INTERNET SELF-EFFICACY PREFERENCES OF INTERNET BASED ENVIRONMENTS AND ACHIEVEMENT OF PROSPECTIVE TEACHERS

ÖĞRETMEN ADAYLARININ İNTERNET ÖZYETERLİKLERİ, İNTERNET TABANLI ORTAMLARA YÖNELİK TERCİHLERİ VE BAŞARILARI

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ABSTRACT: The aims of this study are to determine prospective chemistry teachers' internet self-efficacy and preferences of constructivist internet-assisted environments and to examine the relationship between their internet self-efficacy and their preferences for constructivist internet-assisted environments, the relationship between their achievement in internet-assisted chemistry applications and their preferences for constructivist internet-assisted environments, the relationship between prospective chemistry teachers' achievement in internet-assisted chemistry applications and their internet self-efficacy. An adapted form of Questionnaire Exploring Internet Self-Efficacy developed by Tsai and Tsai (2003), Tsai and Lin (2004), Wu and Tsai (2006), and Peng, Tsai and Wu (2006), a modified form of Constructivist Internet Learning Environment Survey (CILES) (Chuang and Tsai, 2005; Wen et al., 2004) and The Chemistry Achievement Test (CAT) which was developed by the researcher was used as the data collection tools. For data analysis, descriptive statistics and the Pearson correlation coefficient were used.

Keywords: internet self-efficacy, preferences of constructivist internet-assisted environments, chemistry achievement.

ÖZET: Bu çalışmanın amacı kimya öğretmen adaylarının internet öz yeterliklerinin, yapılandırmacı internet destekli ortamlara yönelik tercihlerinin nasıl olduğunu belirlemek, internet öz yeterlikleri ile yapılandırmacı internet tabanlı ortamlara yönelik tercihleri arasındaki ilişkiyi, internet destekli kimya dersi uygulamalarındaki başarıları ile yapılandırmacı internet tabanlı ortamlara yönelik tercihleri arasındaki ilişkiyi, internet destekli kimya dersi uygulamalarındaki başarıları ile internet öz yeterlikleri arasındaki ilişkiyi incelemektir. Veri toplama aracı olarak, Tsai and Tsai (2003), Tsai and Lin (2004), Wu and Tsai (2006), and Peng, Tsai and Wu (2006) tarafından geliştirilen İnternet Özyeterlik Ölçeği'nin adapte edilmiş hali, Yapılandırılmış İnternet Öğrenme Ortamları Anketi'nin modifiye edilmiş şekli (Chuang and Tsai, 2005; Wen et.al. 2004) ve araştırmacı tarafından geliştirilen Kimya Başarı Testi (KBT) kullanılmıştır. Verilerin analizi sonucunda öğretmen adaylarının internet öz yeterlikleri ile yapılandırmacı internet tabanlı ortamlara yönelik tercihleri arasında ve yapılandırmacı internet tabanlı ortamlara yönelik tercihleri ve internet destekli kimya dersi uygulamalarındaki başarıları arasında istatistikî olarak anlamlı ilişki saptanmıştır.

Anahtar sözcükler: internet özyeterliği, yapılandırmacı internet destekli ortamlara yönelik tercihler, kimya başarısı

1. INTRODUCTION

With the continuing development of computer networks and their entry into the classroom, a new stage of computer-assisted education, Internet-assisted education, has taken its place in the educational system (Ergün, M 1998). The Internet is a technology which provides interaction between student-teacher and the lesson content and creates electronic environments in which texts, data and graphics can be shared by individuals' and groups' in the same or different locations connected via computers. It has some advantages for students such as providing a learning environment that is independent of time and place, responding to the needs of faster and slower learners and providing the opportunity fast access to information (Erkunt, Akpınar 2002).

According to data obtained by many researchers, a successful learning in a classroom environment depends on the characteristics of the students such as their cognitive styles and preferences, learning styles, information processing ability, self-efficacies, learning preferences together with many other factors. The success obtained in the internet environment or internet-assisted education is affected by these factors.

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According to Bandura (1977), self-efficacy is one's belief in his/her capacity to perform a specific task. Individuals may define their skills a nd capabilities in order to perform certain actions or activities.

Internet self-efficacy is defined as the belief that one can successfully perform a distinct set of behaviors required to establish, maintain and utilize effectively the Internet over basic personal computer skills (Eastin and LaRose 2000).

