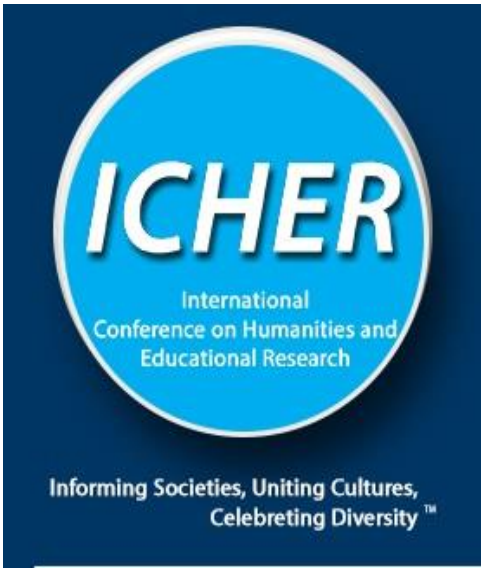
International Conference on Humanities and Educational Research
March 23 – 26, 2017, Houston, Texas, USA
CONFERENCE PROCEEDINGS
ISSN 2469-7486



CO-EDITORS
Murat Tas, PhD
Michael Schulte, PhD

SCIENTIFIC COMMITTEE

Dr. Norman St.Clair – University of the Incarnate Word– Conference Co-Chair
Dr. Murat Tas – San Antonio College – Conference Co-Chair
Dr. Thomas Philip Corbin Jr. – American University in Dubai
Dr. Patricia Watkins – Texas A&M University
Dr. Michael Gunter – Tennessee Tech University
Dr. Ibrahim Al Saadi – King Abdulaziz University
Dr. Heath Lowry – Bahcesehir University
Dr. Tugsan Tezil – National Cancer Institute, Italy
Dr. Ching- Ying Maru – Tokyo Institute of Technology
Dr. Jan Henrik – University of Hamburg
Dr. Atsusi Isumi – Hiroshima City University
Dr. Refia Gulin Ogut Eker – Hacettepe University
Dr. Jiyoon Yoon – University of Texas Arlington
Dr. Savas Egilmez – Ataturk University
Dr. Marc G. Turner – Texas State University
Dr. Ilyas Kamalow – Mimar Sinan Fine Arts University
Dr. Zeng Xiangneng – Sun Yat-Sen University
Dr. Qaffar Mehdiyev Cakmakli – Erciyes University
Dr. Maxime Gauin – Eurasia Research Center
Dr. Alejandra Luna – University of Guadalajara
Dr. Isa Blumi – Galatasaray University
Dr. Edward Erickson – Marine Corps University
Dr. Keisuke Wakizaka - Kafkassam

CONFERENCE SCIENTIFIC RELATIONS COMMITTEE

Mehmet Emirhan Kula – Erzurum Technical University
Amin Davoodi – Texas A&M University
Inci Yilmazli – University of the Incarnate Word
Sara Mariam Emami – University of the Incarnate Word
Ihsan Eken – University of the Incarnate Word
Marissa Molina – University of the Incarnate Word
Eyman Alsobhi – University of the Incarnate Word

PREFACE

Complexities surrounding the globalization and the interconnectedness of nations are creating challenges for nation-states as well as other newly formed political structures. Innovative social, political, and economic structures are being formed and existing structures are being re-formed to adapt to the forces of globalization. With all these changes (and thus innovations), scholars and practitioners are trying to understand how they fit within these complexities and what the future will be like if we do not respond effectively.

Through this conference we brought experts from around the world to share their research and experiences in humanities and educational research. Our conference sparked some exceptional conversations around the very meaning of culture and cultural competencies.

Here, we present some of our scholarly discussions that took place during our conference in a more detailed manner and hope that these scholarly conversations continue to inform us all as we work towards an even more globalized world in which we can celebrate its unity.

Table of Contents

THE EFFECTS OF PODCASTING ON VOCATIONAL SCHOOL STUDENTS' CRITICAL THINKING DISPOSITIONS FOR A MATHEMATICS COURSE

Serpil Yorganci, Erzurum Vocational School, Ataturk University, serpil.yorganci@atauni.edu.tr

Abstract: This study investigated the effects of podcasting on vocational school students' critical thinking dispositions. The research was carried out on 84 students of Erzurum Vocational College during the spring semester of 2015- 2016 academic year. The "one-group pre-test post-test design" was taken as the research model. Data were collected by employing a Turkish version of the "California Critical Thinking Dispositions Inventory" (CCTDI). The Turkish version of the CCTDI consists of 51 items with 6 subscales: open-mindedness, inquisitiveness, systematicity, truth-seeking, analyticity, and self-confidence. Results indicated that the use of video podcast technology had a significant positive impact on vocational school student's critical thinking disposition. It was also found that the greatest increase occurred in the truth-seeking, analyticity and systematicity dimensions, respectively. On the other hand the lowest increase occurred in self-confidence dimension.

