BAU
Bahçeşehir University

World Conference on
Science & Mathematics Education

ACADEMIC WORLD EDUCATION & RESEARCH CENTER

3rd World Conference on Science & Mathematics Education

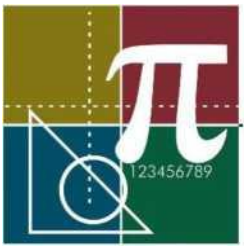
28 - 30 August / Bahcesehir Universtiy / www.sci-math.org

Abstracts' Books

/Awer - Center World
/scimath.info

/awercenterworld

NEAR EAST UNIVERSITY
UNIVERSITY OF KYRENIA
AKDENIZ ÜNİVERSİTESİ
Association for Human, Science, Nature, Education & Technology
Cyprus Educational Sciences Association
CESA 2004
CERJ Contemporary Educational Researches Journal
IJLT International Journal of Learning & Teaching
New Trends and Issues Proceedings on Humanities & Social Sciences



World Conference on
Science & Mathematics Education

3rd World Conference On Science and Mathematics Education

(SCI-MATH-2017)

Bahcesehir University Besiktas

CampusIstanbul, Turkey 28-30 August 2017

ABSTRACTS BOOK

Organization

Academic World Education and Research Center -Non-profit international organization

www.awer-center.org

Organization

Organized by

Near East University University of Kyrenia
Academic World Education and Research Center
Association for Human, Science, Natura, Education and Technology

Program Chair

Prof. Dr. Haluk Soran Department of Biology Education Faculty of Education, Near East University

Program Committee

Prof. Dr. Hafize Keser, Ankara University (Computer Education)
Prof. Dr. Haluk Soran, Near East University (Biology Education)
Assoc. Prof. Dr. Hamit Caner, Eastern Mediterranean University (Chemistry education) Assoc. Prof. Dr. Şerife Gündüz, Near East University, (Environmental Education)
Assoc. Prof. Dr Özcan Asilkan, Akdeniz University (Computer Education)
Assist. Prof. Dr. Murat Tezer, Near East University (Mathematics Education)
Assist. Prof. Dr. Engin Baysen, Near East University (Physic Education)

Secretariat

Nuran Cemal scimath.info@gmail.com

International Advisory Board

Janet Macaulay, Monash University
Steve Provost, Southern Cross University
Pauline Ross, University of Western Sydney
Dipak Sarker, University of Brighton
Yu-Ling Lu, National Taipei University of Education

ABSTRACTS

Exploring preservice teachers' pedagogical content knowledge in sketching trigonometric graphs.

Benjamin Tatira, Association for Mathematics Educators of South Africa Abstract

Many preservice teachers have gaps in knowing how to apply and teach school mathematics, which has cascading effects on teaching and learning in schools. This study was conducted to answer the question "To what extent do preservice teachers display pedagogical content skills in sketching high school trigonometric graphs?" The study involved two preservice teachers who volunteered to participate in preparing and delivering a 45-minute lesson on sketching of trigonometric graphs under a video-recorded peer teaching environment. These presented no special characteristics other than their interest in collaborating in order to improve the teaching and learning of school mathematics. The peer group was made up of 25 fourth year undergraduate students who were conveniently selected to create a mathematics class. The video presentation was analysed a checklist of components of pedagogical content knowledge. The results showed that preservice teachers did not anticipate possible learner difficulties and also they lacked follow-up questions of learners' responses for the purpose of clearing possible difficulties as well as scaffolding. Though assessment activities were carefully planned and their prior knowledge was satisfactory, lack of multiple instructional strategies led to a teacher-dominated classroom environment. Preservice teachers possess insufficient knowledge about the key components pedagogical content knowledge of knowledge of instructional methods, learners' difficulties and questioning techniques, although their assessment and subject knowledge were good.

ADDRESS FOR CORRESPONDENCE: Benjamin Tatira, Association for Mathematics Educators of South Africa E-Mail

Address: benjamin.tatira@ul.ac.za

Association for Mathematics Educators of South Africa

Benjamin Tatira, Association for Mathematics Educators of South Africa

Abstract

Many preservice teachers have gaps in knowing how to apply and teach school mathematics, which has cascading effects on teaching and learning in schools. This study was conducted to answer the question "To what extent do preservice teachers display pedagogical content skills in sketching high school trigonometric graphs?" The study involved two preservice teachers who volunteered to participate in preparing and delivering a 45-minute lesson on sketching of trigonometric graphs under a video-recorded peer teaching environment. These presented no special characteristics other than their interest in collaborating in order to improve the teaching and learning of school mathematics. The peer group was made up of 25 fourth year undergraduate students who were conveniently selected to create a mathematics class. The video presentation was analysed a checklist of components of pedagogical content knowledge. The results showed that preservice teachers did not anticipate possible learner difficulties and also they lacked follow-up questions of learners' responses for the purpose of clearing possible difficulties as well as scaffolding. Though assessment activities were carefully planned and their prior knowledge was satisfactory, lack of multiple instructional strategies led to a teacher-dominated classroom environment. Preservice teachers possess insufficient knowledge about the key components pedagogical content knowledge of knowledge of instructional methods, learners' difficulties and questioning techniques, although their assessment and subject knowledge were good.

