A COMPARATIVE STUDY OF "THE INTERNATIONAL EDUCATIONAL TECHNOLOGY CONFERENCE" (IETC) AND "THE INTERNATIONAL CONFERENCE ON COMPUTERS IN EDUCATION" (ICCE): THE PROGRAM, ESSAY DISTRIBUTION, THE THEMES, AND RESEARCH METHODS

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ABSTRACT
The article aims to compare international conferences, The International Educational Technology Conference (IETC, 2011) and The International Conference on Computers in Education (ICCE, 2010), from various dimensions. The comparison is expected to conclude a better approach for every IETC and ICCE to be held.
Keywords: The Turkish Online Journal of Educational Technology(TOJET), The Asia-Pacific Society of Computers in Education(APSCE), Comparative Study

1. INTRODUCTION

"The International Educational Technology Conference" (IETC) held in Turkey and Turkish Republic of Northern Cyprus has added up to 11 sessions and has expanded its effects within collaborative periodical "The Turkish Online Journal of Educational Technology" (TOJET) as well as SSCI. As the 12th session will leave the Mediterranean for Eastern Asia for the first time, its influence will continue to expand. "The International Conference on Computers in Education" (ICCE), a prestigious event held since 1989, shall be a great reference for the IETC to be held in APEC region; Thus this article sets its aims at comparison and analysis on the two events.

2. CONCEPTUAL FRAMEWORK AND ANALYSIS SCHEMA

The IETC and ICCE are both crucial events aiming at the technological application to education with a view to better efficiency in learning; the former has been held annually in both Turkey and Turkish Republic of Northern Cyprus since 2001 while the latter has gone through 19 sessions so far since 1989, hosted by various nations within APEC region. These events adopt similar historical background and objectives, both promoted from the region to the globe.

The study compares the development and programs of the two conferences, which were chosen because the front is founded in Turkey and promotes the TOJET, and the later is organized by Asia Pacific Society for Computers in Education(APSCE).

The study analyzes the aforementioned conferences with the Comparative Methods proposed by George Bereday (1964), which conducts description, interpretation, juxtaposition, and comparison. Bereday's view widely used in the comparative study of education policy, cross-country comparisons and other research, also commonly used to compare national standards for e-learning. In this article, the development and the latest agenda of each conference are processed through the method of documentation survey while the nation/ region of authors (the first authors or corresponding authors), themes, and research methods are subjects to a statistical

analysis.

3. COMPARISON

3.1. Development and History
The study compares the most recent event of IETC2011) and ICCE2010 from the perspectives such as development, essay collection, and the agendas (http://www.iet-c.net/, http://www.icce2010.upm.edu.my/). Details are listed as Table 1.

3.2. Distribution of Papers Published
There are 155 papers in ICCE 2010 and 335 papers in IETC 2011. However, 133 papers in IETC2011 were not written with English, so we excluded these from analysis. 202 papers in IETC2011 were issued from 28nations/ regions, with the top five naming Turkey, Malaysia, Taiwan, USA, Jordan and India. 155 papers in ICCE2010 were issued from 21nations/ regions; with the top five naming Japan, Taiwan, Malaysia, Singapore and Korea. Nationality/ regions of authors in IETC2011 include Turkey and the Mediterranean (41.6%); those from Taiwan, USA and other nations in Asia-Pacific region take up 33.7%. Malaysia, the host nation of the ICCE2010, stands the 3rd place for the amount of papers issued, with the main circulation in Asia-Pacific region stands a rate of 94.8%:

Table 1. Comparing IETC2011 and ICCE2010

	IETC2011	ICCE2010
The first session	Turkey (2001)	Taiwan (1989)
Sessions (up to 2011)	11	19
Frequency	Annual	● Every two years (1989-1997) ● Annual since 1998
Venue (up to 2011)	● Turkey and Turkish Republic of Northern Cyprus ● A second place since the 3rd session	● Various economies in Asia-Pacific region: TW, SG, MAS, HK, PROC, JP, KOR, NZ, AU, TH. ● Out of TW since the 4th session
Essays/ themes of conference proposed	N	6
Papers	● 133 in Turkish ● 201 in English	● 155 in English
Publishing form	(full) paper	● Full paper ● Short paper ● Poster
Language of papers	English and Turkish	English
Count of nationality/ regions of the first authors	28	21
Collaborative periodicals & societies	TOJET	APSCE
Call for proposals	N	● Workshop Proposals ● Open Forum Proposals ● Panel Proposals ● Interactive Sessions Proposals ● Tutorial Proposals
Duration of conference	3	5
Theme of the year	N	Y
Major activities of the programmed	● Keynote addresses ● Full-paper publishing	● Keynote addresses ● Addresses by Theme-based Invited Speakers ● Workshop ● Doctoral Student Consortium ● 2009 APSCE Distinguished Researcher Award

Content analysis was carried out for topic and research methodology analysis. Descriptive statistics were used to analyze and report the data.

