

Inter-Creative Course Model Proposal: Teaching- Learning Design in Secondary Schools of TRNC

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Abstract

Problem Statement: Design is an indispensable part of the human being. It enters one's life on the very first day that the eyes open. Design awareness is developed at an early age. With a proper education, even in the preschool years, design is experienced within one's close environment.

Purpose of the Study: This study aims to determine the problems in the design education programs in the secondary schools of North Cyprus through evaluating Design and Technology lessons and proposing solutions in order to enhance the quality of design education. Accordingly, as a result of the first observations, problems occur and are defined, such as a lack of framework, systems, programs, and curriculum in teaching design. Additional problems are observed including a low level of physical and functional quality in the teaching and learning medium. Some teachers have a lack of knowledge and are not capable of teaching design, and some students have a lack of design background.

Method: A one-year pilot study was conducted at four different secondary schools of North Cyprus. Accordingly, after the first series of observations were carried out using a random sampling method, the subject matter as the second action was conveyed to the Ministry of Education, which was determined as one of the actors in the action plan. Third, a commission was established by the Ministry of Education in order to initiate the action

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plan. Fourth, commission members who were selected among experienced experts developed a framework of teaching and learning. Fifth, the developed framework was tested at four pilot schools for a one-year study in addition to feedback given from the Design and Technology teachers in the seminars held. The internal and external feedback reflected the development and revisions to the tested framework.

Findings and Results: Inter Creative Course Model was developed in line with the achieved results of the field study and offered three concepts: 1) learning by doing and doing by learning (“*Hands on minds on,*”) 2) learning from friends and learning with friends (“*Over the shoulder learning,*”) and 3) learning from experience (“*Know how learning.*”) The model provided five benefits to the students: increase creative problem solving ability, develop self-confidence, improve social skills, reinforce aesthetic value and develop ability of management.

Conclusions and Recommendations: The results of this study indicated that even an intangible concept such as design could easily be taught and learned like a tangible concept such as science or mathematics. A systematic structure including the alphabet of design, which contains its vocabulary and principles, will be presented in this study.

Keywords: design, design education, inter-creative course, learning, teaching, North Cyprus.

Introduction

Design enters one’s life on the very first day that the eyes open; design is everywhere and everything around us is “design.” Usually, people are not aware of how design is an indispensable part of their lives; however, it is always in very close contact, from the simple spoon that is held to eat or the pencil that is used to write. Design is art, design is science, design is technology; it is a discipline “with a long history and many branches or areas of specialty” (“What is design”, 2011a). It is difficult to determine a single definition of the term, since “a single word 'design' encompasses many things, and that's why the understandable search for a single definition leads to lengthy debate to say the least” (“What is Design”, 2011b). It is stated by Archer (1973) that design is the “area of human experience, skill and knowledge, which is concerned with man’s ability to mould his environment to suit his material and spiritual needs” (as it is cited in “What is Design”, 2011c). According to Jones (1970), it is “an initiated change in man-made things” (as it is cited in “What is Design”, 2011c).

Indeed, design is a discipline that rebuilds and changes outdated or invalid realities (Eren, 2001). According to Herbert Simon, “It is defined as the changing of existing conditions into preferred ones” (cited in Serrat, 2010). Another definition states that the art of design “...embod(ies) an intangible concept with different points of view” (Goldschmidt, 1999). As it is described in *Ana Britannica*, “Design is a

process of thinking and development in order to achieve a tangible outcome" (1986). It does not matter how design is defined or described; it is apparent that it is a cause of development and creation to achieve a concrete output (Goldschmidt, 1999). Design is an activity that is directed toward the future, and it is, therefore, important to become aware of it and learn how to imagine, visualize or see it in the mind's eye (Baynes, 1985; "Design Education", 2011).

Lawson says, "It is in everyday use and yet given quite specific and different meanings by particular group of people... there are many forms of design which deal with both precise and vague ideas, call for systematic and chaotic thinking, need both imaginative thought and mechanical calculation" (2005). It should be noted that it is a highly complex and sophisticated skill, but this is not a mystical ability; it is a skill that can be learned and developed by practicing it. As it is stated by Edward de Bono, "to regard thinking as a skill rather than a gift is the first step towards doing something to improve that skill" (as cited in Lawson, 2005).