ADDRESS FOR CORRESPONDENCE: Benjamin Tatira, Association for Mathematics Educators of South Africa E-Mail

Address: benjamin.tatira@ul.ac.za

Investigation of Preservice Science Teachers' Cognitive Structures on Socioscientific Issues through Word Association Test

Oktay Aslan, Necmettin Erkbakan University

Nurcan Tekin, Aksaray University

Abstract

The purpose of the study was to examine preservice science teachers' cognitive structures on socioscientific issues (SSIs), who participated in a SSI based activities. The SSI based activities was carried out 20 preservice science teachers in Turkey. These activities were composed of games, argumentation and student lesson plans about SSIs. Data was collected with word association tests (WAT). WAT can used to see knowledge network, relation between concepts and significant or meaningful of concepts relations. A holistic case study approach was used throughout the study. The stimulus words selected related to key concepts, characteristics and instructional model of SSIs. These words were nature of SSIs (science, technology, society, environment), and characteristics (dilemmas, ethics). Cut of points were determined by frequency tables about response to stimulus words. Concept networks were created by the help of cut of point. At the end of the SSIs based activity instructions, increasing in preservice science teachers' cognitive structures toward SSIs was observed.

ADDRESS FOR CORRESPONDENCE: **Oktay Aslan,** Necmettin Erkbakan University

E-Mail Address: oktayaslan@gmail.com

THE IMPACT OF SMART BOARD USAGE ON THE CLASS MANAGEMENT

Mehmet Karadağ, Near East University

Ümit kalkan, Near East University

Ahmet Koç, Near East University

Zehra Altınay Gazi, Near East University

Abstract

The developing technology in recent years has made it easier to access information. Access to information and sharing information have comprised information technologies and been a part of education, since then. Today, countries are giving shape to their educational policies by including information technologies to their education systems. One of the information technologies that have been widely used every passing day are smart boards. This research is to determine the positive and negative impacts of smart board usage on the class management. For this purpose, first a school located in Lefkoşa was selected and then a qualitative research was conducted through personal interview reports with 25 teachers. The difficulties teachers experience in class management, skills of teachers in terms of ensuring motivation in the class in addition totheir levels of using technologies, abilities to use computer and computer programs, attitudes towards preparing and benefiting e-content are all taken into consideration. Based on the findings that we gathered from this research, we reached the conclusion that the smart board usage has a positive impact on in-class communication and makes the courses more fun and entertaining, according to the majority of teachers. Also, the students are said to be more careful and concentrated. This makes it easier for teachers to manage the classroom and it positively affects the time management.

Keywords: Teachers, Smart Board, Classroom Management, Technology, Productivity

ADDRESS FOR CORRESPONDENCE: Mehmet Karadağ, Near East University

E-Mail Address: 63mkaradag@gmail.com

Generating New Principles for Mathematics Learning in Indonesian Classrooms to Foster Students' Mathematical Reasoning Ability

Zeni Rofiqoh, Postgraduate student of University of Bristol

Abstract

As one of the vital skills, reasoning ability links to other abilities in learning mathematics, those are problem solving, communication, connections, and representations. While it is included in the majority of mathematics curricula, some issues emerge regarding the implementation of reasoning skill upon complex situations, interactions, and inhabitants within classrooms. This conceptual study, therefore, attempts to investigate the principles of an Indonesian curriculum called 2013 curriculum, as a focus of this study, in terms of mathematical reasoning aspect. The aim of this research is to establish new principles for new mathematics curriculum in Indonesia. The findings suggest that multiple interactions among students as well as students and teacher should be encapsulated within the curriculum. The study literature is subsequently conducted to propose the new principles by taking into account of creative mathematical thinking as the basis of the mathematical reasoning. Ultimately, eight principles for the mathematics curriculum were generated namely prepare, identify, connect, analyse, execute, communicate, reflect, and support. Although the new principles appear to be the improvement of those in the 2013 curriculum, a concrete actualisation of them is required to know the real result whether they are significant or not.

ADDRESS FOR CORRESPONDENCE: Zeni Rofiqoh, Postgraduate student of University of Bristol

E-Mail Address: zr16347@my.bristol.ac.uk

Generating new principles for the mathematics curriculum to foster reasoning skill

Zeni Rofiqoh, Postgraduate student of University of Bristol

Laurinda Brown, Postgraduate student of University of Bristol

Abstract

As one of the vital skills, reasoning ability links to other abilities in learning mathematics, those are problem solving, communication, connections, and representations. While it is included in the majority of mathematics curricula, some issues emerge regarding the implementation of reasoning skill upon complex situations, interactions, and inhabitants within classrooms. This conceptual study, therefore, attempts to investigate the importance of reasoning skill alongside the dilemma during the classroom implementation. The aim of this research is to establish new principles for new mathematics curriculum. The findings suggest that multiple interactions among students as well as students and teacher should be encapsulated within the curriculum. The study literature is subsequently conducted to propose the new principles by taking into account of creative mathematical thinking, metacognitive approach, cooperative learning, and complex instruction as the foundations to enhance students' mathematical reasoning. Ultimately, eight principles for the mathematics curriculum were generated namely prepare, identify, connect, analyse, execute, communicate, reflect, and support. Although the new principles appear to be the improvement within mathematics curriculum, a concrete actualisation of them is required to know the real result whether they are significant or not. Besides, it is necessary to also consider the condition of a school or even culture in which these principles will be applied.

Keywords: curriculum: mathematical reasoning: creative mathematical thinking.