Keywords: critical thinking disposition, podcasting, vocational school,

Introduction

Over the past decade, research attracts attention to the importance of critical thinking dispositions in education (Bell & Loon, 2015; Lewis, 2012; Naber & Wyatt, 2014; Ojewole, 2013; Şendağ & Odabaşı, 2009; Walter, 2013; Yang, Chuang, Li, & Tseng, 2014, Yorganci, 2016). Critical thinking defined as "reflective decision-making and thoughtful problem solving about what to believe and do thinking" (Ennis, 1987) is a significant component of education (Şendağ & Odabaşı, 2009). Studies point out that critical thinking for educational purposes includes both cognitive skills and dispositions (Facione, 1990). According to Facione (1990), critical thinking disposition is characterized as a "probing inquisitiveness, a keenness of mind, a zealous dedication to reason, and a hunger or eagerness for reliable information". It includes seven sub-dispositions: open-mindedness, inquisitiveness, systematicity, truth-seeking, analyticity, critical thinking self-confidence, and cognitive maturity (Facione, 1990). Table 1 presents the definitions of these dispositions.

Table 1

Definition of elements of critical thinking dispositions (Facione, Giancarlo, Facione, & Gainen, 1995).

Factor	Description
Open-mindedness	being tolerant to divergent views and sensitive to the possibility of one's own bias.
Inquisitiveness	intellectual curiosity and eagerness for learning even when the application of the knowledge is not readily apparent.
Systematicity	being organized, orderly, focused, and diligent in inquiry.
Truth-seeking	disposition of being eager to seek the best knowledge in a given context, courageous about asking questions, and honest and objective about pursuing inquiry even if the findings do not support one's self-interests or one's preconceived opinions.
Analyticity	prizing the application of reasoning and the use of evidence to resolve problems, anticipating potential conceptual or practical difficulties, and consistently being alert to the need to intervene.
Self-Confidence	to trust the soundness of one's own reasoned judgments and to lead others in the rational resolution of problems
Maturity	being judicious in one's decision-making

The significance of well-planned technological tools in obtaining aspects of mathematics such as problem solving, critical thinking, doing operations and conceptual learning have been reported in studies (Raines & Clark, 2011; Tassler, 2003). Researchers have suggested that video podcast technology can be an effective tool increasing the attention and concentration in mathematics course (Boster et al., 2007, Yorganci, 2016). However, the potential of podcasting in education remains unexplored and, there is a limited amount of studies investigating student critical thinking disposition with the use of podcast technology. Therefore, this study investigated the effects of podcasting on vocational school students' critical thinking dispositions.

Methodology

The study used a one-group (no control) pretest-intervention-posttest experimental design to examine the effects of podcasting on vocational school students' critical thinking dispositions. In this context, all of students were administered the California Critical Thinking Disposition Inventory as the pre-test and post-test (the same test). The study sample consists of 84 first year spring semester students in Erzurum Vocational College, Ataturk University in 2015-2016 academic year.

Data sources

The Turkish version of the California Critical Thinking Disposition Inventory (CCTDI), which was modified to Turkish context by Kökdemir (2003) has been administered to measure vocational school students' critical thinking dispositions. The modified instrument was reduced to 51 items with 6-point Likert scale ranging from 1 (not true) to 6 (completely true) in the item-total correlation analysis 6 subscales: open-mindedness (12 items), inquisitiveness (8 items),

systematicity (6 items), truth seeking (7 items), analyticity (11 items), and self-confidence (7 items). The reported alpha reliability of the overall CCTDI is .88 (Kökdemir, 2003).

The alpha reliability of the overall CCTDI for this study was found to be 0.83. In addition, the Cronbach alpha coefficients of subscales were: Truth-seeking 0·80; Systematicity 0·77; Inquisitiveness 0·81; Open-mindedness, 0·74; Confidence, 0·85; and Analyticity, 0·88.

Video Podcasts

According to Kay (2014), there are four basic components to be paid attention in preparing a video podcast: establishing context, creating effective explanations, minimizing cognitive load and engaging students. In this context, a total of 70 video podcasts was created for use in mathematics course. The video podcasts covered four main areas including functions, limits and continuity, derivative and integration. Table 2 displays a detailed description of video podcast content.