Students' self-efficacy towards computers and internet influence how they use the system (Hill et.al. 1987; Oliver and Shapiro 1993; Kinzie et.al. 1994; Tsai and Tsai 2003). Internet self efficacy guides students' views, strategies and outcomes in internet based instruction (Liang and Tsai, 2008). Students having low internet self-efficacy lack confidence in their ability to use the system to achieve desired results, instead students with high internet self-efficacy are more confident in their ability to use the system (Murphy 1988 akt Tsai and Tsai 2003). Hill and Hanafin (1997) found that self-efficacy influences the strategies used in web-based learning. Internet self-efficacy can foster better information searching strategies (Tsai and Tsai 2003). In their study Liang and Tsai (2008) found that high school students showed stronger preferences for the learning environment where they are easily to use or navigate and where they can meaningfully integrate real life problems. Also according to Chang, Hsaiao and Barufaldi (2006), Kinchin (2004), Meyer and Muller (1990), preferences toward learning environment were significantly associated with academic achievement.

1.1. The Objective of the Study

The objectives of this study are;
1. to determine prospective teachers' level of internet self efficacy;
2. to determine prospective teachers' preferences of constructivist internet based environments;
3. to examine the relationship between their internet self-efficacy and preferences in constructivist internet based environments,
4. to examine the relationship between their achievement in an internet-assisted chemistry application and preferences in constructivist internet based environments,
5. to examine the relationship between their success in an internet-assisted chemistry application and their internet self-efficacy.

1.2. Research Questions

1. What is the level of prospective teachers' self-efficacy?
2. What are the preferences in constructivist internet based environments of the prospective teachers?
3. Is there a relationship between prospective teachers' internet self-efficacy and preferences in constructivist internet based environments?
4. Is there a relationship between achievement in an internet-assisted chemistry application and preferences in constructivist internet based environments of prospective teachers?
5. Is there a relationship between achievement in an internet-assisted chemistry application and internet self-efficacy of prospective teachers?

2. METHOD

2.1. Participants

The participants in the study were 50 1st year prospective teachers attending a Basic Chemistry II course in the Department of Secondary Science and Mathematics Education in the Faculty of Education at Hacettepe University

2.2. Instruments

Questionnaire Exploring Internet Self-Efficacy:

In order to assess students' Internet self-efficacy, an adapted form of a questionnaire developed by Tsai and Tsai (2003); Tsai and Lin (2004); Wu and Tsai (2006), and Peng, Tsai and Wu (2006) was used. The questionnaire consists of 10 items and was evaluated by a five-point Likert scale from "very confident" to "very unconfident". The alpha reliability coefficients was 0,89. For this study, the questionnaire was translated and adapted to Turkish and reliability analyses were done. After the adaptation, the number of items were reduced to 7; and the overall alpha was found as 0,91.

Questionnaire for assessing preferences of constructivist Internet-based Learning Environments:

For exploring student preferences toward constructivist internet based learning environments a modified form of Constructivist Internet Learning Environment Survey (CILES) (Chuang and Tsai, 2005; Wen et.al., 2004) as well as the revised version of CILES developed by Lee and Tsai (2005), Tsai (2005) and Tsai (2008) was used. The reliability was determined as 0,97. For this study CILES was translated and adapted into Turkish. And reliability coefficient Alpha was found as 0,96. After the reliability analyses adapted form consists of 44 items and 8 parts and presented in a five point Likert mode from "strongly agree" to "strongly disagree". The detailed description of each part is given below:

1. *Ease of use scale (EU):* measuring perceptions of the extent to which students prefer that the internet-based learning environments are easy-to-use.
2. *Relevance scale (RE):* assessing perceptions of the extent to which students prefer that the Internet-based learning environments are authentic and represent real life situations.
3. *Multiple sources (MS):* exploring perceptions of the extent to which students prefer that the Internet-based learning environments contain various information sources and interpretations.
4. *Student Negotiation scale (SN):* assessing perceptions of the extent to which students prefer to have opportunities to explain and modify their ideas to other students in the Internet-based learning environments.
5. *Inquiry Learning Scale (IL):* measuring perceptions of the extent to which students have the opportunities to be engaged in inquiry activity in the Internet-based learning environments.
6. *Cognitive Appreticeship Scale (CA):* exploring perceptions of the extent to which students prefer to have opportunities to acquire helpful and timely guidance provided by the Internet-based learning environmants.
7. *Critical Judgement Scale (CJ):* assessing perceptions of the extent to which students prefer to have opportunities to critically evaluate information in the internet-based learning environments.
8. *Epistemological Awareness Scale (EW):* assessing perceptions of the extent to which students prefer to have opportunities to explore the value, source, meri tor nature of knowledge in the internet-based learning environments.

