Organization/Structure/Fee	23
View Recordings	9	Tech Used / New Tech	17
Conference Resources	9	Community Building	15
Community Building	8	Interactivity	14
Organization/Structure/Fee	7	International/Global	6
International/Global	5	Conference Resources	5
Technical Support	4	Tech Support	5
Pedagogy/Best Practices	3		
109 responses		203 responses	

### *Problems reported* (Table 3)

In 2006, reports of technical problems by the user such as logging in to the virtual classroom Elluminate Live and network and audio problems were most frequent followed by problems with the conference schedule. Because of the range of time zones some participants were not able to attend a live presentation at a convenient time. Participants in the 2010 conference mentioned the time zone problem significantly more frequently. They also reported technical problems with their computer, network and software but to a much lesser degree than the 2006 participants. The remaining problems reported by participants were fairly similar with the exception of some problems with late starting and cancelled sessions in 2010. With the largest number of sessions offered in 2010, there were presenters who had technical problems causing a delay in the start of their sessions. Also, some confusion regarding time zones had some presenters missing their sessions entirely.

**Table 3.** Problems reported by conference participants 2006 and 2010

2006		2010	
Technical User	27	Schedule/Time Zone	35
Schedule/Time Zone	14	Technical User	18
Website: navigation, finding information	3	Technical Conference	17
Technical Conference	3	Website: navigation, finding information	15
Communication: timely announcements	3	Sessions: late start, cancelled	8
Technical Support	2	Communication: timely announcements	7
Conference Resources: access to slides	2	Conference Resources: access to slides	2
51 responses		108 responses	

*Future conference themes suggested (Table 4)*

Interest in conference themes differed somewhat between 2006 and 2010 participants. In 2006, the most frequently mentioned theme category related to managing and delivering eLearning while in 2010, this category ranked 8th in frequency. Participants in both years were very interested in new and emerging technologies as conference themes (1st for 2010 and 2nd for 2006). However pedagogy for distance and eLearning ranked high for 2010 but relatively low for 2006. Also, there was more interest in research issues in eLearning as a theme in 2006 but not so in 2010. Other themes between 2006 and 2010 were similar but ranked differently in frequency.

**Table 4.** Future conference themes reported by 2006 and 2010 participants

2006		2010	
Managing/Delivering eLearning	14	Emerging Tech / Web 2.0 Tools	15
New and Emerging Technology	10	Distance Education Pedagogy/eLearning	13
Research Issues in eLearning	6	Virtual Learning Environment (SL)	10
Cross Cultural / Diversity	5	Cross Cultural / Diversity	6
Faculty Development/Issue	4	Online Learning Community	6
Distance Education Pedagogy/eLearning	4	Open Source/Education	6
Future Issues: Economy, Tech	3	Mobile/Ubiquitous Learning	5
Developing Materials	2	Managing/Delivering eLearning	4
Online Learning Community	2	Research Issues in eLearning	3
Student Issues	2	Faculty Development/Issues	3
47 Responses		73 Responses	

*Technology for TCC*

For the 2010 TCC conference, an additional open-ended item was included to find out from participants what types of technology they suggest be integrated in the conference. This question yielded 90 responses and the major categories of technology are summarized below.

Video (28 responses): Participants mentioned the use of videocasting, videoconferencing, video presentations, and You Tube as technology they would like to see used in future TCC conferences.

Second Life (26 responses): Interest in virtual learning environments has been increasing over the past few TCC conferences and the implementation of Second Life (SL) has been strongly suggested by participants.

Voice Thread (13 responses): Voice Thread is tool for recording an audio discussion around a shared medium such as a PowerPoint presentation, video or image. TCC participants indicate an interest in having this tool used in the conference.

#### *Interview data (Table 5)*

Seven veteran TCC advisory board members were interviewed via email. The board members ranged from 8 to 14 years in being involved in TCC conference activities with a mean of 10.5 years. When asked about the most significant change in TCC over the years (Q2), board members reported the use of a synchronous virtual conferencing system Elluminate Live made more interaction, especially through audio, thus making it more like a face-to-face conference.

