
**International Journal of Technology in Education and Science (IJTES)**

**www.ijtes.net**

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**To cite this article:**

Kara. S. (2020). Prospective visual arts teachers' innovation skills and attitudes towards computer assisted instruction. *International Journal of Technology in Education and Science (IJTES), 4*(2), 98-107.

IJTES International Journal of Technology in Education and Science
Volume 4, Issue 2, Spring 2020 ISSN: 2651-5369

# Prospective Visual Arts Teachers' Innovation Skills and Attitudes towards Computer Assisted Instruction

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## Article Info

***Article History***

Received:
11 July 2019

Accepted:
15 December 2019

***Keywords***

Prospective visual arts teacher
Innovation
Attitude towards computer assisted instruction

## Abstract

The aim of this study is to examine the prospective visual arts teachers' innovation skills and their attitudes towards computer-assisted teaching in terms of demographic and school factors. In this context, using comparative relational research model; the students' attitudes towards innovation skills and computer assisted teaching were examined with a comparative approach. The study group of this research consists of 305 visual arts teacher candidates studying at Dicle University, Anadolu University, Mersin University, Necmettin Erbakan University and Marmara University. Attitude scale and innovation skills scales were used to collect data. According to the analysis of the data, it was seen that visual arts teacher candidates' perceptions of innovation skills and their attitudes towards computer aided teaching are high. In addition, significant differences were found in computer aided teaching attitudes and innovation skills according to faculty type, grade level and gender. Finally, significant relationships were found between innovation skills and entrepreneurship perception.

## Introduction

Research shows that there is a direct correlation between the high scores obtained in international exams and the use of information and communication technologies. ICT can be used as instructional technology and it has been found to contribute to the concentration, motivation and development of cognitive and communicative skills of students (Alan & Sünbül, 2010; Davis, Preston, & Sahin, 2009a, 2009b; Demirer, Çintaş and Sünbül, 2010; Ghavifekr & Rosdy, 2015; Hilton & Canciello, 2018; Kuzbekova, 2015; Leask & Pachler, 2009). According to Spitulnik, Stratford, Krajcik and Soloway (1988), computer-assisted teaching not only contributes to the lessons but also to the development of high level mental and affective skills such as entrepreneurship, innovation and creativity. The contribution of computer-assisted instruction to scientific and innovation skills is very high in all areas (Baş, Kubiatko, & Sünbül, 2016; Pambayun et al., 2019; Sahin & Shelley, 2008; Turunen, 2019). A study by Hickey (2017) revealed that computer-based teaching practices based on constructivism positively enhance students' skills in innovation and art classes.

Visual arts teachers' ability to follow technology up-to-date and use it in educational environment is closely related to their attitudes and innovation skills (Cakir, Ozturk, Unal, 2019, Kara, 2020; Yahya & Adebola, 2019). Thus, it is very important to develop recommendations by examining the perceptions of university students especially receiving art education towards innovation and their attitudes and behaviors towards computer-assisted teaching. Therefore, it has been tried to clarify the attitudes of prospective visual arts teachers towards innovation skills and computer assisted instruction on the basis of a theoretical and practical research below.

### Innovation in Education

The most important features of the information age we are in are the developments in information and technology, globalization, the development and increase of information, and the change and development in the perception of innovation. Competition has become more and more difficult in this age. Every institution tries to live in this environment by giving importance to innovation works. Developing incentive systems that trigger innovative activities and giving importance to innovative ideas have become indispensable. In the last century, the budgets allocated by the countries for R&D activities have reached very large numbers as a natural result of this situation (OECD, 2008).