Chemistry Achievement Test:

The Chemistry Achievement Test developed by the researcher (CAT) was applied in order to measure the achievement of prospective teachers in the internet-assisted lesson on the topic of "Hybridization and Bonding". The test comprises 10 open ended questions including concepts such as students' hybridization concept, hybridization types, molecular geometry, chemical bond concept, chemical bond formation, polarity and non-polarity. Content validity was provided by specialists in the field. Each question was evaluated out of 10 points and the maximum total for the test was 100 points.

2.3. Implementation Stages of the Study

The study was carried out with prospective 50 1st year teacher prospectives attending a Basic Chemistry II course in the Department of Secondary Science and Mathematics Education in the Faculty of Education at Hacettepe University, over a period of 5 weeks in the 2009-2010 academic year. At the beginning of the study, "Questionnaire Exploring Self Efficacy" and "Questionnaire for Assessing Preferences of Constructivist Internet Based Learning Environments" were applied to prospective teachers. "Hybridization and Bonding" was chosen as the application subject. As it is stated in much of the related research (Gabel 1996; LevyNahum, Hofstein, Mamlok-Naaman and Bar-Dov, 2004 and Taber, 2002), the subject of hybridization and bonding is defined as abstract and difficult by students and they have difficulty in visualizing these events microscopically and three dimensionally. In the application process, the topic of "Hybridization and Bonding" was presented via traditional method to students having the same level of basic chemistry information and basic computer skills and ability to use the internet. In parallel with the topic taught, the students were able to access information related to the topic once more from the

http://people.southwestern.edu/~footezm/GenChemTutorials/vseprquiz/vsepr_quiz2.html

http://www.mp-docker.demon.co.uk/as_a2/topics/shapes_of_molecules/index.html   sites   on   the internet environment, and examined 3 dimensional animations of the concepts of hybridization, the formation of hybrid orbital, the formation of bonds, and evaluated their knowledge via online quizzes. Finally, The Chemical Achievement Test (CAT) was applied in order to measure the achievement of prospective teachers in the internet-assisted applications on the topic of "Hybridization and Bonding".

2.4. Analysis of the Data

In the study, descriptive statistics and the Pearson correlation coefficient were used in data analysis.

3. FINDINGS

In relation to the first and the second research question of the study, the prospective teachers' internet self-efficacy and preferences of constructivist internet based environments were detected via descriptive statistics. In Table 1, the descriptive statistical results of the prospective teachers' internet self-efficacy and their preferences for constructivist internet based environments are given.

Table 1: The Results of Descriptive Statistics Related to Internet Self-Efficacy and the Preferences in Constructivist Internet Based Environments of Prospective Teachers

	Mean	SD
Internet Self-efficacy	31,29	4,79
Ease of use scale (EU):	19,29	2,79
Relevance scale (RE):	20,06	3,93
Multiple sources (MS):	15,92	3,15
Student Negotiation scale (SN):	18,49	3,97
Inquiry Learning Scale (IL):	19,47	3,37
Cognitive Appreticeship Scale (CA):	20,08	3,65
Critical Judgement Scale (CJ):	11,65	1,76
Epistemological Awareness Scale (EW):	15,90	2,73

Table 1, shows that the mean of the points obtained by prospective teachers from Questionnaire Exploring Internet Self-efficacy is . (X=31,29). This result indicates that prospective

teachers had high internet self-efficacy. In Table 1 it can be seen that highest mean for prospective teachers' preferences of constructivist internet based environments, is in Cognitive Apprenticeship Scale (CA) (X= 20,08), Relevance scale (RE) (X=20,06), Inquiry Learning Scale (IL) (X=19,47) sub dimensions and the lowest mean is in Critical Judgement Scale (CJ) (X=11,65) sub dimension.

In relation to the third research question of the study, the relationship between the prospective teachers' internet self-efficacy and preferences in constructivist internet based environments was determined with a Pearson correlation coefficient and the results are shown in Table 2.

Table 2: The Relationship Between Prospective Teachers' Internet Self-Efficacy and the Preferences in Constructivist Internet Based Environments

	RE	MS	CA	CJ
Internet Self-efficacy	0,42**	0,30**	0,39**	0,50**

**p <0,05

Table 2 shows a statistically significant relationship exists between prospective teachers' internet self-efficacy and relevance scale (RE), multiple sources (MS), Cognitive Appreticeship Scale (CA), Critical Judgement Scale (CJ) sub dimensions.