3.3. Research topic analysis

The field is widely interdisciplinary and includes members from cognitive science, educational psychology, computer science, anthropology, sociology, information sciences, neurosciences, education, design studies, instructional design, and other fields (Sawyer, 2006). Categories for paper classification might be as diverse as various viewpoints from different background. For there are five established academic societies are taking part in ICCE 2010: Association for Educational Communications and Technology (AECT), International Society of the Learning Sciences (ISLS), International Association of Mobile Learning (IAMLearn), IEEE Technical Committee of Learning Technology (IEEE TCLT) and International Artificial Intelligence in Education Society (AIED), six themes in the conference are designed, which means the six theme-based sub-conferences dedicated to foster the building of research communities in the field of Computers in Education. Consequently, papers in the conference belonged to one of the six themes. Therefore, we regard the six themes as topics for article categorization.

The six theme-based sub-conferences are
1. Artificial Intelligence in Education/Intelligent Tutoring System (AIED/ITS) and Adaptive Learning.
2. Computer-supported Collaborative Learning (CSCL) and Learning Sciences.
3. Advanced Learning Technologies, Open Contents, and Standards.
4. Classroom, Ubiquitous, and Mobile Technologies Enhanced Learning (CUMTEL).
5. Game and Toy Enhanced Learning and Society (GTEL&S).
6. Technology, Pedagogy and Education.

As a result, we categorize all papers to the six themes, and Table 3 shows frequencies and percentage of six themes in articles.

Table 2. Frequencies and percentage of nationality/ region of authors

	IETC2011 Amount(%)		ICCE2010 Amount(%)	
Top five nations/ regions of papers issued	1.Turkey	70 (34.7%)	1. Japan	52(33.5%)
	2.Malaysia	24 (11.9%)	2. Taiwan	38(24.5%)
	3.Taiwan	18 (8.9%)	3. Malaysia	15(9.7%)
	4.USA	13 (6.4%)	4. Singapore	10(6.5%)
	5.Jordan, India	7 (3.5%)	5. Korea	8(5.2%)
Total	Amount of papers in the top five nations/ regions	139(68.8%)	Amount of papers in the top five nations/ regions	123(79.4%)
	Other	63(31.2%)	Other	32(20.6%)
Regions	The Mediterranean	84 (41.6%)	The Mediterranean	0
	Asia-Pacific region	68 (33.7%)	Asia-Pacific region	147(94.8%)
	Other European areas	21 (10.4%)	Other European areas	8 (5.2%)
	Eastern & Mid Asia	15 (7.4%)	Eastern & Mid Asia	0
	Southern Asia	7 (3.5%)	Southern Asia	0
	Other regions	8(4.0%)	Other regions	0
Total		202(100%)		155(100%)

Table 3. Frequencies and percentage of six themes in articles

Conferences Themes	IETC2011 Frequency (%)		ICCE2010 Frequency (%)	
1. Artificial Intelligence in Education/Intelligent Tutoring System (AIED/ITS) and Adaptive Learning.	13	6.5%	23	14.8%
2. Computer-supported Collaborative Learning (CSCL) and Learning Sciences.	7	3.5%	20	12.9%
3. Advanced Learning Technologies, Open Contents, and Standards.	45	22.6%	19	12.3%
4. Classroom, Ubiquitous, and Mobile Technologies Enhanced Learning (CUMTEL).	10	5.0%	35	22.6%
5. Game and Toy Enhanced Learning and Society (GTEL&S).	8	4.0%	1	10.3%
6. Technology, Pedagogy and Education.	116	58.3%	42	27.1%

3.4. Research Methodology Analysis

Each paper was analyzed with three stages. We first determined the type of the paper. There are three types of

papers consisting of empirical paper which includes empirical data, paper with the description of concepts or systems without empirical data, and review papers. If this paper is empirical paper, we then determined the research design (step two) and research method (step three) of this paper. The analysis schema of research design and method was based on the work of Shih, Feng, & Tsai (2008). Table 4 is the result.