Design relies heavily on previous experiences and learning. It has been argued that designers make extensive use of previous experiences in the act of design; that is to say it is important to meet with design as early as possible in order to nourish a breeding ground to achieve stronger experiences (Domeshek & Kolodner, 1992; Schön, 1985; Rodgers, Brodhurst & Hepburn, 2005). There have been many lengthy discourses, and many scholars involved in design education propose various approaches and conduct different research. For instance, Laxton, as a result of his study conducted at schools with children, concluded, "Children cannot expect to be truly creative without a reservoir of experience. The ability to initiate or express ideas is dependent on having a reservoir of knowledge from which to draw these ideas" (1969). The reservoir of knowledge, on one hand, depends on the method of teaching; on the other hand, it depends on the experiences that were achieved as a result of this learning.

Design awareness starts to develop at an early age. Given a proper design education, even at the preschool level, children will experience it in their close environment. It must be noted that design is an action, which should not be isolated from people's lives. It is believed and supported among many educators, researchers and designers that design education should start at a very early age, since the preschool age is a sensitive time in a child's development (Frisch, 2006; Liddament, 1996; Medway, 1989; Moore, 1987; National Curriculum Council, 1990; School Curriculum and Assessment Authority, 1994; Siu, 1999). Being aware of this significance, authors who are academics from the faculty of architecture have conducted broad research on design awareness, understanding and education among pre-university school (secondary school) students.

Aims

This study aims to determine the problems in the design education programs in the secondary schools of North Cyprus through evaluating Design and Technology

lessons and proposing solutions in order to enhance the quality of design education. Accordingly, existing programs in North Cyprus secondary schools have been observed, and the strengths, weaknesses and failures of the existing methods teaching and learning design have been determined. As a result of the initial observations, the main problems were defined as follows:

- Problem 1: A lack of framework in the systems, programs, and curriculum of teaching design.
- Problem 2: A low level of physical and functional quality of the teaching and learning medium.
- Problem 3: Teachers have a lack of knowledge and are incapable of teaching design.
- Problem 4: Students lack a design background.

Method

Research Design

Qualitative methods have been used in this research. *First*, an observation of the existing situation, indicating strengths and weaknesses, failures of the existing methods and lessons used in teaching and learning design in the course, Design and Technology, will be examined. *Second*, a one-year pilot field study was undertaken in order to test the developed framework. This was done to enhance the quality of education in addition to bringing awareness and understanding of design into the Design and Technology lesson. *Third*, feedback was taken both from students and teachers in order to improve the proposed framework. This resulted in an inter-creative course model as a new approach offered to trigger design awareness and understanding, as well as strengthen teaching and learning of design.

Research Sample

This research was conducted in Northern Cyprus's secondary schools. It was focused primarily of Grades 6, 7, and 8. A broad field study conducted at four different schools was used to evaluate the teaching and learning in the lessons. According to the stated problems, three groups of participants were asked to take part in the research: administrators, teachers and students.

Research Instrument, Procedure and Data Analysis

Case Study Research and Action Plan

Action 1 to Solve Problem 1:

Conveying the subject matter to the Ministry of Education. A series of observations took place during the Design and Technology lesson. It was done using a random sampling method from the secondary school level. The determined problems in the existing teaching were conveyed to the Ministry of Education, one of the previously mentioned actors (administrator) of this research.

Establishment of the commission. Approval of the determined problem, led the Ministry of Education to set up a commission in order to undertake urgent action for problem solving. Commission members were selected from experts who were experienced in the subject matter and included: three instructors who taught Design and Technology (secondary school level), three academicians who taught Basic Design in the department of architecture (authors of this paper), one program development expert from the Ministry of Education, and two additional ad-hoc members who will test the proposed framework at the pilot schools to give additional feedback.

The commission was initiated to develop a framework. Members convened in a workshop format once a week for four hours; these meetings took place for one and a half years to develop the framework proposal under the auspices of the Ministry of Education. The framework was developed as a result of clearly establishing the main aim and objectives in addition to the learning outcomes of the lesson. A system was developed using a pre-defined curriculum weekly schedules, including the contents of the lessons and the support activities for teaching and learning. Preparation of the notebook, instructional CDs (including visual material to support the theoretical background of the lesson) and several class-work and homework proposals were created in these workshops.

Testing the developed framework at pilot schools. The secondary school teachers and the ad-hoc members of the commission tested the proposed framework at four different secondary schools in North Cyprus, Lefka Gazi Lycee, Şehit Turgut Secondary School, Nicosia, Bayraktar College, Nicosia and Kurtuluş Lycee Morphou. The developed framework was tested at these schools for one year. The pilot schools were determined by the Ministry of Education.

Gathering feedback. Alongside the pilot study, the commission continued its workshops, and noticed strengths and weaknesses. They gathered feedback for revision and development through testing the proposal by face-to face discussions. In addition, they organized seminars in order to jointly introduce the proposed framework to all Design and Technology teachers from different regions of North Cyprus; again, external feedback was gathered and used in the development of the framework.