Innovation is used in terms of renovation. It is not possible to fit the meaning of innovation into a single word. The basis of this concept is to transform everything perceived as new to social and economic values and to

benefit from it. In the literature, the concept of innovation is defined as renovation transformed into material value and is explained more in relation to the economy (Elçi, 2006). On the other hand, it is seen that innovative activities take place in many different sectors from health sector to education sector (Tucker et al., 2017). Many activities such as renewal of educational programs, the organization of in-service trainings, the development of new teaching methods and techniques to increase student achievement, revision of the classroom environment according to the psychological characteristics of students, the regulation of school buildings according to the level of development of children can be regarded as examples of innovation activities in education. Some researchers have recommended the use of renovation or reform rather than innovation in education (Yamaç, 2001).

Social welfare and quality of life, especially economic development, are directly related to innovative initiatives such as unemployment and justice. In addition, it was stated that innovation activities are an effective tool for eliminating social problems such as inequality (OECD, 2008). According to the 2015 report of an international organization, Turkey ranks the 57$^{th}$ among 160 countries. In the ranking of European countries, Turkey is the fifth last (Dutta, Lanvin, & Wunsch-Vincent, 2016). In the report, it is observed that the livability rankings of the countries are parallel to the degree of innovation. This has shown that it is not possible to progress in areas such as health and environment, to solve problems such as equality between men and women and to improve living standards without developing effective policies related to science, technology and innovation (Elçi, 2006). Innovations and improvements in the field of education can improve the quality of human capital. In this way, the welfare and economic order of the society can be improved. Real changes in the education system are only possible with the right innovative activities (Campos, 2014). In this regard, countries seeking to increase their economic competitiveness attach great importance to the education system and allocate great resources for innovative activities (Ayaydın, 2020; Lubienski, 2009; Şahin, 2006).

Rapid changes in technology have affected the education sector significantly like many other sectors. Not developing and changing the education system would be a major mistake while developments in technology change the needs and expectations of the society. A non-renewed education system becomes a system that is disconnected from society and does not respond to the needs of individuals. Therefore, the implementation of innovation activities in the education system is very important for ensuring the future of society. It is stated that countries aiming to grow economically have developed national education programs in accordance with the following principles (Bentley, 2008):

- To improve basic arithmetic skills and literacy level with standard strategies,
- To prepare performance-based reports, to make evaluations and to act according to the accountability principle,
- To equip school buildings with information and communication technologies, to use technology effectively in schools,
- To increase the number of teachers per person,
- To develop new perspectives for the identification, evaluation, training and rewarding of educational leaders,
- To ensure that individuals remain in the education system for longer periods than compulsory education, to establish connections between business lines and schools, to develop higher education institutions in this regard,
- To strengthen the relations between education and labor force, to give more importance to professional development, determination of the roles of employees, professional expertise and performance management,
- To develop the sense of citizenship in young generations and to increase civil solidarity.

When the education systems of our country aiming at EU membership and European countries are compared, it is seen that the centralized understanding is more dominant in the education programs in our country. There is no autonomous understanding of the selection of textbooks, budgets allocated to schools, the manner and duration of the program implementation, the assignment of staff, the determination and change of the gains of the programs (Çınar, Döngel, & Söğütlü, 2009). This is thought to limit the reflection of innovative activities into programs.

On the other hand, entrepreneurship skills have been included in teaching programs as a basic skill in accordance with the requirements of the era. It is stated that it is aimed to educate individuals with innovative thinking skills in order to achieve a strong economy and level of life in the curriculum. It is emphasized that individuals who produce information and also use information for the benefit of humanity are the guarantees of a society with a high quality of life and a strong economy (MoNE, 2009).

**Art Education and Innovation**

Together with scientists and entrepreneurs, artists are also role models for the development of innovative societies. The lifestyles of the artists, the works they have made and the ideas they propose have often shaped society. In this respect, the perception that art education in the society contributes to the development of innovation skills and the formation of new ideas has emerged. It is very important to develop creative ideas for sustainability in the global economy. Today, institutions and organizations need innovative entrepreneurs who produce new ideas and produce new products rather than knowledge and skills in order to compete globally. It is necessary for our country's young people to be resourceful, creative and original in order to keep their competitive power alive today and in the future. One of the best ways to develop creativity is to receive art education (Tedmem, 2013).