Table 2
Video podcast content

Content	Topics	Clip number	Range (sec.)
Functions	Functions and Their Graphs	4	185-450
	Inverse Functions	3	366-500
	Exponential and Logarithmic Functions	5	340-480
Limits	Finding Limits Graphically and	3	250-400
	Numerically	3	300-420
	Evaluating Limits Analytically	3	245-300
	Continuity	2	400-420
	One-Sided Limits	5	355-520
	Infinite Limits		
Derivative	The Derivative and the Tangent Line	3	455-550
	Problem	5	330-350
	Basic Differentiation Rules and Rates of	3	300-400
	Change		
	Product and Quotient Rules and Higher-	3	440-550
	Order	3	300-430
	Derivatives	3	450-480
	The Chain Rule		
	Implicit Differentiation		
	Derivatives of Inverse Functions		
Integration	Antiderivatives and Indefinite	3	500-520
	Integration	2	410-450

Area	2	380-400
Riemann Sums and Definite Integrals	3	450-500
The Fundamental Theorem of Calculus	4	400-540
Integration by Substitution	3	440-580
Numerical Integration	3	400-420
The Natural Logarithmic Function: Integration	2	480-500
Inverse Trigonometric Functions: Integration		

Video podcasts were uploaded to the course sites on Moodle (the course management system) with the name "MATEMATİK-II". Students logged into Moodle before utilizing podcasts. Some students did not know what podcasting was. Therefore, step-by-step basic information was developed to guide students during the download of the podcasts from Moodle. Figure I shows a screenshot from video podcasts.

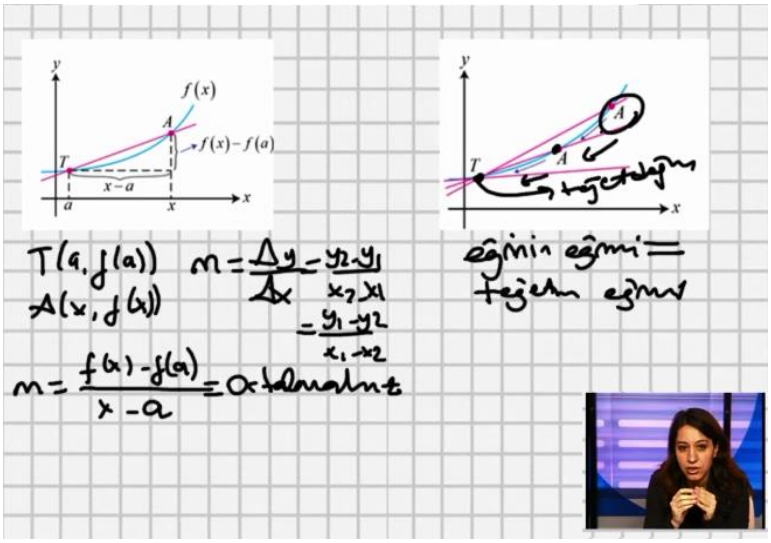


Figure 1. A selected screenshot from video podcast

Procedure

At the beginning of the semester, the volunteer students were asked to complete the survey using an online assessment tool. After logging into Moodle, students viewed the invitation, consent form, and were redirected to the online survey. The students took CCTDI as pre-test. Course instructor proposed that students watch the podcasts related to topic after lectures. The CCTDI was given to students at the end of the study as the post-test.

Results

Table 3 displays descriptive statistics of students' CCTDI scores before and after the intervention. For all subscales, the mean scores corresponding at post-test are higher than those of pre-test. The greatest increase occurred in the truth-seeking subscale. The mean of truth-seeking post-test scores increased by 0.80. The lowest increase occurred in self-confidence dimension. The mean of self-confidence post-test scores increased by 0.11.

Table 3
Descriptive statistics of CCTDI

		Pre-test				Post-test			
CCTDI scales	N	Min.	Max.	M	SD	Min.	Max.	M	SD
Open-mindedness	84	1.75	5.17	3.95	.75	2.00	5.63	4.20	.77
Inquisitiveness	84	2.38	4.20	3.66	.67	2.33	4.36	3.88	.69
Systematicity	84	2.33	5.83	3.97	.70	2.50	5.33	4.55	.64
Truth-seeking	84	1.00	5.14	2.93	1.07	1.29	5.86	3.73	.96
Analyticity	84	2.18	6.00	3.78	.78	3.55	6.00	4.38	.51
Self-Confidence	84	2.03	5.71	2.31	.70	1.57	6.00	2.42	.89
Total	84	3.41	5.10	3.47	.40	3.87	5.27	4.47	.37

A paired-samples t-test was used in comparing the difference between the pre- test and post- test scores of the CCTDI. Table 4 displays the results of paired-samples t-test regarding the pre-test and post-test total CCTDI mean scores of the students.