Revising the developed framework and proposing a model of design teaching and learning. After the completion of the year-long pilot study, the commission finalized the program framework. The academician members of the commission took the finalized framework and used it as a base to develop the ICCM. This was provided a new model of teaching and learning design in secondary schools.

Action 2 to Solve Problem 2

Proposal to improve the quality level of teaching and learning medium. As a result of the implementation of the proposed framework at the pilot schools, feedback was used to clarify the physical, functional and operational requirements of the teaching medium. Workshop-type meetings allocated for two to three hours were determined to be the proper approach to solve the stated problem. Additionally, it was

determined that proposed classes should be well equipped in order to respond to the structural and operational necessities of the lesson, such as “smart classrooms.”

Action 3 to Solve Problem 3

Training teachers. Academician members of the commission set up a series of seminars and workshops to make teachers aware of and become familiar with the proposed framework and the teaching design. As a result of the seminars and workshops, teachers improved their knowledge on an awareness level. Additionally, feedback taken from the training stage also contributed to the development of the ICCM.

Action 4 to Solve Problem 4

Improvement of students' design background. Students' backgrounds were tested with several experimental class and homework assignments, which were recommended from within the developed framework proposal; these activities highlighted a systematic approach of learning. Students became involved in design action, design process, and learning design basics and terminology through various design works while developing ideas at pilot schools. It became evident that solving the stated problem was a long-run process; however, the pilot study provides an opportunity to highlight the issues that will lead researchers to develop a long term action plan. *What would be the further development of the proposed and tested framework?* A model was developed as a result of the case study research to provide a new approach to teaching and learning design at the secondary school level: The Inter-Creative Course Model.

Validity and Reliability

The validity and reliability of the tested framework is evaluated by external and internal feedback. The external feedback by the Design and Technology Teachers was gained as a result of the criticism of the tested framework at the seminars. And internal feedback gained by the internal criticism made by the commission members and ad-hoc members of the commission as a result of their individual observations for the validity and reliability of the data.

Results

A New Approach – The ICC Model

General Framework of the Inter-Creative Course Model (ICC Model)

The main objective of this new approach is a higher level of student achievement and a call for learning. The prepared model provides interactive participation of the students by encouraging them in a warm, relaxed, motivating atmosphere and with a positive attitude. Determination of the structure and character of the lesson within the proposed model takes the priority in significance.

Table 1

Inter-Creative Course Model

INTER-CREATIVE COURSE MODEL (ICC MODEL)	Structure of the Lesson in the ICC Model	<p><i>First year:</i> focuses on the development of creative thinking skills and problem solving ability via integration of design principles in learning.</p> <hr/> <p><i>Second year:</i> focuses on the development of skills through experimenting with innovative and creative product design.</p> <hr/> <p><i>Third year:</i> focuses on involvement with creative design action, which is highly reinforced with technology.</p>
	Relationship between design and other courses	<ol style="list-style-type: none"> 1. Drawing and modeling of designs with various software programs in computer lessons 2. Introduction of color theories and methods of freehand sketching and rendering in the art lesson 3. Emphasis and interrelation of design and science with creativity through science lessons 4. Understanding the significance of form, shape and logic through mathematics lessons
	Character of the Lesson in the ICC Model	<p>Learning by Doing - Doing by Learning - Hands-on, Minds-on (Touching Design)</p> <ol style="list-style-type: none"> 1. Introduction of the class work (2D - 3D design) by teacher - critical thinking action. 2. Students work individually in problem solving action. 3. Class discussions on a completed sketch work - critical thinking action. 4. Student work on a follow-up assignment to improve sketch work as a result of the feedback taken in Step 3 - problem solving action. 5. Class discussions on the completed class-work to include final remarks-critical thinking action <hr/> <p>Learning from Friends - Learning with Friends...Over-the-Shoulder-Learning</p> <ol style="list-style-type: none"> 1. Informal social learning from friends and feedback (asking questions, discussing ideas, and learning with friends) 2. Involvement in small groups and group work or pair work <hr/> <p>Learning from Experience...Know-how Learning (Seeing Design)</p> <ol style="list-style-type: none"> 1. Daily activities and experience 2. Experimental contact with designers who have backgrounds in different design contexts
	Advantages of ICC Model	<ol style="list-style-type: none"> 1. Increase creative problem solving ability 2. Develop self-confidence 3. Improve social skills 4. Reinforce aesthetic value 5. Develop ability of management

Structure of the Lesson in the ICC Model

The teaching method is interactive and based on experiential learning. In terms of structure, this workshop-based lesson outline involves a series of class and

homework progressing in complexity ending with the comprehensive final work. Theoretical support offered in the ICC Model is in lecture format accompanied by audio-visual material and in the form of interactive discussions. Discussions take place in groups and among individuals in the process and development of the design work.