Although there is a perception that there is a relationship between art education and innovation in the society, there are not enough studies in the literature that investigate the effect of art education on students' creativity skills, attitudes and behaviors towards innovation. In particular, it is very important to develop recommendations by examining the perceptions, attitudes and behaviors of university students receiving art education towards innovation. Students who develop their skills in any arts can more easily discover their new talents, passions and desires throughout their lives. Art education will provide children and young people with different ways of understanding life and themselves and will facilitate their participation in innovative activities. Art education provides students opportunities to explore, experience, express their thoughts freely and examine them. These opportunities will help students develop innovative attitudes and behaviors (Tedmem, 2013). In this respect, the quality of art education comes to the forefront. Thus, it is important to examine the attitudes and behaviors of the teachers and prospective teachers who will affect the quality of art education related to innovation and to develop suggestions in this direction (Sahin, Akturk and Schmidt, 2009).

Computer-assisted instruction can be considered as a rich learning environment that enables learning to take place. This environment increases the quality of the teaching process, strengthens the student motivation and enables the student to progress according to the speed of learning. Computer-assisted instruction can be considered as a technology-integrated version of the principles of self-learning teaching (Apeanti, 2016; Uşun, 2000).

It is stated that computer-assisted instruction in education positively affects students' learning speed and creative thinking skills. Different kinds of information can be blended and interaction between different cultures in the digital world is possible through technological applications in art education. The audiovisual materials can be used as a whole with such applications. In this way, it is possible to achieve artistic goals for a short time. Making art lessons easily applicable with computer-assisted teaching practices, integrating them into existing teaching processes and interacting will make important contributions to this field (Sheader, Gouldsborough, & Grady, 2006; Sünbül & Bozer, 2015; Yıldız, Sünbül, Koç & Halis, 2004).

According to NYU (2018), in computer-assisted instruction and art classes, students can develop and maintain an impressive portfolio of work that can be shared with teachers as well as other students. The concept of critical inquiry and review can be developed as students begin to observe the work of their pers. Students can criticize each other's works related to art. Students can actively use technology to collaborate with other students. These collaborations can occur at great distances or from class to class or within class or in all of these possibilities. Computer-assisted instruction in art classes provides the ability to eliminate the boundaries of the classroom. We also teach our students how internet resources are used for their own research and open up a thriving world of text, sound, images and video. Thus, the student's access to materials extends beyond the text. In addition, the student should be aware of how best to communicate the results of their efforts. CAE can also help students create their own original artworks and create a project that produces them. Themes that provide rich multiple lives can be developed with CAE to raise students' awareness of art issues (Holmes, 2015; NYU, 2018; Mitra & Steffensmeier, 2000).

Computer assisted instruction can be defined as the whole of the activities in which the learners interact with the courses and activities designed in the computer environment during the learning-teaching process, where the teacher acts as a guide and the computer plays the role of a rich environment and platform. The existence of all the elements mentioned above is necessary for the achievement of the objectives of computer-assisted teaching practices. However, when we look at the factors that affect computer-assisted teaching practices and process, it is seen that it contains various variables such as innovations, student motivation, individual learning differences, interaction, and the quality and scope of course software, readiness of the teachers, perception, attitude and changing role, integration of course content with educational program and how the application of the computer-

assisted instruction is transformed into practice within the school (Aktürk, Şahin, & Sünbül, 2008; Şahin & Yıldırım 1999).

Rapid changes in education have made it compulsory to use computer-assisted teaching. In particular, the increase in the volume of information with each passing day, the importance of individual differences and skills and the inadequate number of teachers keep computer-assisted teaching on the agenda. On the other hand, as with all teaching methods, computer-assisted teaching method has some limitations. These limitations can be listed as follows (Bennett, Dawson, Bearman, Molloy, & Boud, 2017; Demirel & Altun, 2010: 204; Philip, Jackson, & Dave, 2011).