4.DATA ANALYSIS
4.1.Distribution of Essays Published
● Paper issuance in IETC2011 are distributed mainly in The Mediterranean, Europe, and Western Asia; with a broad distribution, six preceding nations/ regions take up 68.8% of paper issuance. ICCE2010 includes nations mainly from APEC region (94.8%); and 80% of papers are from the five preceding nations.
● Venue affects the attendance rate; moreover, essays written in the language of the hosting nation increases participation. Taking the IETC2011 as an instance, the event accepted 70 essays written in English by Turkish authors and 130 in Turkish.
● Sorting the accepted papers into 3 groups- full papers, short papers, and posters- helps programming and creates incentives for the participation in new issues without losing the focus.

4.2.Research topic
● Themes of essays in the IETC2011 mainly focus on Technology, Pedagogy and Education (58.3%); and Advanced Learning Technologies, Open Contents, and Standards (22.6%) along with 4 other themes (20%). ICCE2010 includes rather even dimensions: Technology, Pedagogy and Education (27%); Classroom, Ubiquitous, and Mobile Technologies Enhanced Learning (CUMTEL)(22.6%); and other themes rated between 10% to 15%.
● Diversity of themes may lie within distinct subjects to e-learning adopted by authors from various regions; diverse extent in application of ICT; or the criteria for subjects set up for essay acceptance by the host. The aforementioned factors cast influence on the decision made by the Program Committee.

Table 4. Frequencies and Ratio of Research Methodology in Articles

Conferences / Research Methodology		IETC2011 Frequency (%)		ICCE2010 Frequency (%)	
Types of papers	Empirical papers	145	72%	77	50%
	Papers with the description of concepts or systems	57	28%	78	50%
Research Design	Experimental research	23	16%	27	35%
	Descriptive research	97	67%	10	13%
	Developmental research	25	17%	40	52%
Research Method*	Testing	41	28%	56	73%
	Questionnaire	62	43%	33	43%
	Interview	20	14%	6	8%
	Observation	27	19%	21	27%
	Logged or archived data	19	13%	6	8%

*The ration exceeds 100 percent due to multiple methods adopted in partial essays.

4.3. Research methodology
● Types of papers : Empirical papers stand a major portion (72%) among the papers in the IETC2011, Papers with description of concepts or systems take up a portion of 28%; and in the ICCE2010, both stand even, suggesting an emphasis on Empirical papers in the IETC2011.
● Research Design: the Research Design of the IETC2011 features Descriptive research (67%); on the contrary, papers in the ICCE2011 stand the least portion (13%) of Descriptive research, 52% of Developmental research, and 35% of Experimental research. Diversity of Research Design may lie within diverse objectives, means of research or different results.
● Research Method: IETC2011 adopted a major portion (43%) of Questionnaire and Testing (28%) while the ICCE2010 conducted Testing at a ratio of 73% and Questionnaire at 43%. The aforementioned methods are obviously the major means adopted in the research of e-learning. Meanwhile, the diversity of ration suggests distinct objectives adopted by authors from various regions.

5. CONCLUSIONS AND SUGGESTIONS
While both themed on e-learning, the events each possesses merits; and diverse experiences of each shall be good reference for enhancing the quality of both. The IETC has more plenteous output of essays, greater variety of regions from which authors come, and more emphasis on distinct issues concerning education within regions.

Moreover, authors come from several backgrounds as Turkey, The Mediterranean, Western Asia, Taiwan, and USA. Meanwhile, ICCE, coming from a longer history, stands enriched themes from rather active collaboration among nations, mostly within Asia-Pacific region. The congregation features not only diversity but also renowned awarding for eminent researchers. Considering the diversity among education spaces in different regions, both conferences show great difference in themes and research methods, which reflect the various output resulted from technology applied to diverse setting of education.

Both congregations stand a prospect of progressing on a mutual basis over accumulated experiences, planned emphases are listed as the following:

● Venue: widening options for the venue with a view to increasing the effects of the events
● Call for proposals: sorting collected proposals to help programming without losing the focus. Meanwhile, the theme of the year may adopt an approach of both globalization and localization with a view to increasing contribution to the hosting nation.
● Programming: increase the diversity of themes and activities; for instance, planning workshops、open

forums、panels、interactive sessions、tutorial forums、doctoral student consortiums etc. Meanwhile, quests

for proposals shall be increased as the forms being standardized into 3 groups mentioned; such mechanism stands a prospect of propelling participation and interaction within the academia as well as achieving knowledge inheritance and progress through diverse forms of congregations
● Best paper award and researcher award: setting up an annually system for awarding may encourage participation as well as enhance the reputation and quality of the organizing mechanism

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