Students blend into design action through experimenting with various techniques during the 2D and 3D design processes. Techniques such as drawing, sketching, painting, collage, etc. were utilized in addition to various model-making approaches with different selections of materials (raw materials primarily) and basic secondary school level software programs, which were suitable for 3D modeling and rendering. In this approach there are no oral and written exams and students' assessment is done through evaluation of their activities, observed performances and through the files/portfolios containing their products and designs that were developed during the year.

Accordingly, there is a framework/system/program/curriculum, which is programmed to be spread out over a three-year time period, whereby: *First year* focuses on the development of creative thinking skills and problem solving ability via integration of design principles into learning, *Second year* focuses on the development of skills through experimenting innovative and creative product design, *Third year* focuses on becoming involved with creative design action, which is highly reinforced with technology.

Meanwhile, a strong relationship is developed between the design lesson and the other lessons, such as: drawing and modeling of designs with various software programs in computer lessons; introduction of color theories and methods of freehand sketching and rendering at the art lesson; emphasis and interrelation of design and science with creativity in the science lesson; and understanding the significance of form, shape and logic through a mathematics lesson.

Character of the Lesson in the ICC Model

Every course tells a story, and this one has three main concepts / aims.

Researchers rely on the senses to perceive the world around them, and they believe that design also involves and is strongly bound to the senses, i.e., listening to the sound of design, feeling the attachment that design can contain, tasting the goodness of design, seeing and smelling the beauty of the design that surrounds the individual. Since an individual is surrounded with design senses, the main concept of the ICC model is to teach the interpretation of design with the senses. Therefore, one of the major questions is the quest of teaching/learning how to use the senses to interpret design. With the help of these courses, teachers can instruct their students to identify their senses and put them to use in the classroom.

Concept 1: Learning by Doing - Doing by Learning - Hands-on, Minds-on (Touching Design).

There is really only one way to learn how to do something and that is "to do it." If a person wants to learn to throw a football, drive a car, build a mousetrap, design a

building, cook a stir-fry, or be a management consultant, he or she must have a go at doing it. Parents usually teach children in this way. They do not give a series of lectures to their children to prepare them to walk, talk, climb, run, play a game, or learn how to behave. They simply allow their children do these things (Cope and Kalantzis, 2008). Learning by doing is essentially about getting involved in an activity—"hands-on, minds-on." This is a well known teaching approach, which is being used by several design educators throughout the world.

The first aim of the model is to use the pedagogical approaches of the hands-on, minds-on model. The expression "hands-on, minds-on" summarizes that students will learn best if they are actively engaged (Waldron and Doherty, 1994). *Within the "hands-on" approach*, students are actually encouraged to perform as they construct meaning and acquire understanding in a problem solving action. In the *"minds-on" approach* there are activities that focus on core concepts, allowing students to develop their thinking processes and encouraging them to question and seek answers that enhance their knowledge, thereby acquiring an understanding of the physical universe in which they live ("Critical issue", 1995) - Critical Thinking Action.

The "hands-on, minds-on" teaching approach is a medium where hands and minds can imagine and create. The studio offers an environment for students to work with a wide variety of materials accompanied by instruction and inspiration ("Hands on minds on", 2010). "Hands-on, minds-on" teaching should involve hands-on activities, and require critical thinking by students for the minds-on approach (Wetzel, 2008).

How is this method applied in the classroom? Each project has several steps that are part of the main framework of the "hands on-minds on" approach. Steps: In the first step, an introduction of the class-work (2D - 3D design) by the teacher (critical thinking action) takes place. Then, students work individually to solve the problem (problem-solving action). The third step is class discussions on a completed sketch work (critical thinking action). Afterwards, students focus on a follow-up to improve their sketch work as a result of the feedback from Step 3 (problem solving). The final step is class discussions on the completed class-work and final remarks (critical thinking action).

The "hands-on, minds-on" approach structurally contains a process which lies between problem solving action and critical thinking action. Together with its intersecting characteristics, it enriches the structure as well as the teaching and learning. During this process, students first start by watching and listening to the teacher and others. Next the students try the activity on their own. This sparks their interest and generates their motivation to self-discovery through touching design (Conner, 1997).