*“It was when we started to use Elluminate. It was a great leap to a real conference. Before that, it was text "chat" only, and I am not really fond of text chatting. Also I didn't feel like it was a real "conference." But after using Elluminate, I started to feel it was a real conference.”*  
(via email, June 8, 2010)

TCC board members indicated that a virtual conference like TCC (Q3) is unique from traditional conferences because all sessions are recorded and archived for future viewing and global interaction before, during and after the conference is made possible through synchronous and asynchronous tools.

*“I feel that a virtual conference like TCC adds the ability to sustain a community of international and diverse scholars much more than a face-to-face conference. I think there is a lot more informal collaboration going on amongst participants and between participants, presenters and keynote speakers. The variety of synchronous and asynchronous tools makes this all possible.”* (via email, June 6, 2010)

There were several suggestions by the board members for integrating Web 2.0 technologies in future TCC activities (Q4). Many technologies were similar to those mentioned by 2010 conference participants: Voice Thread, Second Life and video. Also mentioned were other social networking tools such FaceBook, Twitter and You Tube.

*“TCC should be at the forefront of implementing the newest technologies. The conference should focus on demonstrating and using the technology, not only the techie part, but also showing how the tools can be used to improve teaching and learning, especially in a global classroom setting.”* (via email, June 8, 2010)

**Table 5.** Interview responses from veteran conference board members (n = 7)

Q1. Number of Years in TCC	8 – 14 years
Q2. Most Significant Change	<ul style="list-style-type: none"> <li>• use of Elluminate (more interaction, recorded sessions)</li> <li>• moving from primarily asynchronous sessions to synchronous sessions</li> <li>• moving from text to audio interaction</li> <li>• moving from community college focus to broader college/university focus</li> </ul>
Q3. Unique Activities	<ul style="list-style-type: none"> <li>• access recorded sessions that are archived</li> <li>• global collaboration through synchronous and asynchronous activities</li> <li>• community of international and diverse educators</li> </ul>
Q4. Future TCC Activities	<ul style="list-style-type: none"> <li>• Use of multimedia tools like Voice Thread, Audacity, Jing</li> <li>• More use of video such as videocasting, YouTube, Skype Video</li> <li>• Use of social networking tools: FaceBook, Twitter and Second Life</li> <li>• Explore the use of multi-user virtual environments (MUVES)</li> <li>• Always demonstrate use of most recent technology and how it can help to effectively deliver instruction</li> </ul>

## Discussion and Recommendations

The purpose of this study was to examine evaluation data from the past five TCC Worldwide Online Conferences to determine the perceptions of conference participants over time and to detect any changes in interests and problems that may be useful to conference planners. The evaluation data show that even though conference participation has more than doubled since 2006, the ratings for key conference indicators: content, theme, community, interaction and face-to-face comparison were consistently high. It is likely that the process TCC conference organizers use to select themes and content have contributed to the high ratings. The TCC advisory panel and editorial board are comprised of faculty, administrators and professional staff that are representative of the conference participants (see, <http://tcc.kcc.hawaii.edu/2011/tcc/about.html>). Conference evaluation results are shared and suggestions for future conference themes and content are discussed. Suggestions for improvements are also shared by the advisory panel and editorial board. The value of having a worldwide body of experts is in the diversity of innovative ideas and practical experiences that help to guide the design of the TCC conference program.

Clearly, the success of the TCC conference has contributed to the growth in participation over the years and the advantages of a virtual conference (flexibility, no travel, low cost) will make future participation even more appealing. Maintaining high participant satisfaction may be a challenge as the TCC conference experiences more growth. It is therefore important that conference organizers attend to the interests and concerns of conference participants. Below are recommendations made from key themes that emerged from the data analyzed from open-ended and interview questions for conference participants and TCC advisory board members.