Tablo 4

Mean difference of the pre-test and post-test CCTDI scores.

	N	M	SD	df	t	p
Pre-test	84	3.47	.40	83	.29	.00
Post-test	84	4.47	.37			

Results indicate that the difference between the pre-test and post-test scores was statistically significant. ($p=.00$, $p< .05$). The pre-test mean was 3.47, and the post-test mean was 4.47. Overall, students' critical thinking disposition improved significantly and it could therefore be suggested that using video podcast technology had a significant positive impact on vocational school student's critical thinking disposition.

Table 5 displays the findings of paired-samples t-test regarding the pre-test and post-test mean scores of CCTDI subscales. Results indicated that the difference between the pre-test and post-test scores was significant on systematicity (p=.00, p<.05), truth-seeking (p=.00, p<.05), and analyticity (p=.01, p<.05).

Table 5

Mean difference of the pre-test and post-test CCTDI subscales

		N	M	SD	df	t	p
Open-mindedness	Pre-test	84	3.95	.75	83	-.80	.42
	Post-test	84	4.20	.77			
Inquisitiveness	Pre-test	84	3.66	.67	83	-.23	.81
	Post-test	84	3.88	.69			
Systematicity	Pre-test	84	3.97	.70	83	2.21	.00
	Post-test	84	4.55	.64			
Truth-seeking	Pre-test	84	2.93	1.07	83	-3.45	.00
	Post-test	84	3.73	.96			
Analyticity	Pre-test	84	3.78	.78	83	-2.06	.01
	Post-test	84	4.38	.51			
Self-Confidence	Pre-test	84	2.31	.70	83	.03	.97
	Post-test	84	2.42	.89			

4. Discussion and Conclusion

The study investigated the effects of podcasting on vocational school students' critical thinking dispositions. At the beginning of the semester, based on the results of the CCTDI administered to the students, their critical thinking dispositons were taken together with open-mindedness, inquisitiveness, systematicity, truth-seeking, analyticity, and self-confidence dimensions. In the video podcast technology intervention, the students were asked to watch the podcasts related to topic after lectures. The CCTDI was given to students at the end of the semester as the post-test.

The results revealed that there was a statistically significant difference between the pre-test and post-test scores ($p=.00$, $p< .05$). The pre-test mean was 3.47, and the post-test mean was 4.47. The total post-test mean score of 4.47 indicates that using video podcast technology had a significant positive impact on vocational school student's critical thinking disposition.

The findings revealed that there was increase in all subscales of the CCTDI. Based on the results, it was found that there was a statistically significant difference in systematicity, truth-seeking, and analyticity dimensions. Systematicity subscale had the highest mean scores in pre and post-test at 3.97 and 4.55, respectively. Secondly, the mean of analyticity subscale post-test scores increased by 0.60. Next, the mean of truth-seeking subscale post-test scores increased by 0.80. The greatest increase occurred in the truth-seeking subscale. However this subscale wasn't the highest subscale score for the pre and post-test. This coincides with Paans, Sermeus, Nieweg, and van der Schans (2010) beliefs that the greatest increase in the truth seeking dimension means that students are getting better at seeking the best knowledge which is important for evidence-based practice. However, this findings were not supportive of several studies that have found truth-seeking to be the lowest disposition (Ojewole, 2013; Ozturk, Karayagız Muslu, & Dicle, 2008; Walter, 2013). According to Wangensteen, Johansson and Nordstrom (2010), the reason for the low truth-seeking score is that the students reject to interrogate new knowledge. Such a greatest increase in the truth-seeking score in this study could be attributed to the fact that students assume an active posture and want to analyze new knowledge in video podcasts.

The lowest increase was found in self-confidence dimension. This result is consistent with the result of (Colucciello, 1999). Colucciello (1999) (who targeted nursing students in a single baccalaureate nursing program) have compared two groups of nursing students and found that self-confidence to be the lowest disposition. This result contradicts with the findings of Ojewole (2013)

and Walter (2013). Ojewole (2013), for example, found that participants' CCTDI means were within the positive disposition range with highest mean scores in inquisitiveness and confidence in reasoning. Self-confidence referring the trust of students' own ability to reason is an important disposition. Therefore, the students should be encouraged to undergo reflection and discussion upon the problem or the situation.