Concept 2: Learning from Friends - Learning with Friends - Over-the-Shoulder-Learning (Hearing Design)

There is a new pervasiveness of pedagogy in spaces of informal and semi-formal learning—help menus, intuitive interfaces, game-like staged learning, and what Mike

Twidale calls, “over-the-shoulder-learning” from friends and colleagues (as cited in Cope and Kalantzis, 2008). Informal social learning from friends and feedback, have a positive effect and offer some opportunities. Learning from friends is easier as there is no pressure involved. Using this model, students enjoy asking questions, discussing ideas, and learning with friends.

How is this method applied in the classroom? Group and pair work are an integral part of the teaching method of the ICC model. During group work, students have the opportunity to learn from their friends who have different backgrounds. The educational benefits of students working cooperatively in groups are well recognized. Students learn best when they are actively involved in small groups. Alongside their group work studies, they also have the opportunity to discuss their individual works with their classroom friends.

Concept 3: Learning from Experience - Know-how Learning - (Seeing Design)

Design is strongly connected to daily life activities and experiences of human beings, and could easily be incorporated into daily activities. In design education, it is very important to learn from daily activities and experiences (Bijker, 1995; Davies, 1995; Siu, 1999). The researchers believe that the main aim of the “know-how learning” approach could be achieved by an experimental contact with designers who have backgrounds in different design contexts. This method provides students with more opportunities to explore and learn from a wide range of topics and different design approaches. This information can then be integrated into their design development to solve their own problems during the individual design process.

How is this method applied in the classroom? Visiting design-related companies and exhibitions, and learning from being in close contact to the products observed will support their design vision and improve their visual design vocabulary. Designers from various design fields are invited to conduct seminars. During the seminars, the designers are encouraged to demonstrate their designs and share their experiences with students.

What will be the physical structure of the classroom in ICC Model? There is a level of physical and functional quality of teaching and learning an atmosphere that should be convenient for various formats of teaching and learning and the interactive structure of the lesson. Thus, it should have a flexible character which will integrated well with the interactive approach where diversity of actions-group-work, individual work, and group discussions or seminars could easily take place.

What will be the Students' Advantage from the ICC Model?

The ICC Model provides students five advantages.

Advantage 1: Increasing creative problem solving ability. Students learn to solve problems through experimentation with various design problems, ranging from the simplest to the most highly complicated. This model allows students to use a variety of techniques by applying them into different design actions. It also reinforces them to reflect upon their feelings, and the power of their creativity in the works by using

different materials. Thus, this model develops students' abilities in problem solving and helps to develop advanced thinking skills.

Advantage 2: Developing self-confidence. This model enables students to take pride and pleasure from experiencing the possibility of converting intangible ideas into a tangible product. In addition, it contributes to the students' ability to express himself comfortably in a friendly atmosphere. It is also improving the students' competencies in the area of discussion.

Advantage 3: Improving social skills. In this model students express themselves not only with their perception and thinking abilities, but also with physical actions. This will help students identify their own skills and abilities. Group work will help the students work in collaboration, interact and communicate with their friends.

Advantage 4: Reinforcing aesthetic values. This model teaches students the importance of design in human life. Additionally, it supports perceptual knowledge; develops visual quality, culture and vocabulary; and helps students to learn design terminology. These principles encourage students to embrace all aspects of design.

Advantage 5: Developing management ability. With the help of the pre-timed and pre-defined framework of the work, this model enriches the student's ability of management in two ways. The first way instructs students by teaching them to efficiently use and assess the resources and materials, especially the raw materials. And the second way teaches them to use time economically.

Discussion and Conclusion

As a result of the broad field study, the research concluded with four main findings. It has been revealed that there is not a framework/system/program/curriculum of teaching design in the Design and Technology course that is being taught in secondary schools of North Cyprus. Lessons are being taught with very various approaches and content at different schools that are not appropriate to the descriptions or aims and objectives of the lesson.

According to the results of the first problem, a new structured approach of teaching/learning was proposed, which reveals that design could also be taught like a tangible concept when it has a systematic structure including the alphabet of design, i.e., its vocabulary and principles. The curriculum and approaches of teaching and learning need to be uniquely designed for design education as it is proposed in the ICC Model. Based on the findings of the research, it is recommended that the Ministry of Education integrate the proposed ICC Model into the Design and Technology course teaching lessons.

Furthermore, research revealed that there are no appropriate teaching and learning medium in terms of physical and functional quality at the schools. The lessons are being conducted in regular classes, which are being used for theoretical

lessons instead of a studio/workshop. However, the teaching/learning space needs to be appropriately designed for design action instead of using spaces that were shaped for other reasons. The proposed model also calls attention to the interactive participation of the students to the learning process in a motivating atmosphere.