## **Capitalize on strengths and uniqueness of a virtual conference**

The flexibility and highly interactive features of a virtual conference are benefits appreciated by busy professionals who seek to improve their own knowledge and skills and seek to network with a community of educators who have similar interests and needs. TCC Worldwide Online conference participants can choose to participate in a live presentation and discussion at their convenience and view archived recordings of live presentations and discussions whenever they want to. Asynchronous interaction through email and discussion boards can extend the conference experience and TCC organizers should continue to emphasize this feature during post conference activities.

The quality and variety of conference sessions have been strong characteristics of TCC over the years. Much credit should go to the conference organizers for promoting a full range of conference themes and to the reviewers of presentation and paper proposals and the editors for helping to ensure that a quality program is offered. Since all of the sessions are recorded and archived, it would be useful to email post-conference reminders to view featured recordings, which would draw interest back to the conference site and the archived sessions.

## **Minimize real and perceived problems**

Technical issues continue to be reported by participants, though to a lesser degree over time. In 2006 about 4% of the participants (27 out of 650 TCC participants) reported technical problems when accessing the conference whereas, only 1% (18 out of 1373) of the participants in TCC 2010 indicated having technical problems. Pre-conference activities are scheduled by TCC each year to allow new and returning participants the opportunity to practice in a virtual conference environment. These practice activities have appeared helpful in reducing user error and correcting technical issues upfront (Kimura & Ho, 2008) and this conference feature should continue to be emphasized. With future improvements in ICT bandwidth, network issues should also diminish for conference participants.

Since TCC evolved to a predominately synchronous conference, scheduling sessions for a worldwide audience that spans 18 time zones has been challenging. The current schedule of a 12:00 noon Eastern Standard start time appeared to appeal to the broadest audience. Though, for participants in Japan and Hawaii, a start time of 1:00 am and 6:00 am respectively, is quite early. The TCC conference organizers should continue to strategically schedule a variety of sessions to fit times that are convenient for participants in every geographical location. This may mean varying the times that featured and keynote sessions are offered.

Reports of confusion over the scheduled times for the sessions were also noted. The conference program for TCC 2010 listed session times in Hawaii Standard Time. To help the participant with reading the schedule in their own time, a general chart that listed Hawaii, Pacific Coast, East Coast and Japan times was provided on the program page. A link to online time zone conversion tools was also provided. Although it is not difficult to mentally determine the correct session times for one's location, participants that are careless or in a rush will tend to have problems. It is recommended that a feature used in a previous TCC conference that converted the conference schedule to one's own "local" time be employed in future conferences.

## Pay attention to interests of participants

The strong interest in video, Second Life (SL), Voice Thread and other Web 2.0 tools should be incorporated in the planning for the next TCC Worldwide Online Conference in 2011. The Elluminate Live virtual conferencing system has a video feature that allows for video streaming. Presenters have not been encouraged to use this feature because of potential bandwidth problems. However, as Internet services have improved, TCC should begin testing the use video streaming in pre-conference activities.

Second Life has been featured in the past several TCC conferences. The growing interest and user base in SL should be addressed. There should be a way to make SL more mainstream and an integral part of the TCC program. Perhaps an entire program track for SL could be offered and proposals for sessions in SL solicited. A special SL session could be offered just as a call for proposals is announced to draw attention to this new TCC conference track.

Emerging ICT should continue to be a focus for TCC. New technology has been used to implement conference activities with great success. Elluminate Live is a prime example. Featured presentations and keynote speakers have provided exposure to many Web 2.0 tools and this has been the strength of TCC. Pre-conference and post-conference activities could also be used to offer more hands-on experiences with technology.

While the current TCC post-conference survey will continue to be the primary evaluation instrument, it would be useful to have other forms of data to add to the limited body of knowledge available for virtual conferences. For example, a case study approach would provide a deeper understanding of what motivates a person to participate in a virtual conference and the experiences that are unique to a virtual conference. It would also be interesting to conduct a comparative study with other virtual conferences to determine common features that lead to satisfactory experiences by participants.

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