In relation to the fourth research question of the study, the relationship between the prospective teachers' achievement in internet-assisted chemistry applications and their preferences in constructivist internet based environments was determined with a Pearson correlation coefficient and a statistically significant relationship was detected between them (r= 0,314 p=0,25 p<0,05).

In the fifth research question of the study, the relationship between the prospective teachers' achievement in internet-assisted chemistry applications and internet self efficacy was determined with a Pearson correlation coefficient and it was determined that there was no statistically significant relationship between them (p=0,336, p>0,05).

4. RESULTS, DISCUSSION and RECOMMENDATIONS

As a result of the descriptive statistics analysis carried out in line with the first objective of the study, it was detected that prospective teachers have high internet self-efficacy. Prospective teachers' commonly use the internet both for their personal needs and with the aim of academic study; and benefit commonly from the internet environments as source and in order to make practice. For this reason, their having high self-efficacy is an expected result.

Examining their preferences of constructivist internet based environments: it was determined that prospective teachers mostly preferred the internet environments in which they can receive the most support; receive instant beneficial feedback and guidance; where they can find the appropriate information about real life examples in relation to the topic they search for, test their own ideas and participate in inquiry based activities. The prospective teachers leastly chose internet environments in which they can carry out critical judgment and assess information. These findings are consistent with those found by Tsai (2008). Similarly, Tsai determined in this study that high school students preferred the internet environments where they can easily search for and access information; where information is connected to real life.

Concerning the third objective of the study, a significant relationship was found between prospective teachers' self-efficacy and their preference for internet environments where they can find

the appropriate information about real life in relation to the topics; that include a large amount of information sources, provide support, and where they can carry out critical judgment. In the study carried out by Tsai and Tsai (2003) in order to examine the relationship between students' internet self-efficacy in web-based science lessons and their research strategies on the web, it was determined that students with higher internet self-efficacy had better research strategies. Similarly, Hill and Hanafin (1997) also determined that self-efficacy affected the development of strategies in web-based learning environments.

In terms of the fourth objective of the study, it was detected that there was a statistically significant relationship between prospective teachers' achievement in internet-assisted chemistry applications and their preferences of constructivist internet environments. Similarly, Tsai and Tsai (2003) showed that students having better information searching strategies learn better than the others. Kinchin (2004) determined in the study carried out with elementary school students that students' preferences of constructivist internet based environments were related with their achievement.

In relation to the fifth objective of the study, it was determined that there was no statistically significant relationship between prospective teachers' success in an internet-assisted chemistry lesson and their internet self-efficacy. Although positively significant relationship was detected in many issues in studies which investigated the relationship between self-efficacy and achievement (Collins 1982, Bandura 1997; Pajares 1996; Schunk 1995, Lent, Brown and Larkin 1984). Pajares and Schunk (2002) interpreted the failure of students with high self-efficacy perception as being a result of the students in question not having exerted enough effort on the topic. Similarly, in the study carried out by Joo, Bong and Choi (2000) on the effect of self-efficacy theory on web based instruction; it was determined that students' self-efficacy beliefs were not indicators of their achievement.

Summarizing the results obtained from this study it is concluded that Internet self-efficacy affects the development of research strategies in web-based environments and the students with higher internet self-efficacy can carry out better research. In addition, a significant relationship was detected between prospective teachers' achievement in internet-assisted chemistry applications and their preferences in constructivist internet environments and internet self-efficacies.

All of these results demonstrate the importance of internet self-efficacy, the preferences of internet-assisted environments and achievement concepts and emphasize that these are concepts that are related to each other. Since the internet has an important place in modern life and the current educational system; the issue of how to gain the most benefits from these technologies should be the subject of further research by educators. The environments that will improve internet self-efficacy of prospective teachers; the lesson environments that will increase self-efficacy and assist prospective teachers in resolving the concerns they have. Since prospective teachers mostly choose the internet environments that will provide them with the most support and instant feedback, provide information about real life events in relation to the topics they are searching for; include inquiry based activities; these points should be taken into consideration while preparing or choosing internet-assisted learning environments.

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Genişletilmiş Özet

Sınıf ortamında başarılı bir öğrenme, pek çok faktörün yanında öğrencilerin bilişsel stilleri ve tercihleri, öğrenme stilleri, bilgi işleme süreçleri, öz yeterlikleri, öğrenme tercihleri gibi özelliklerine de bağlıdır. İnternet ortamında ya da internet destekli yapılan eğitimlerde de elde edilen başarı bu faktörlerden etkilenmektedir.