ADDRESS FOR CORRESPONDENCE: Zeni Rofiqoh, Postgraduate student of University of Bristol

E-Mail Address: zr16347@my.bristol.ac.uk

DIGITAL GAME DESIGN ON THE IDENTITIES AND EXPANSIONS

Selçuk Alkan, Mustafa Kemal University

Tuba Ada, Anadolu University

Abstract

The subject of Identities has been taught since the 8th grade and it is one of the topics that students have difficulty in learning subjects of Identities and Expansions as well as forming the basis of many mathematical topics from polynomial to integrals. In the teaching of this topic, the most basic reason of problems that students experienced was that the topics of identities and expansions were tried to teach by memorizing. Geometric meanings of algebraic expressions should be taught and appropriate visual materials should be designed in order for education to be effective (Özdemir and Duru, 2008). Structured visual models and structured instructions can be effective in the teaching of this subject by using geometric meanings of algebraic expressions thanks to technology. In the study on Identities and Factorization conducted by Özer and Şan (2013), two different education were given to two different groups of students and the course flow has been continued as usual in one of these education and the flow diagrams, cartoons, two- and three-dimensional models and samples were used in other one. It has been observed that the academic achievements of the instructions in which the visual materials are used increased by 60% as a result of the study. In similar study on Identities and Factorization conducted by Faysal (2007), it has been observed that the success and permanence increased in groups of student in which visual materials were used. In this study, it is aimed to design a digital game which will be used in the teaching of identities and expansions and provide modeling by students. This game will be designed according to the 8th grade math curriculum. Unity3d game engine will be used in designing the game. The software required to run the game will be written by researchers using C # and java script. At the stage of designing, initially the game will be introduced to five mathematics teachers and various arrangements will be made according to their opinions. Then, the game will be evaluated and given the final form by two instructors who are expert in the field of mathematics education. In general, problems will be designed that can be solved by dividing the rectangle given by 2 dimensional and given one edge like (ax + b) into the sub rectangles such as x^2, 2x and 1 and by writing the final result of how many sub rectangles formed the whole rectangle. The designed digital game will be shared with participants in conference.

ADDRESS FOR CORRESPONDENCE: Selçuk Alkan, Mustafa Kemal University

E-Mail Address: selcukal4401@hotmail.com

THE DESIGN OF A DIGITAL GAME ON THE TEACHING OF THE CONCEPT OF DISTANCE: AN EXAMPLE OF TAXICAB GEOMETRY

Selçuk Alkan, Mustafa Kemal University

Tuba Ada, Anadolu University

Abstract

Taxicab geometry was described by Hermann Minkowski in the 19th century and the computation of the distance between two points in this geometry differs from Euclidean geometry. The popularity of this geometry has been increased since 1975 and it has been seen that this geometry has been a more appropriate model for urban life in studies since that time (Kocayusufoglu and Özdamar, 1998). In the study conducted by Ada and Kurtuluş (2012), it has been aimed to teach taxicab geometry to mathematics teacher candidates by using project based learning method. As a result of the study, they reached the conclusion that according to students, Taxicab geometry is more appropriate for urban life. In another work conducted by Ada and Kurtuluş (2009), they have taught mathematics teacher candidates to calculate distance between different two points in Taxicab geometry by utilizing SimCity game. Taxicab geometry is very appropriate for daily life and also can be easily taught by digital game. The purpose of this study is to design problem situations which they can solve by using Taxicab geometry appropriate for high school students through turning into a digital game. Then, the opinions of 5 high school mathematics teachers about the game will be included. According to opinions, digital game will be redesigned and evaluated by two instructors who are experts in the field of mathematics. Unity 3d will be used in game design. The software required to run the game will be written by the researchers using C # and java script. The designed game will be shared with the participants in the conference.

ADDRESS FOR CORRESPONDENCE: Selçuk Alkan, Mustafa Kemal University

E-Mail Address: selcukal4401@hotmail.com

DIGITAL GAME DESIGN ON THE SUBJECT OF IDENTITIES AND EXPANSIONS

Selçuk Alkan, Mustafa Kemal University

Tuba Ada, Anadolu University

Abstract

In this study, it is aimed to design a digital game which be used in the teaching of identities and expansions and provide modeling by students. This game was designed according to the 8th grade math curriculum. Unity3d game engine was used in designing the game. The software required to run the game was written by researchers using C # and java script. At the stage of designing, initially the game was introduced to five mathematics teachers and various arrangements was made according to their opinions. Then, the game was evaluated and given the final form by two instructors who are expert in the field of mathematics education. In general, problems was designed that can be solved by dividing the rectangle given by 2 dimensional and given one edge like (ax + b) into the sub rectangles such as x^2, 2x and 1 and by writing the final result of how many sub rectangles formed the whole rectangle. The teachers who participated in the evaluation of the game stated that the game was suitable for the education and the students would attract interest the game during the course. Teachers have criticized the game only visual matters. For education to be more effective, the number of such games and materials should be increased. For design more effective and more interesting game, we must collaborate with expert in the field of fine arts.

ADDRESS FOR CORRESPONDENCE: Selçuk Alkan, Mustafa Kemal University

E-Mail Address: selcukal4401@hotmail.com

Two Years Results of Elementary Teachers' Implementation of Argument Based Inquiry

Nurcan Keles, Dicle University

Brian Hand, University of Iowa

Abstract

The Argument Based Inquiry (ABI) approach stresses that scientific argumentation means the collaborative nature of scientific activity in which learners are involved in a constant cycle of arguing and clarifying their ideas with their peers and teachers. The purpose of this study was to provide an overall teacher's implementation trends in two years by comparing traditional classroom in order to see differences in overall more than one unit or semester whether teachers keep using argumentation by concentrating particularly in argumentation.This study was undertaken with 44 teachers from fourth and fifth grade elementary schools. From those 44 teachers, 19 teachers were in the treatment groups and 25 teachers were in the control group.A quasi-experimental design was used because pre-existing classes were employed for assignment to groups.A rubric was designed to analyze video tapes. Results showed that the first semester implementation were better than other three semester. Result also showed that even though the pedagogical shift is not easy for teachers, the findings shows that it is possible to shift from traditional method with a continuous improved level because in this study the implementation level stayed in the between low high and medium level, in which students talk time and argumentation is increasing and students are able to produce claims, evidence and clarifying and structuring their ideas by concept mapping.