It has been determined that teachers in this field are not specialized on teaching design; rather, they have specializations in different fields of study. There is a need for teaching staff who are qualified to teach design and who will continuously update their knowledge and follow recent and current trends in design education. As stated in other sources, in Turkey the ineligibility of teachers has caused problems mainly in the understanding and perception of what should be focused on and taught in the lessons. The discourse was primarily on the erroneous perception of the lessons, which were initially added to the program in 2006 in Turkey. One of the governmental aims was to provide teachers from different fields in-service training and to offer them coursework regarding design and technology teaching. However, due to the fact that the majority of teachers failed to succeed in the predicted development and achievements, this resulted in the removal of the lesson from the 6th year curriculum (“Türkiye’de Teknoloji ve Tasarım [Design and Technology in Turkey]”, 2013). It has also been suggested that teachers from various fields can teach design and technology. However, continuous in-service training should be provided to support teachers’ competencies, and collaborations should be made with academicians who specialize in design teaching.

The lack of students’ design background is the fourth finding of the research. Since students are faced with the design concept for the first time at the secondary school level, they start with a lack of knowledge and with very limited experience. One of the inferences achieved from this research is the need for stimulation of students’ interactive participation in the process of experiential learning. This could be quite possible when students start the process with knowledge supported by experience, which would trigger their creative actions. Based on the findings of the research and as indicated in the proposed ICC Model, “learning from experience” is one of the useful and recommended ways of learning design. The proposed “know-how” concept offers experimental contact with various professionals; thus students will have an opportunity to learn from a wide range of topics as a result of a series of visits suggested within the proposal. This would contribute to their reservoir of knowledge, which would then help them to develop new and challenging ideas during the process of design. Based on the findings of the research, it is recommended to the Ministry of Education to work on the integration of design and technology concepts to the program of primary education in order to support the students’ backgrounds.

The proposed model provides enhancement to the findings of the research. Instead of using traditional methods of teaching, there is a proposal of interactive education that integrates active participation of students into the learning process. Similarly, in their research, Ergun and Anday (2006) and Şaşan (2002) proposed a

constructive education approach opposing traditional approach emphasized active participation of students. They believe that this kind of active participation decreases passivity of students and prevents rote learning. The active learning process will naturally support interplay between individuals and the environment. It will improve students' problem solving abilities and creative skills whereby students take on the active role and teachers act as mentors.

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Orta Eğitim Programında Tasarım Dersi Öğrenim ve Öğretimine Yönelik Paylaşımçı-Yaratıcı Ders Modeli Önerisi: KKTC Örneği

Atıf:

Ulaş-Dağlı, U., Paşaoğluları-Şahin, N., Güley, K. (2013). Inter-creative course model proposal: teaching-learning design in secondary schools of TRNC. *Eğitim- Araştırmaları-Eurasian Journal of Educational Research*, 53, 41-58.

Özet

Problem Durumu: Tasarım, teknoloji, bilim ve sanatın tümlenmesinden oluşan bir disiplindir. Tek bir kelime ile simgelenmesine karşın, anlamsal olarak birçok derinliğe sahip olduğundan özel bir tanımını yapmak çok zordur. Ancak genel bir yaklaşım olarak somut bir ürün ortaya koymaya yönelik yaratma ve üretme süreci biçiminde algılanır. Aynı zamanda geleceğe de yönelik bir eylemdir. Tasarımda en önemli olan, hayal gücünün ürünü kurgulamasını, belleğin ise onu görmesini sağlamaktır.

Araştırmanın Amacı: Makale, Kuzey Kıbrıs orta eğitim programında yer alan Tasarım ve Teknoloji dersini değerlendirmeyi amaçlamaktadır. Aynı zamanda mevcut eğitim modeli/sistemdeki güçlü ve zayıf yanları ve eğitim/öğretim metotlarındaki başarısızlıkları tespit ederek, zayıf yanlarını giderecek, güçlü yanlarını güçlendirecek, başarısızlıkları giderecek yeni bir eğitim-öğretim modeli/sistemi geliştirmeyi hedeflemektedir. Kuzey Kıbrıs orta eğitimde verilen tasarım odaklı "Tasarım-Teknoloji" dersinin kapsam ve verilmesine yönelik bir yıllık gözlem sonucunda dört ana problem ortaya çıkarılmıştır. *Problem1.* Müfredat/program/sistem/çerçeve açısından tasarım eğitiminin eksiklikleri olduğu; *Problem 2.* Eğitim/öğretim mekanlarının fiziki ve fonksiyonel kalite açısından yetersiz olduğu; *Problem 3.* Tasarım eğitimi konusunda bilgi birikimi

yetersiz öğretmen profilinin varlığı; *Problem 4*. Tasarım farkındalığına sahip öğrenci sayısının azlığı. Bu çalışmada tespit edilen problemlere çözüm geliştirmeyi amaçlamaktadır.