Bandura (1977)'ya göre, öz yeterlilik bir bireyin belirli bir işi ya da görevi gerçekleştirmek için kendi kapasitesine olan inancıdır. İnternet öz yeterliği ise, bireyin temel bilgisayar yetenekleriyle interneti etkili olarak kullanabileceğine olan inancıdır (Eastin and LaRose, 2000). Hill and Hanafin (1997), öz yeterliğin web-tabanlı ortamlarda uygulanan stratejileri etkilediğini saptamıştır. Yüksek Internet özyeterliği daha iyi bilgi arama stratejisine sahip olmayı sağlayabilmektedir (Tsai and Tsai, 2003).

Bu çalışmanın amacı; öğretmen adaylarının; 1. İnternet öz yeterliklerinin ne seviyede olduğunu belirlemek, 2.Yapılandırmacı internet tabanlı ortamlara yönelik tercihlerinin nasıl olduğunu belirlemek, 3. İnternet öz yeterlikleri ile yapılandırmacı internet tabanlı ortamlara yönelik tercihleri arasındaki ilişkiyi incelemek, 4. İnternet destekli kimya dersi uygulamalarındaki başarıları ile yapılandırmacı internet tabanlı ortamlara yönelik tercihleri arasındaki ilişkiyi incelemek, 5. İnternet destekli kimya dersi uygulamalarındaki başarıları ile internet öz yeterlikleri arasındaki ilişkiyi incelemektir.

Çalışmaya 2009–2010 öğretim yılı bahar yarıyılında, Hacettepe Üniversitesi, Eğitim Fakültesi, OFMA Bölümünde birinci sınıfa devam eden ve Temel Kimya II dersini alan 50 öğretmen adayı katılmıştır.

Öğrencilerin yapılandırmacı internet tabanlı ortamlara yönelik tercihlerini belirlemek için Lee and Tsai (2005), Tsai (2005) and Tsai (2008) tarafından geliştirilen Yapılandırmacı İnternet Öğrenme Ortamları Anketi'nin Chuang and Tsai (2005); Wen vd. (2004) tarafından modifiye edilmiş şekli kullanılmıştır. Ölçeğin güvenilirliği 0,97 olarak saptanmıştır. Bu çalışma için Türkçe'ye çevrilen anketin güvenilirliği 0,96 olarak bulunmuştur. Öğrencilerin İnternet Özyeterliklerini saptamak için Tsai and Tsai (2003), Tsai and Lin (2004), Wu and Tsai (2006), ve Peng, Tsai and Wu (2006) tarafından geliştirilen İnternet Özyeterlik Anketi kullanılmıştır. Ölçeğin güvenilirliği 0,89 olarak saptanmıştır. Bu çalışma için Anket Türkçe'ye adapte edilmiş ve alfa güvenilirlik katsayısı 0.91 olarak belirlenmiştir. Öğretmen adaylarının "Hibritleşme ve Bağlar" konusundaki başarılarını ölçmek için araştırmacı tarafından geliştirilen "Kimya Başarı Testi" kullanılmıştır

Çalışma 2009-2010 öğretim yılında, Hacettepe Üniversitesi, Eğitim Fakültesi, OFMA Bölümünde birinci sınıfa devam eden ve Temel Kimya II dersini alan 50 öğretmen adayı ile 5 haftalık süreçte gerçekleştirilmiştir. Çalışmanın başında öğretmen adaylarına "Questionnaire Exploring Self Efficacy" ve "Questionnaire for Assessing Preferences of Constructivist Internet Based Learning Environments" uygulanmıştır Uygulama konusu olarak "Hibritleşme ve Kimyasal Bağlar" seçilmiştir. Pek çok araştırmada da belirtildiği gibi (Gabel, 1996; LevyNahum, Hofstein, Mamlok-Naaman and Bar-Dov, 2004), kimyasal bağlar ve hibritleşme konusu öğrenciler tarafından soyut ve zor olarak nitelendirilmekte ve öğrenciler bu olayları mikroskobik ve üç boyutlu olarak zihinlerinde canlandırmakta zorluk çekmektedirler. Uygulama sürecinde aynı temel kimya bilgi seviyesine ve temel bilgisayar ve internet kullanma becerisine sahip öğrencilere "Hibritleşme ve Kimyasal Bağlar" konusu geleneksel yöntemle anlatılmıştır. Aynı zamanda öğrenciler işlenen konulara paralel olarak http://people.southwestern.edu/~footezm/GenChemTutorials/vseprquiz/vsepr_quiz2.html,http://www.