ADDRESS FOR CORRESPONDENCE: Nurcan Keles, Dicle University

E-Mail Address: nurcankeles591@gmail.com

The Effect of the Science Writing Heuristic Approach on 4th Grade Students' Sign Making with Multimodal Representations

Nurcan Keles, Dicle University

Brian Hand, University of Iowa

Abstract

Sign making is a process of integrationg multimodal representation into the text based on students' conceptual understanding where students show their interests, thinking, and meaning making process when constituting knowledge through the construction of meaningful writing with multimodal representations. In this process, students need to select and organize the modes depending on their interpretation and perception. The purpose of this study was to examine the effect of SWH appraoch on students' sign making process.This is a qualitative study to show the writing differences between each classroom to display the patterns of each type of classeoom. For this, students' end of unit summary writings were coded with rpeestablished codes of sign system. The traditional and the SWH students' writing coded and patterns were revealed. The findingds showed that students' in the SWH were able to create more descriptive representations which were more content related than the traditional groups.

ADDRESS FOR CORRESPONDENCE: Nurcan Keles, Dicle University

E-Mail Address: nurcankeles591@gmail.com

Worked-out Questions Supported With Self-Explanation Prompts for Determination and Elimination of Students Misconceptions of Mathematics

Zeynep Çiğdem Özcan, İstanbul Medeniyet Üniversity

Çiğdem Kılıç, İstanbul Medeniyet Üniversity

Selda Obalar, İstanbul Medeniyet Üniversity

Abstract

Fraction is one of the most important topics in mathematics education. Fractions can be presented in sets, number lines or area model. Showing fractions on the number line has a common use. Although the number line is important in the development of the fraction concept and in operations within fractions, it is seen that the students have experienced issues in this respect. Despite the fact that many studies have been done to determine students' mistakes/misconceptions about placing fractions on the number lines, it seems that there needs to be studies to eliminate those issues. In the literature it is emphasized that worked-out questions supported with self-explanation prompts method have potential for determination and elimination of students' misconceptions of mathematics. So the aim of this study is to identify effectiveness of a this method for determination and elimination of students misconceptions of showing fractions on number line. Qualitative and quantitative research methods were considered for data collection. Data were collected in three stages. The research started with a total of 36 students attending the 4th grade and 31 of these students participated in the first stage of the research. In first stage participants were asked to place 5/3 fraction on the number line. In the second stage of the data collection 22 students attended the study. In that stage students were asked four questions following worked-out questions with supported self-explanation prompts including demonstration of fractional numbers for students. Two of those worked-out questions with supported self-explanation prompts have right solutions and other two has wrong solutions. In third stage task-based interviews were conducted with 5 of the students who participated in both the first and second stages of the study. According to results of this study, students who couldn't show improper fraction on number line at the first step were able to show it on number line after examining worked-out questions with self explanation prompts. When it is looked at results of clinic interview it was observed that students expressed positive opinions about this application.

Key words: Improper fraction, number line, self explanation prompt, worked-out questions

ADDRESS FOR CORRESPONDENCE Zeynep Çiğdem Özcan, İstanbul Medeniyet Üniversity

E-Mail Address: cigdemozcan@yahoo.com

A REVIEW OF THE RESEARCH ON MATHEMATICS TEXTBOOKS IN TURKEY

Tuba Gökçek, Kırıkkale Unıversity

Sedef Çelik, Artvin Coruh University

Abstract

Mathematics textbooks are considered as very effective resources at mathematics teaching and learning processes in the classr oom. For this reason, they have become an important materials and the main research topics for many researche rs in mathematics education. It is thought that the examination of studies on textbooks in mathematics education will put forward conceptual framework about textbooks. Because of this reason, the aim of this study is to investigate the studies about mathem atics textbooks according to various variables such as year they were made, sample group, the study purpose, the class level, methods employe d etc.. For this purpose, document analysis method was used and content analysis was made to analyze the studies (a rticles and thesis) on mathematics textbooks in Turkey. Inclusion criteria were determined and a coding form was prepared before collecting data. 96 studies published between 2005 and 2017 years were identified in accordance with the inclusion criteria. Ac cording to the results obtained from the review of the researches, it was found that studies on mathematics textbooks were basically related to the primary level mathematics textbooks. In addition, another striking result in this research is that there are more studies found about the opinions of textbook users on mathematics textbooks than about the content of mathematics textbooks. In the studies investiga ting the opinions on mathematics textbooks, survey or scales were used generally as data collection t ool. This study was concluded with some recommendations for the researchers who will study on relevant field.

Keywords: Mathematics textbooks, Literature review, Content analysis

ADDRESS FOR CORRESPONDENCE: Tuba Gökçek, Kırıkkale Unıversity

E-Mail Address: sedefcelik@artvin.edu.tr

AN INVESTIGATION OF THE EFFECT OF TEACHING DESIGNED BY INTEGRAL ASIE MODEL ON SCIENCE TEACHER CANDIDATES' LEARNING ON GENETICS

Sema İrem ORHAN, Kastamonu University

Abdullah AYDIN, Kastamonu University Sefa

PEKOL, Kastamonu University

Abstract

The research conducted to determine the effect of teaching designed by Integral ASIE model (a new instructional design model) on science teacher candidates' learning on genetics. The study is carried out with 39 teacher candidateswho were studying in two branches at the third grade of a state university in Turkey, Faculty of Education, Science Education undergraduate program in the spring semester of 2016-2017 academic year. The Learning Styles Test (LST), which was used to determine the learning styles both experimental and control groups and Genetic Success Test (GST), which was developed to detect the levels of knowledge of the teacher candidates on genetic, were used in obtaining the research data. The quantitative data obtained from GST wasanalyzed using SPSS 22.00 statistical package program. As a result of the analysis made, it was concluded that genetics which is designed according to the integral ASIE model, is effective in increasing the academic success of science teacher candidates.