Araştırmanın Yöntemi: Araştırma, 6 ana adımdan oluşmaktadır. İlk bölüm halihazırda uygulanmakta olan Tasarım ve Teknoloji dersinin güçlü/zayıf yanlarının ortaya çıkarılması, tasarım eğitim/öğretim metot ve sistemindeki başarısızlıkların saptanması için seçkisiz örnek alma yöntemi ile bir dizi gözlem çalışmasıdır. Milli Eğitim Bakanlığı'na saptanan olumsuzlukların iletimi ve konuyu araştırarak ve geliştirecek komisyonun kurulması ikinci adımını oluşturmuştur. Üçüncü adımda kurulan komisyon yeni bir eğitim/öğretim çerçevesi geliştirmiştir. Dördüncü adımda, geliştirilen çerçeve seçilen 4 pilot okulda 1 yıl boyunca uygulanmış ve buna paralel olarak Kuzey Kıbrıs ortaöğretim programında Tasarım ve Teknoloji dersi veren öğretmenlere geliştirilen çerçeve ile ilgili eğitim verilmiştir. Pilot alan çalışması ve eğitim seminerleri sonucunda alınan geribildirimler ile geliştirilen eğitim/öğretim çerçevesi revize edilmiştir. Son adımda ise alan çalışması sonucunda belirtilen problemin çözümüne yönelik yeni bir yaklaşım olarak 'Paylaşımçı - Yaratıcı Ders Modeli' geliştirilmiştir. Çalışma tespit edilen 4 probleme yönelik eylem planlarının geliştirilmesi ve uygulanması yöntemi ile kurgulanmıştır.

Problem 1'in Çözümüne Yönelik Eylemde Konunun Milli Eğitim Bakanlığına Aktarılması. Seçkisiz örnek alma yöntemi ile birçok orta eğitim seviyesinde yapılan bir seri gözlem sonucunda mevcut Tasarım ve Teknoloji dersine yönelik sorunlar çalışmanın aktörlerinden biri olan Bakanlığa aktarılmıştır. *Komisyonun Kurulması.* Tanımlanan sorunların Bakanlık tarafından onaylanması ile problem çözümüne yönelik acil bir eylem başlatmak üzere Bakanlık çatısı altında Tasarım ve Teknoloji dersi veren 3 öğretmen, Mimarlık Fakültesi'nde Temel Tasarım dersi veren 3 öğretim üyesi, 1 program geliştirme uzmanı, yanı sıra yeniden geliştirilen programı test eden/geribildirim veren 2 öğretmenden oluşan komisyon kurulmuştur. *Komisyon Tarafından Geliştirilen Ders Kurgusu.* Üyeler bir buçuk yıl boyunca, haftada bir gün -4 saat- atölye çalışması formatında öneri bir kurgunun oluşturulması için bir araya gelmişlerdir. Dersin ana amaç ve hedefi ile öğrenme çıktılarının ortaya konması sonucunda dersin kurgusu geliştirilmiştir. Haftalık ders programı ve eğitim/öğretimi destekleyecek aktiviteleri kapsayan bir müfredatın yanı sıra ders notları, ödev ve sınıf çalışması önerileri ile eğitime destek veren görsellerin yer aldığı cd'ler geliştirilmiştir. *Geliştirilmiş kurgunun pilot okullarda test edilmesi.* Bir yıl süren çalışma süreci içerisinde komite üyesi olarak yer alan orta eğitim öğretmenleri, öneri kurguyu Kuzey Kıbrıs'ta yer alan dört farklı okulda sürekli test etmişlerdir. *Geribildirimlerin alınması.* Pilot çalışmaya paralel olarak komisyon, geri bildirimler doğrultusunda önerilen kurgunun zayıf ve güçlü yanlarını sürekli test ederek, yenileme ve geliştirmelere yönelik çalışmalarına devam etmiştir. Bunun yanında önerilen kurgunun daha geniş bir platformda tartışılması ve gelişimine katkıda bulunulmasına yönelik geribildirim almak üzere, Kuzey Kıbrıs'ın birçok farklı bölgesinden Tasarım ve Teknoloji dersi veren öğretmenlerin katıldığı seminerler organize edilmiştir. *Önerilen kurgunun düzenlenmesi ve tasarım eğitim/öğretimine yeni bir*

modelin önerilmesi. Pilot çalışmanın tamamlanması sonucunda yapılan düzenlemelerle programın son kurgusu gerçekleştirilmiştir. Komisyonun akademisyen üyeleri, sonuçlandırılmış kurguyu temel alarak ortaokul eğitiminde tasarım eğitim/ öğretimine yönelik bir model önerisi geliştirmişlerdir.