Although computer-assisted research has shown success with the help of technological tools and equipment, some basic problems of computer/technology literacy of teachers and prospective teachers still exist. These are:

- ✓ Teachers and prospective teachers are not sufficiently computer literate (Fisher, 1997).
- ✓ Teachers have limited application skills especially in the use of computer-assisted teaching practices in their field (Sam, Othman & Nordin, 2005; Muehleisen, 2011).
- ✓ Teachers and prospective teachers have limited skills and competences in transforming dynamic internet and computer technologies into practice (ISTE, 2014; Bennett et al., 2017).
- ✓ Teachers and prospective teachers do not receive adequate training in terms of communicating and using Web-based tools to utilize data sources (Madden, Ford, Miller, & Levy, 2005).
- ✓ Prospective teachers often use basic technologies and limit themselves to the use of complex technologies (Sharma, 2017; Cazan, Cocoradă, & Maican, 2016).

The ability of teachers to follow technology up-to-date and use it in an educational environment depends on how they learn in faculty life. Teachers who do not gain this experience in pre-service training or in-service training cannot be expected to use computers because they want their students to go through the same processes as they went through during their student years (Sheader, Gouldsborough and Grady, 2006). In their study, Çelik and Bindak (2005) concluded that primary school teachers' attitudes towards computer did not differ according to gender, branch and place of residence, and teachers with computers had significantly higher attitudes than teachers without computers. Again, Aypay and Özbaşı (2008) examined the teachers' attitudes towards computers and found that teachers with high computer skills used computers for analytical, regulatory and communication purposes, whereas teachers with low computer skills did not use computers in classroom activities at all.

This study aims to determine the attitudes and innovation skills of visual arts teachers towards computer-assisted teaching in educational environment and to examine these attitudes and skills according to certain variables. For this purpose, the following research questions were addressed:

- What is the level of prospective visual arts teachers' attitudes towards innovation skills and computer assisted instruction?
- Do the prospective visual arts teachers' innovation skills and attitudes towards computer-assisted teaching differ significantly by gender?
- Do the prospective visual arts teachers' attitudes towards innovation skills and computer-assisted teaching differ according to their class level?
- Do the prospective visual arts teachers' innovation skills and attitudes towards computer-assisted teaching differ according to how successful they feel?
- Do the prospective visual arts teachers who study at the Faculty of Education and the Faculty of Fine Arts show significant differences in their innovation skills and attitudes towards computer-assisted teaching?
- Do prospective visual arts teachers' attitudes towards computer-assisted teaching significantly predict their innovation skills?

## Method

This study used causal comparative method. Causal comparative methods aim to determine the causes and consequences of differences between groups of people without any interference on conditions and participants (Büyüköztürk, et al., 2015). In this study, prospective visual arts teachers' attitudes towards computer assisted teaching and innovation skills were compared based on causal comparative method according to variables of faculty, gender, class and perceived academic achievement level.

## Study Group

The study group of this study consists of prospective visual arts teachers studying at Dicle University, Anadolu University, Mersin University, Necmettin Erbakan University and Marmara University. Since reaching all of the students requires serious time, effort, economy and team, convenience sampling method was chosen and 305 students were included in the study. 61% of the students (n=186) are girls and 39% (n=119) are boys. 50.8% (n=155) of the students are studying in the faculty of education, while 49.2% (n=150) are studying in the faculty of fine arts. 28.9% (n=88) of the students are in their first year, 23.9% (n=73) in their second year, 26.6% (n=81) of them in the third year and 20.7% (n=63) of them in the fourth year. The mean age of the study group is 21.20 (SD=2,46).