ADDRESS FOR CORRESPONDENCE: Sema İrem ORHAN, Kastamonu University

E-Mail Address: iorhan@kastamonu.edu.tr

DETERMINATION OF THE OPINIONS OF THE SCIENCE TEACHER CANDIDATES ABOUT THE TEACHING WHICH IS DESIGNED BY THE INTEGRAL ASIE MODEL ON GENETICS

Sema İrem ORHAN, Kastamonu University

Abdullah AYDIN, Kastamonu University

Sefa PEKOL, Kastamonu University

Abstract

The research conducted to determine the science teacher candidates' opinions about the Integral ASIE Model (a new instructional design model) and teaching which is designed with this model on genetics. The study is carried out with 39 science teacher candidates who are studying in two branches at the third grade of a state university in Turkey, Faculty of Education, Science Education undergraduate program in the spring semester of 2016-2017 academic year. Semi-structured interviews were used as a data collection tool in the study conducted on the basis of qualitative research. The data from the semi-structured interviews was analyzed by two coders with content analysis. According to the findings of the content analysis of the data obtained from the semi-structured interviews through the findings obtained in accordance with the themes and codes, it has been reached that the teacher candidates who have been taught with the integral ASIE model have more interest and motivation to the lesson. The model has also been found helpful in providing effective and quality learning and helping to defeat

the exam fears.

ADDRESS FOR CORRESPONDENCE: Sema İrem ORHAN, Kastamonu University

E-Mail Address: iorhan@kastamonu.edu.tr

Articles of Eco-friendly Consumption: A Content Analysis

Ayfer Bükük, Near East University Engin

Baysen, Near East University Şerife

Gündüz, Near East University Serap

Özbaş, Near East University

Abstract

This piece of work aims to analyse the general tendencies of the journals about eco-friendly consumption published at Scopus. This study includes 162 studies from 121 different journals about eco-friendly consumption which was published between 2013 - 2017. In this study only documant type that taken into consideration are journals which are published in English. In order to evaluate the studies, classification forms, which are specifically developed for eco-friendly consumption subject, are used. The published studies about eco-friendly consumption are evaluated in terms of; the year, the publisher journal, the counrty where the study took place, the model-design-method develeopment, the research type, the research method, the subjects, the keywords, the chosen samples, the size of the samples, the data collection tools, and the data analysis method. The findings are shown as percentages, frequencies, tables and graphs in this study. As a result, mostly the quantitative research methods and the experimental research model are used in the area of eco-friendly consumption. Mostly the consumers are chosen as sample groups while experiments, observations, and alternative tools are used as data collection tools.

ADDRESS FOR CORRESPONDENCE: Ayfer Bükük, Near East University

E-Mail Address: ayfer.bu ku k@neu .edu.tr

EVALUATION OF CLASS PASSING CONDITIONS OF THE FAILED STUDENTS FROM THE VIEWPOINTS OF EDUCATION MINISTRY OFFICIALS, SCHOOL ADMINISTRATORS, TEACHERS AND PARENTS

Ümit Kalkan, Near East University

Abstract

This survey is made to evaluate the social promotion of class-repeating students applied with the changes made by TRNC Ministry of Education on regulations for promotion to a higher grade from the viewpoints of Ministry of Education and school administrators, parents, teachers and students. The aim is to assess how this social promotion which has been applied in the educational system of Turkish Republic of Northern Cyprus for three years has influenced the perceptions of academic success, discipline, etc. in the educational system and determine the advantages and disadavantages of the practice on education and training. For this survey, we used the semi-structured qualitative interviews. We interviewed 100 participants in total including school administrators, teachers and students in a high school governed by the Ministry of Education and Lefkoşa Vocational and Technical Training Department. Based on the findings, we concluded that social promotion of the failed students to a higher grade is a defective practice. When failed students are allowed to pass to a higher grade, they experience difficulties in perceiving and interpretating course subjects and establishing connections between the concepts taught in those courses. Also, it is hard in Cyprus to try to fulfill learning deficiencies pertaining to the relevant courses in the higher grade. Thus, when a decision is made for a failed student to pass to a higher grade, it would be beneficial to resort to the opinions of school administration, teachers and parents in order to change the behaviors of the student and help the student self-control. Last but not least, the considering practice enforced in recent years was favored because the authorities aimed at preventing possible overcrowding in lower grades rather than meeting the requirements of contemporary educational system. So, it is concluded that the policy in concern has numerous disadvantages in terms of attaining the educational targets of TRNC Ministry of National Education.

Key Words: Class Passing, The Ministry of Education, School Administrators, Teachers, Parent

ADDRESS FOR CORRESPONDENCE: Ümit Kalkan, Near East University
E-Mail Address: umitkalkan@gmail.com

The Relationship between Substance Use and Cultural Adaptation among International Students in North Cyprus Deniz Ergün, Ebru Çakıcı, Mehmet Çakıcı

Ebru Çakıcı, Near East University

Abstract

Substance use is known to be prevalent among university students who form one of the main risk groups. The aim of the study was to investigate the relationship between substance use and cultural adaptation among international students in North Cyprus.The present study includes 184 international students, 73.4% were from African countries. The questionnaire consisted of sociodemographic form, questions about cigarette, alcohol and other psychoactice drug (OPD) use which were prepared according to the survey questions of ESPAD and Revised Sociocultural Adaptation Scale (SCAS-R). Cigarette use at least once during the last one year was 25.5%, alcohol use 38.6%, OPD 5.4% and illicit drugs 4.9%. Cigarette use at least once during the last one year was higher for men (78.7%) than women (21.3%) (X2=15.117, df=1, p=.000). Students younger than 23 (X2=4.863, df=1, p=.027) and who perceive themselves from middle class families (X2=9.530, df=3, p=.023) mentioned to use alcohol more frequently. No difference for mean scores of SCAS-R was found among the students who use cigarette, alcohol or illicit drugs for life-time or during the last one year. 89.3% of the students that use illicit drugs mentioned to have used illicit drugs in countries other than Cyprus. 24 students (92.3%) who use illicit drugs mentioned to have used marihuana or hashish as the first drug. The results of the study suggests that problems related with sociocultural adaptation may not be an important risk factor for substance use but rather higher prevalence rates of substance use in their country of origin may contribute to the higher values they have compared to local students in other studies.