*Problem 2'nin Çözümüne Yönelik Eylem:*Eğitim/öğretim ortamının kalitesinin artırılmasına yönelik öneri. Geribildirimler sonucunda atölye çalışması tipine uygun sınıf ortamının sağlanması, iki veya üç saatlik blok derslerin kurgulanması gerekliliği, ayrıca görsel sunumların da yapılabileceği "akıllı odaların" bu derse yönelik olarak hazırlanması zorunluluğu ortaya çıkmıştır.

Problem 3'ün Çözümüne Yönelik Eylem: Öğretmenlerin eğitilmesi. Komisyonun akademisyen üyeleri, öğretmenlerin tasarım farkındalıklarını arttırmak, tasarım öğretimine ve önerilen kurguya aşına olmalarını sağlamak için bir dizi seminer ve atölye çalışması düzenlemiştir.

Problem 4'ün Çözümüne Yönelik Eylem: Öğrencilerin tasarım altyapılarının geliştirilmesi. Pilot okullarda yapılan çalışmalar sonucunda öğrencilerin zayıf olan tasarım altyapısının sistematik bir öğretim modeli ile çözümlenebileceği ortaya çıkmıştır. Öğrencinin aktif ve paylaşımcı bir ortamda, gerçekleştireceği ürünler ile tasarım kavramları ve sürecini, sağlıklı bir biçimde öğreneceği tespit edilmiştir.

Araştırmanın Bulguları: Gerçekleştirilen alan çalışması sonuçları üzerinde orta eğitimde tasarım eğitim/ öğretimine yeni bir yaklaşım olarak Paylaşımcı-Yaratıcı Ders Modeli geliştirilmiştir. Modelin ana hedefi öğrencinin öğrenme ve başarısını yüksek seviyeye çekmek, sıcak, rahat, motivasyonunu yükseltecek bir atmosferde pozitif bir tutum ile dersteki aktif/paylaşımcı yaklaşımını arttırmaktır. Eğitim metodu ise paylaşımcı, etkileşimci ve deneysel öğrenmeye dayanmakta, modelde giderek karmaşıklaşan birçok ev ve sınıf çalışmasının yer aldığı uygulamalı ders yöntemi öngörülmektedir. Tasarımın beş duyuya bağlı olduğuna inanan makalenin yazarları, modelin öncelikle tasarımın duyularla yorumlanmasını öğretmeye dayandığı düşüncesindedirler. Böylece temel sorunsal, yorumlanmış tasarımda duyuların kullanılacağı bir eğitim/ öğretim yönteminin nasıl gerçekleştirileceği olmaktadır. Bu anlamda ders, öğrencilerin kendi duyularını tanıması ve kullanmasını öğretmeyi hedeflemektedir. Model üç ana tasarım konseptine dayanmaktadır: (1)Yaparak öğrenmek- Öğrenerek yapma- Yaparak ve düşünerek öğrenmek (Dokunarak Tasarım); (2)Arkadaşlarından öğrenmek - Arkadaşları ile öğrenmek - Birbiri üzerinden öğrenmek (İşiterek Tasarım); (3)Deneyimlerden öğrenmek - Nasıl öğreneceğini bilmek (Görerek Tasarım).

Araştırmanın Sonuçları ve Öneriler: Bu anlamda modeli geliştiren araştırmacılar, bu modelin uygulanması sonucunda öğrencinin yaratıcılığının yanı sıra problem çözme yeteneğinin ve özgüveninin artacağına, sosyal becerilerinin ve estetik değer algısının güçleneceğine, tüm bunlara ek olarak da zaman ve malzemeyi verimli kullanmaya bağlı işletme yeteneğinin gelişeceğine inanmaktadırlar. Bu çalışmanın sonucunda tasarım eğitimi sürecinde özellikle dört konuya vurgu yapılmaktadır: (1) eğitim

programının sistemli bir yaklařım çerçevesinde uygulanması; (2) eđitim / öğrenim ortamının tasarım disiplinine uygun olması zorunluluđu; (3) öğretmen üyelerinin tasarıma iliřkin konularda güncel bilgiler ile donanmıř olması ve sürekli kendini geliřtirmesi; (4) öğrencilerin tasarım farkındalıđının, tasarımın kavramının eđitim / öğretmen programlarına daha erken sınıflarda dahil edilmesi süreci ile kazandırılması.

Anahtar Sözcükler: Tasarım, tasarım eđitimi, paylařımcı-yaratıcı ders, öğrenim, öğretmen, Kuzey Kıbrıs.