## Measurement Tools

### *Individual Innovation Scale*

Individual Innovation Scale, developed by Hurt, Joseph and Cook (1977) and adapted to Turkish by Sarıoğlu (2014), was used to determine the prospective teachers' perceptions of innovation skills. The original of the scale consists of 20 items and is a 5-point Likert type. Each expression in the scale is scored as follows; strongly disagree (1), disagree (2), undecided (3), agree (4) and strongly agree (5). The structure of the Turkish version of the scale was examined by factor analysis. Two items were extracted from the scale as a result of factor analysis. The Turkish version of the scale consisted of 18 items. The single factor scale explained 49.33% of the total variance. Cronbach alpha internal consistency coefficient was calculated to determine the reliability of the scale and internal consistency coefficient was reported as 0.77 (Sarıoğlu, 2014). The scores obtained from the scale items are collected and evaluated in order to reveal the general innovation level of the individuals. High scores indicate that individual's perception of innovation is high. In this study, Cronbach alpha internal consistency coefficient calculated for the scale is 0.90.

### *Attitude Scale for Computer Assisted Instruction*

The measurement tool developed by Çobanoğlu (2005) was used to determine the attitudes of prospective visual arts teachers towards computer-assisted instruction. The instrument consists of 43 items and is 5-point Likert type. Each expression in the scale is scored as follows; strongly disagree (1), disagree (2), undecided (3), agree (4) and strongly agree (5). The validity of the measurement tool was examined by factor analysis. Items collected under a single factor explained 32% of the total variance. Cronbach's alpha coefficient calculated for the scale was reported as 0.94. Higher scores obtained from the assessment tool indicate that positive attitudes towards computer-assisted teaching are higher. In this research, Cronbach's alpha coefficient calculated for the scale is 0.92.

## Data Analysis

Data were analyzed using descriptive statistics, independent samples t-test and one-way ANOVA. In addition, Pearson correlation analysis and regression analysis were applied to investigate the relationship between attitude towards innovation and computer assisted instruction. Skewness and kurtosis values were calculated and the distribution of the scores obtained from the measurement instruments was examined. The coefficient of skewness should be less than 2 and the coefficient of kurtosis should be less than 7 in order to meet the normal distribution assumption (Finney & DiStefano, 2006). The calculated values (-1.84<Skewness<-0.18; -5.37<Kurtosis<-0.47) indicated that the scale scores showed normal distribution.

As a result of variance analysis, Scheffe test was used to determine the source of the difference. Data were analyzed using SPSS 25.0. Because statistical significance is strongly affected by sample size, it is recommended by the American Psychological Association (2013) to report the exact magnitude of difference or effect. Reporting Cohen's d and eta-squared value is a popular way to show the size of difference in comparing two or more groups. As a rule of thumb, $d = 0.2$ and $\eta 2 = 0.01$ are considered a "small" effect size, $d = 0.5$ and $\eta 2 = 0.06$ represent a "medium" effect size, and $d = 0.8$ and $\eta 2 = 0.14$ a "large" effect size (Cohen, 1988; Field, 2013).

## Findings

Table 1shows that the average score of the prospective visual arts teachers was calculated as 4.18±0.42. The calculated average score indicates that the prospective teachers' perceptions of innovation skills were high. The mean score of attitude towards computer-assisted instruction was 4.15±0.461. This value indicates that prospective teachers had positive attitudes towards computer-assisted instruction.

Table 1. Descriptive Values of Prospective Teachers' Attitudes Scores towards Innovation and CAI

| **Variables** | **N** | **Minimum** | **Maximum** | $\bar{X}$ | **Ss** |
|---|---|---|---|---|---|
| Innovation | 305 | 2.06 | 5.00 | 4.18 | 0.42 |
| Attitude towards CAI | 305 | 1.09 | 4.98 | 4.15 | 0.61 |

Table 2 illustrates that there is no significant gender difference in the mean score of innovation (p>0.05). A significant difference was found in the mean score of attitude towards CAI (p <0.05). Male prospective teachers' attitude score averages were significantly higher. Gender factor has a low effect on attitude scores.