Keywords: substance use, international students, cultural adaptation

ADDRESS FOR CORRESPONDENCE: Ebru Çakıcı, Near East University
E-Mail Address: ebru.cakici@neu.edu.tr

THE EXAMINATION OF TECHNOLOGY-BASED COURSE MATERIALS DEVELOPED BY MATHEMATICS TEACHERS

SELİN URHAN,

NAZAN SEZEN YÜKSEL,

SELAY ARKÜN KOCADERE

Abstract

The change in technology manifests itself in the restructuring of mathematics teaching and learning processes. Effective use of Information and Communication Technologies (ICT) in learning environments has gained importance. In this respect, being able to prepare technology-based course materials is currently one of the competencies of teachers. Regarding this, within the scope of the Erasmus+ project titled "Math Teachers' Adventure of ICT Integration", mathematics teachers were offered an online course called "Teaching Mathematics with GeoGebra". GeoGebra is a mathematics software program which combines geometry, algebra, graphs, statistics, and calculus in a single interface. It is both a dynamic geometry software program and a computer algebra system. As a part of this online course, in which 45 mathematics teachers enrolled, teachers were asked to develop a course material with GeoGebra to be used in their classroom practices. The aim of this study is to examine their course materials and determine the mistakes of the materials. The technology-pedagogy-content knowledge model is used as the framework for the content analysis. Along with examples from each mistake, the frequency of the mistakes is given in the study. Through the results, suggestions for both inservice training of teachers and future research is presented.

Keywords: GeoGebra; ICT; Course material; Technology enhanced mathematics teaching

ADDRESS FOR CORRESPONDENCE: SELİN URHAN,
E-Mail Address: selgun87@gmail.com

CITED ANALYSIS OF ARTICLES WITH KEYWORDS OF "INSTRUCTIONAL DESIGN" IN DOAJ

Feriha Emel Yaman, Near East University

Hüseyin UZUNBOYLU, Near East University

Abstract

The aim of this research, the topic of ınstructional design in research journals: a citation analysis for the years 1995 - 2016. Instructional design key words scanned and found 158 articles. What is the language of the publication; published issues of the journals; the number of authors; number of citations; the distribution of keywords; journals in the country, author and cited according to the number of distribution; the first five most cited authors of the study, the number of citations they receive and what year they are restricted in and they take their work at the country level of the authors cited counts. Citation analysis method was used in this study. Most of the articles were produced by universities in Canada, Turkey and America.

Key Words: Instructional Design, Open Access, DOAJ, Citation Analysis.

ADDRESS FOR CORRESPONDENCE: Feriha Emel Yaman, Near East University
E-Mail Address: ferihaemel@gmail.com

FREQUENCY OF INTERNET, SOCIAL NETWORK AND MOBILE DEVICES USE IN PROSPECTIVE TEACHERS FROM FACULTY OF EDUCATION

Ezgi Pelin Yıldız, Near East University

Murat Tezer, Near East University

Abstract

The basic aim of this study was to determine the relationship between university students' frequency of internet use, duration of internet connection, environments that they connect to the internet, duration of benefitting from mobile devices (mobile phones, smart phones, tablet, iphone, ipad etc.), frequency of social network (facebook, twitter, blog, myspace, mynet, netlog etc.) use, leisure activities and internet addiction levels. Study group included a total number of 363 university students in which 255 of them were female and 108 of them were male studying at Near East University Ataturk Education Faculty from the departments of Computer Education and Information Technologies, Pre-school Teaching, Guidance and Psychological Counselling, Classroom Teaching and Turkish Language Teaching during the academic year of fall 2016-2017. Survey method which is one of the quantitative research methods was used in this study. A survey was developed by the reseachers and administered including the frequency of weekly internet use, duration of internet connection, in which environments the students connect to the internet, frequency of benefitting from mobile devices and social network and leisure activities of the students. According to a series of statistical analysis; it was revealed that frequency of internet use was every day in a week, duration of internet connection was 12 hours every day, students frequently stay connected to the internet at home with their computers and the frequency of mobile devices and social network use was found as every time. Besides, prospective teachers stated that they connect to the internet in their leisure time.

Keywords: internet use, internet addiction, mobile devices, social network

ADDRESS FOR CORRESPONDENCE: Ezgi Pelin Yıldız, Near East University
E-Mail Address: ezgipelin.yildiz@neu.edu.tr

Trends in Educational Technology Research in Turkey: Meta- Analysis of Theses and Articles for 2010-2016.

Hüseyin UZUNBOYLU, Near East University Ezgi

Pelin Yıldız, Near East University

Abstract

The aim of this study is to analyze the works by using the meta-analysis method in the field of Educational Technology in Turkey and reveal the tendency of how to go to the field of Educational Technology. In this study for the intention of the aim, 170 samples were analyzed to be on the point of being the selection of 58 thesis and 112 articles for purposeful sample which was published in the years between 2010-2016. In the study, when selecting articles and theses; Turkey address: YÖK Thesis Search database, Hacettepe University Faculty of Education Journal (HÜEF), Theory and Practice of Educational Sciences (KUYEB), Education and Science, Elementary Education Online, The Turkish Online Journal of Distance Education (in TOJ) and The Turkish Online Journal of Educational Technology (TOJET) were used in magazines. Studies conducted in Turkey by Turkish authors examined under 10 criteria. The tendencies about Educational Technology Research have been revealed in turkey by the inspected studies, research tenden cy criteria's and Index, year of publication, research scope, methodology, educational level, sample, number of samples, data co llection methods, analysis techniques. The data has been interpreted based on the percentage and frequency and representation has been provided by using a chart.