mp-docker.demon.co.uk/as_a2/topics/shapes_of_molecules/index.html sitelerinden hem konu ile ilgili bilgileri bir kez daha okuyabilmişler, hibritleşme, hibrit orbitallerin oluşumu, bağların oluşumu kavramlarının 3 boyutlu canlandırmasını incelemiş, online quizlerle bilgilerini değerlendirmişlerdir. En son olarak öğretmen adaylarının "Hibritleşme ve Bağlar" konusunda internet destekli uygulamalardaki başarılarını ölçmek amacıyla "Kimya Başarı Testi" uygulanmıştır.

Çalışmada verilerin analizinde betimsel istatistikler ve pearson korelasyon katsayısı kullanılmıştır

Çalışmanın ilk amacı doğrultusunda yapılan betimsel istatistik analizleri sonucunda, öğretmen adaylarının yüksek internet öz yeterliğine sahip oldukları saptanmıştır.

Yapılandırmacı internet ortamlarına yönelik tercihleri incelendiğinde: Öğretmen adaylarının en fazla yardımcı destekler alabilecekleri, anında faydalı feedback ve rehberlik alabilecekleri, aradıkları konuda gerçek hayatla ilgili uygun bilgileri bulabilecekleri, kendi fikirlerini test edebilecekleri ve sorgulamaya dayalı aktivitelere katılabilecekleri internet ortamlarını tercih etikleri saptanmıştır. En az tercih ettikleri internet ortamları ise kritik muhakeme yapabilecekleri, bilgiyi değerlendirebilecekleri ortamlardır.

Çalışmanın üçüncü amacı doğrultusunda öğretmen adaylarının internet öz yeterlikleri ile internet tabanlı ortamlara ilişkin gerçek hayatla ilgili uygun bilgileri bulabilecekleri, çok fazla bilgi kaynağı içeren, yardımcı destekleri alabilecekleri, kritik muhakeme yapabilecekleri ortamları tercihleri arasında anlamlı ilişki bulunmuştur.

Çalışmanın dördüncü amacı doğrultusunda öğretmen adaylarının internet destekli kimya dersindeki uygulamalardaki başarıları ile yapılandırmacı internet ortamlarına yönelik tercihleri arasında istatistikî olarak anlamlı ilişki olduğu saptanmıştır.

Çalışmanın beşinci alt problemi doğrultusunda öğretmen adaylarının internet destekli kimya dersi uygulamalarındaki başarıları ile internet öz yeterlikleri arasındaki ilişki incelendiğinde istatistikî olarak anlamlı bir ilişki saptanamamıştır

Elde edilen sonuçlar özetlenecek olursa: İnternet öz yeterliği web tabanlı ortamlarda araştırma yapma stratejilerini etkilemekte, internet öz yeterliği yüksek olan öğrenciler daha iyi araştırma yapabilmektedirler. Ayrıca öğretmen adaylarının internet destekli kimya derslerindeki uygulamalardaki başarıları ile yapılandırmacı internet ortamlarına yönelik tercihleri ve internet öz yeterlikleri arasında anlamlı ilişki saptanmıştır. ,

Bütün bu sonuçlar, internet öz yeterliği, internet destekli ortamlara yönelik tercihler ve başarı kavramlarının önemini ortaya koymakta ve birbirleriyle ilişkili kavramlar olduğunu vurgulamaktadır. Günümüzde internet bütün yaşamımızda ve eğitim sistemimizde önemli bir yere sahip olduğuna göre; bu teknolojiden nasıl en tekili şekilde faydalanılacağı eğitimcilerin en önem verdikleri araştırma konularından biri olmalıdır. Öğretmen adaylarının internet öz yeterliklerini geliştirecek ortamlar hazırlanmalı, öz yeterliği artırıcı, sahip oldukları kaygılardan uzaklaştırıcı ders ortamları hazırlanmalıdır. Öğretmen adayları en fazla yardımcı destek ve anında feedback alabilecekleri, aradıkları konularda gerçek hayatla ilgili bilgi bulabilecekleri, sorgulamaya dayalı aktiviteleri içeren internet ortamlarını tercih ettiklerine göre, internet destekli ya da internet tabanlı öğrenme ortamları hazırlarken ya da seçerken bu noktalara dikkat edilmelidir.