Table 2. Mean Scores, Standard Deviations and t-Test Results of Attitudes towards Innovation and CAI according to Gender

| Variables | Gender | N | $\bar{X}$ | Ss | t | p | Cohen d |
|---|---|---|---|---|---|---|---|
| Innovation | Male | 119 | 4.16 | 0.42 | -0.70 | 0.49 | 0.07 |
| | Female | 186 | 4.19 | 0.42 | | | |
| Attitude towards CAI | Male | 119 | 4.25 | 0.55 | 2.31 | 0.02 | 0.27 |
| | Female | 186 | 4.09 | 0.63 | | | |

Table 3 indicates that there is no significant difference in CAI attitude score scores depending on class level (p>0.05). There is a significant difference in the mean score of innovation depending on class level (p<0.05). Innovation score averages of the fourth year prospective visual arts teachers are significantly higher than that of the first year prospective teachers. Class level factor of prospective visual arts teachers has a low level of impact on innovation.

Table 3. Mean Scores, Standard Deviations and ANOVA Test Results of Attitudes towards Innovation and CAI According to Class Level

| Variables | Class Level | N | $\bar{X}$ | Ss | F | p | $\eta^2$ | Post-Hoc(Scheffe) |
|---|---|---|---|---|---|---|---|---|
| Innovation | 1 | 88 | 4.09 | 0.41 | 4.20 | 0.01 | 0.04 | 4>1 |
| | 2 | 73 | 4.12 | 0.42 | | | | |
| | 3 | 81 | 4.24 | 0.39 | | | | |
| | 4 | 63 | 4.29 | 0.44 | | | | |
| Attitude towards CAI | 1 | 88 | 4.10 | 0.62 | 0.38 | 0.77 | 0.004 | - |
| | 2 | 73 | 4.17 | 0.72 | | | | |
| | 3 | 81 | 4.17 | 0.57 | | | | |
| | 4 | 63 | 4.19 | 0.50 | | | | |

Table 4 explains that there is no significant difference in the mean scores of innovation based on perceived academic achievement (p>0.05). There was a significant difference in CAI attitude scores depending on perceived academic achievement (p<0.05). The mean attitude scores of the prospective teachers with medium and high academic achievement perception are significantly higher than the average score of the prospective teachers with low academic achievement. The perception of academic achievement has an influential effect on attitude scores.

Table 4. Mean Scores, Standard Deviations and ANOVA Test Results of Attitudes towards Innovation and CAI According to Perceived Academic Achievement Level

| Variable | Perceived academic achievement | N | $\bar{X}$ | Ss | F | p | $\eta^2$ | Post-Hoc (Scheffe) |
|---|---|---|---|---|---|---|---|---|
| Innovation | 1. High | 115 | 4.17 | 0.39 | 1.08 | 0.34 | 0.01 | - |
| | 2. Moderate | 140 | 4.20 | 0.45 | | | | |
| | 3 Low | 50 | 4.10 | 0.40 | | | | |
| Attitude towards CAI | 1. High | 115 | 4.31 | 0.52 | 29.13 | <0.01 | 0.16 | 2>1.<br>3>1. |
| | 2. Moderate | 140 | 4.22 | 0.58 | | | | |
| | 3 Low | 50 | 3.61 | 0.58 | | | | |

Table 5 shows that there is no significant difference in the mean score of innovation depending on the type of faculty (p>0.05). However, there was a significant difference in CAI attitude scores depending on the type of faculty (p<0.05). The students' attitudes towards computer-assisted instruction were significantly higher in the faculty of education. The faculty factor has a broad effect on attitude scores.