ADDRESS FOR CORRESPONDENCE: Hüseyin UZUNBOYLU, Near East University
E-Mail Address: Huseyin.uzunboylu@neu.edu.tr

Beliefs and Attitudes Towards Strategy-Method-Technique and Measurement-Evaluation of Teacher Candidates' Science and Technology Courses- I

Engin Baysen, Near East University

Neslihan Koçkonuk, Near East University

Abstract

The aim of this research is to examine the beliefs and attitudes of the teacher candidates towards the strategy-method- technic and evaluation elements found as sub-components of pedagogical content knowledge (PCK) for Science and Technology. Attendants of this research constituted by teacher candidates studying at Near East University in Faculty of Education, Science Teacher Training, Gifted Education Teachers and Classroom Teachers. Sixty teacher candidates participated in the survey. This research has descriptive characteristic due to the aim of revealing existing situation. The research is also designed as a case study under qualitative research methodology. Data was collected by open-ended questions. Questions consisted two parts. Teacher candidates explained the strategy-method-technique and measurement and evaluation tools they use in teaching science and technology and their own ideas about science education for their profession. Data obtained was subjected to content analysis. Teacher candidates' beliefs and attitudes concerning strategy-method-technic and evaluation elements are emerged in four and three categories respectively, while the categories were divided into sub- categories.

ADDRESS FOR CORRESPONDENCE: Engin Baysen, Near East University

E-Mail Address: engin.baysen@neu.edu.tr

Beliefs and Attitudes Towards Strategy-Method-Technique and Measurement-Evaluation of Teacher Candidates' Science and Technology Courses- II

Engin Baysen, Near East University

Neslihan Koçkonuk, Near East University

Abstract

This research study aimed to reveal the beliefs and attitudes of the teacher candidates towards the strategy-method- technic and evaluation elements found as sub-components of pedagogical content knowledge (PCK) for Science and Technology. Teacher candidates of Near East University in Faculty of Education, Science Teacher Training, Gifted Education Teachers and Classroom Teachers participated in the study. Data was collected through one-to-one interviews. Twenty teacher candidates attended the study voluntarily. The research is designed as a case study under qualitative research methodology. Teacher candidates explained the strategy-method-technique and measurement and evaluation tools they use in teaching science and technology and their own ideas about science education for their profession. Data obtained was subjected to content analysis. Teacher candidates' beliefs and attitudes concerning strategy-method-technic and evaluation elements are emerged in four and three categories respectively, while the categories were divided into sub- categories.

ADDRESS FOR CORRESPONDENCE: Engin Baysen, Near East University

E-Mail Address: engin.baysen@neu.edu.tr

How Sensitive Teachers are in Elementary and Secondary Science Classes in terms of Technology and Environment Ethics

Busra Ceyhan, Muğla Sıtkı Koçman University

Abstract

The purpose of the current study is to determine the sensitivity of teachers teaching science subjects in their classes ranging from the 4th grade to the 8th grade towards technology and environment ethics. The study group of the current research is comprised of science teachers and classroom teachers (n=75) working in the city of Muğla in 2016 2017 school year. The data of the study were collected by using a 36-item Likert technology and environment ethics questionnaire developed on the basis of a literature review and expert opinions. Cronbach's alpha reliability coefficient of the questionnaire was calculated to be 0.8. In the analysis of the data, percentages (%), arithmetic mean (M), standard deviation (SS), t-test, one-way variance analysis (ANOVA) and frequencies (N) were used in SPSS 20 program package. The responses given to the questionnaire items were analyzed in terms of the branches of the participating teachers. The responses given to the items in the sub-dimension of consideration of benefits to living things significantly differ in favor of the classroom teachers (For Item 1 s=3.7, f=3, t(-3.557), p<0.05, Item 2 s=3.7, f=3.4, t(- 2.380), p<0.05, Item 11 s=3.7, f=3.3, t(-2.291), p<0.05). The item with which the participating teachers agreed to the highest degree was found to be "Teaching individuals how to utilize resources most effectively by getting to know environment should be a part of education" (=3.76, % 76).

Key Words: Ethical sensitivity, teachers, technology ethics, environment ethics

ADDRESS FOR CORRESPONDENCE: Busra Ceyhan, Muğla Sıtkı Koçman University

E-Mail Address: busce-@hotmail.com

The effect of informal learning environment upon students' understanding of science-technology-society-environment

Merve Cansu İNCE, Yildiz Technical University

Bayram COŞTU, Yildiz Technical University

Abstract

It was known that informal learning environment (i.e. out-of-school) increases the quality of teaching and learning activities. Informal environments also provide many advantages as enriching content of learning. Moreover, it was emphasized that the science-technology-society-environment (STSE) learning does not effectively involve in Turkish education system. From this point of view, it should be considered informal learning environments in order to enable students' understanding of the STSE relation. Within the scope of the research, it was aimed to determine effectiveness of study visit on students' understanding of STSE. The research was conducted with 14 male students on the 5th grade level in 2016-2017 academic year. This research, which used a recycling-solid waste collection center, a botanic garden, a planetarium and science center and a zoo a few of informal learning environments, was conducted according to the case study design method. In the study, VOSTS (Views on Science-Technology-Society) questionnaire, semi-structured interviews, observation forms and diaries were used as data collection tools. The data indicated that the informal learning environments were inadequate to promote conceptual change, however; it was effective to comprehend newly learnt concepts. In addition, it was also concluded that informal learning environment provided students to capture understanding of science-technology-society-environment relations.