Critical thinking dispositions are significant component of 21st century higher order thinking abilities because they are a pre-requisite to support the critical thinking process (Ojewole, 2013). Therefore, educators should integrate web technologies in their lectures that can develop critical thinking skills. According to Beyer (1991), critical thinking skills can be obtained with long time education based on a thinking process. For this reason, podcast technology, especially video podcasts, can be used an important tool to acquire critical thinking skills for students because of the convenience and the time and place flexibility that the use of this technology provided.

REFERENCES

Bell, R., Loon, M. (2015). The impact of critical thinking disposition on learning using business simulations. *The International Journal of Management Education, 13*, 119-127.

Beyer, B. (1991). *Teaching thinking skills: A handbook for elementary school teachers*. Boston, USA: Allyn and Bacon.

Boster, F. J., Meyer, G. S., Roberto, A. J., Lindsey, L., Smith, R., Inge, C., Strom, R. E. (2007). The impact of video streaming on mathematics performance. *Communication Education, 56*(2), 134–144.

Colucciello, M. L. (1999). Relationships between critical thinking dispositions and learning styles. *Journal of Professional Nursing*, *15*(5), 294-301.

Ennis, R. (1987). *A taxonomy of critical thinking abilities and dispositions. In Teaching thinking skills: Theory and practice*, ed. J. Baron and R. Sternberg. New York: W.H. Freeman.

Facione, P. A. (1990). *Critical thinking: A statement of expert consensus for purposes of educational assessment and instruction.* Millbrae, CA: The California Academic Press.

Facione, P. A., Sanchez, C. A., Facione, N. C., & Gainen, J. (1995). The disposition toward critical thinking. *The Journal of General Education, 44* (1), 1–25.

Kay, R. H. (2014). Developing a framework for creating effective instructional video podcasts**.** *International Journal of Emerging Technologies in Learning, 9*(1), 22-30.

Kökdemir, D. (2003). *Decision making and problem solving under uncertainty*. Unpublished doctoral dissertation, Ankara University, Ankara.

Lewis, C. Y. (2012). *Critical thinking dispositions of tennessee agriculture teachers.* (Doctoral dissertation). Available from Proquest Dissertation and Theses database UMI No. 1510436.

Naber, J., & Wyatt, Tami H. (2014). The effect of reflective writing interventions on the critical thinking skills and dispositions of baccalaureate nursing students. *Nurse Education Today*, 34(1), 67-72.

Ojewole, F. O. (2013). Critical thinking dispositions of undergraduate nursing students and nursing faculty in southwestern. (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No.3597809).

Ozturk, C., Karayagız Muslu, G., & Dicle, A. (2008). A comparison of problem-based and traditional education on nursing students' critical thinking dispositions. *Nurse Education Today, 28,* 627-632.

Paans, W., Sermeus, W., Nieweg, R., & van der Schans, C. (2010). Determinants of the accuracy of nursing diagnoses: influence of ready knowledge, knowledge sources, disposition toward critical thinking, and reasoning skills. *Journal of Professional Nursing,* 26(4), 232-241.

Raines, J. M., and L. M. Clark. 2011. A brief overview on using technology to engage students in mathematics. *Current Issues in Education, 14* (2), 1–7.

Sendag, S. & Odabasi, H. F. (2009). Effects of an online problem based learning course on content knowledge acquisition and critical thinking skills. *Computers & Education*, *53,* 132-141.

Tassler, N. (2003). Adding it up with elementary math problems. *Technology and Learning*, *23,* 2-22.

Walter, J.M. (2013). *An Assessment of post-professional athletic training students' crıtıcal thınkıng skılls and dısposıtıons.* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3579606).

Wangensteen, S., Johansson, I. S., Bjorkstrom, M. E., & Nordstrom, G. (2010). Critical thinking dispositions among newly graduated nurses. [Article], *Journal of Advanced Nursing, 66(*10), 2170-2181.

Yang, Y-T C., Chuang, Y-C., Li, L-Y., & Tseng, S-S. (2013). A blended learning environment for individualized English listening and speaking integrating critical thinking. *Computers & Education*, *63*, 285-305.

Yorganci, S. (2016). Critical thinking dispositions of pre-service mathematics teachers. *Participatory Educational Research*, *3*(3), 36-46.

Yorganci, S. (2016). Student's beliefs about using worked–example based video podcast in mathematics courses. *Participatory Educational Research, 3*(3), 20-35.