Table 5. Mean Scores, Standard Deviations and ANOVA Test Results of Attitudes towards Innovation and CAI According to Faculty Type

| Variable | Faculty | N | $\bar{X}$ | Ss | t | p | Cohen d |
|---|---|---|---|---|---|---|---|
| Innovation | Faculty of Education | 155 | 4.18 | 0.42 | 0.19 | 0.85 | 0.02 |
| | Faculty of Fine Arts | 150 | 4.17 | 0.42 | | | |
| Attitude towards CAI | Faculty of Education | 155 | 4.37 | 0.56 | 6.86 | <0.01 | 0.78 |
| | Faculty of Fine Arts | 150 | 3.93 | 0.57 | | | |

It can be seen from Table 6 that there is a low positive and significant relationship between attitudes towards computer assisted instruction and innovation scores (r=0.22; p<0.01). The attitude towards computer explained 5% of the change in innovation ($R^2$=0.047; F=14.89; p<0.001). Prospective teachers' positive attitudes towards computer-assisted instruction affect their perceptions of innovation skills positively (β=0.22; p<0.01).

Table 6. Results of Regression Analysis to Determine the Effect of Attitude towards CAI on Innovation

| Variable | B | Standard error | β | t | Zero-order Correlation |
|---|---|---|---|---|---|
| (Constant) | 3.56 | 0.16 | | 21.94** | 0.22** |
| Attitude towards CAI | 0.15 | 0.04 | 0.22 | 3.86** | |
| R=0.216 | $R^2$=0.047 | | F=14.89 | *p*<0.001 | |

**p<0.01

## Discussion and Conclusions

Significant results have been found in the study which aimed to compare prospective visual arts teachers' innovation skills and attitudes towards computer-assisted instruction. According to the findings of the research, it is seen that prospective visual arts teachers' perceptions of innovation (individual innovation) and their attitudes towards computer-assisted instruction are high and positive. Another finding of the study is that the scores obtained from the innovation scale did not show a significant difference according to the gender of the participants. In some of the studies on entrepreneurship and innovation skills, which are personal traits, no significant differences were found by gender (Sünbül & Yılmaz, 2008; Yılmaz & Sünbül, 2009), but it was found that boys exhibited more innovative and entrepreneurial behaviors than girls in a few studies. According to Goffe and Scase (1992), differences between societies regarding occupations and activities in business life by gender generally develop under the influence of cultural schemes. However, the high level of innovation skills of university students of both sexes who will work in the field of visual arts in the future is a fact to be highly preferred and supported.

The findings in this study also reveal that there is a significant difference in both innovation skills and attitude scores towards computer assisted teaching according to the students' class levels. Innovation perceptions and attitudes towards CAI of final year prospective visual arts teacher were significantly higher than those of lower classes. The findings of this study are similar to those obtained by Karimi, Biemans, Lans, Mulder, and Chizari (2012) and Fayolle, Gailly, and Lassas-Clerc (2006). These researchers indicated that students could improve their entrepreneurship tendencies, innovation skills and ICT competencies along with their university experiences and increasing class levels.

Another finding of the study is that there is a significant relationship between the prospective visual skills teachers' innovation skills and the scores obtained from the attitude scale towards computer assisted instruction. According to the regression analysis, the attitudes of prospective visual arts teachers towards computer assisted instruction predict their innovation skills significantly but with a low level. The studies conducted by Rosenbusch, Brinckmann and Bausch (2011) and Matejun (2016) are also in line with the findings of this study. According to Rosenbusch, Brinckmann and Bausch (2011) and Matejun (2016), technology-relatedness, interests and applications are important in creating innovation potentials and entrepreneurial competencies of individuals in any field or sector. According to these researchers, being able to adapt to technological

innovations, showing positive attitudes, and being open to current and technological changes in the field of business provides important advantages for entrepreneurs in creating unique performances of entrepreneurship products in the sectors.

**Recommendations**

- Courses for prospective visual arts teachers can be organized to improve innovation skills and computer-assisted teaching competencies.
- This study which was carried out in Turkey sample on innovation and attitudes towards computer assisted instruction, can also be studied comparatively in the samples of EU and OECD member countries.
- Longitudinal studies can be conducted to examine the innovation skills and CAI attitudes of prospective visual arts teacher while practicing the teaching profession themselves.

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