ADDRESS FOR CORRESPONDENCE: Merve Cansu İNCE, Yildiz Technical University

E-Mail Address: cansuince@gmail.com

A content analysis of the research articles written on "web based/mobile teacher assessment" based on various variables

Eser Çeker, Near East University

Hüseyin Uzunboylu, Near East University

Abstract

The aim of this study was to examine the research studies conducted and published in Web of Science indexed electronic journals and publishers about "web based or mobile teacher assessment" with particular attention to the publication year, authors, countries/territories, document types, editors, funding agencies, group authors, languages, organizations, research areas, source titles, and web of science categories. According to the results, there is a clear linear increase in the number of publications throughout the years, and researchers from USA universities are the clear leaders, followed by UK, China and Australia. The leading universities are from Taiwan, USA and UK. Articles, Proceeding Papers and Meeting Abstracts are most preferred document types. The leading funding agencies are from "National Institute of Health", "National Natural Science Foundation of China", "National Science Foundation" and "National Science Council in Taiwan". Following the articles on "computer science" and "engineering" research areas, articles classified to "Educational Research" areas are very popular too. But interestingly, teacher assessment oriented articles mainly are focused to "assessing students by teachers" but not vice versa. After this research and the results achieved, the writer of this article has sufficient information to further study the title subject towards starting a new PhD study.

Keywords: web based assessment, mobile assessment, teacher

ADDRESS FOR CORRESPONDENCE: Eser Çeker, Near East University

E-Mail Address: eser.ceker@neu.edu.tr

Student Perceptions of the "Geometric Objects" unit in Mathematics Classes

Murat Tezer, Near East University

Meryem Cumhur, Near East University

Abstract

This research was aimed to examine the perceptions of the "Geometric Objects" unit of 8th grade students in secondary schools affiliated to the Ministry of National Education. In this study survey method was used as it is intended to reveal the existing situation in the research. The "Perception Scale Questionnaire for the Geometric Objects Unit" was developed and used by researchers. The first part of the questionnaire is the demographic information of the students and the second part is the perceptions about the geometric objects unit. Qualitative and quantitative research methods were used in the analysis and interpretation of the obtained data. As a result of the research, the perceptions of the students about the geometric objects were collected in 3 different categories. These are "teacher", "student" and "instruction of geometric objects unit". It is seen that perceptions belonging to these categories are mostly evaluated as "Sometimes" and that many items are collected under "teacher" factor.

ADDRESS FOR CORRESPONDENCE: Murat Tezer, Near East University

E-Mail Address: murat.tezer@gmail.com

Identification of the Views of Pre-Service Science Teachers on Renewable Energy Sources

Şeyma Aksakal, Firat University, Turkey

Ömer Yılayaz, Firat University, Turkey

Mustafa Uğraş, Firat University, Turkey

Abstract

The objective of the present study is to determine the views of pre-service science teachers on renewable energy sources. Study sample included 30 pre-service science teachers attending Fırat University Faculty of Education. Qualitative research method was used in the present study. A semi-structured interview form that was developed by the authors to determine the views on renewable energy sources was used as data collection tool. Conducted analyses demonstrated that majority of pre-service teachers defined renewable energy sources as boundless energy forms that exist in nature continuously. They exemplified renewable energy sources with sun, wind and geothermal energy, and identified that use of these resources would reduce environmental pollution and dependence of Turkey to foreign resources, and thus be prioritized. Pre-service teachers stated that renewable energy sources are being used for energy needs in industries, and since there is a lack of necessary technology and awareness in Turkey for thes e sources, their utilization is limited. They also stated that sun and wind energies were the renewable energy sources used in our country.

Keywords: Socio-scientific subjects, renewable energy sources, pre-service science teachers.

ADDRESS FOR CORRESPONDENCE: Şeyma Aksakal, Firat University, Turkey

E-Mail Address: s.aksakal@firat.edu.tr

From Science-Technology-Society Movement to Socioscientific Issues

NURCAN TEKİN, Aksaray University, Turkey

OKTAY ASLAN, Necmettin Erbakan University, Turkey

Abstract

In science education, science-technology-society movement (STS) focuses on social issues related to science. Also, it emphasizes the mutual relationship between science and society. However; although STS education is basically about the effect of science and technology on the society, it does not given required attention to the importance and effects of the topics in terms of their ethical perspectives handled during STS teaching. Recently, although this movement turned into science-technology-society-environment movement (STSE), it is actually accepted as a strategy developed to heal STS. Moreover, it can be accepted that STSE movement does not directly affect the individual, moral and ethical development of students. Therefore, it may not be possible to discriminate between STS and STSE. Traditional STS(E) education only "pay attention" to moral dilemmas or discussions; but, by the context of the issues handled during STS(E) training; it fails to bring in the view of pedagogical power of discourse, explicit nature of science consideration, reasoned argumentation, emotional, developmental, cultural or epistemological relationships. In addition to those, although STS describes science content knowledge, socioscientific issues (SSI) focuse on discriminating more complex pedagogical strategies. SSI includes STS classification about science content knowledge and it can be described that SSI is a term involve ethical perspective of science, moral reasoning and emotional development of students. In contrast to STS(E), SSIs deal with how the students think scientific issues and how their the way of scientific thinking affect them. Furthermore, SSIs focus on supporting the moral principles and qualities of virtue that the students face with in daily life. All in all, conducted as a literature review study, current research aims to reveal the tendency for STS(E) movement to SSIs and the necessity of SSIs in science education by making some theoretical inferences.

ADDRESS FOR CORRESPONDENCE: **NURCAN TEKİN,** Aksaray University, Turkey

E-Mail Address: tekinnurcann@gmail.com