



The effect of self-efficacy on the lifelong learning tendencies of Computer Education and Instructional Technologies pre-service teachers: A case study

Burçak Çağla Garipağaoğlu¹

Abstract

The main purpose of this study was to investigate the effect of self-efficacy on the lifelong learning tendencies of Computer Education and Instructional Technologies (CEIT) pre-service teachers. The second aim was to determine the level of lifelong learning tendencies of those pre-service teachers and to investigate how it differs with respect to some variables. Data were collected from the pre-service teachers of Computer Education and Instructional Technologies (CEIT) department of a large foundation university located in Istanbul, Turkey. CEIT students' lifelong learning tendency was assessed by Coskun Diker and Demirel's (2010) 27-item Lifelong Learning Tendency Scale. Students' self-efficacy was measured by a 17-item scale which was originally developed and validated by Sherer and Adams (1983) and translated into Turkish by Yildirim and Ilhan (2010). The data was analyzed using IBM SPSS Statistics 19. The results of this study may give guidance to administrators, faculty members and consultants who wish to empower students to manage their own learning and help them develop more positive attitudes towards lifelong learning.

Keywords: self-efficacy; lifelong learning tendency; Computer Education and Instructional Technologies; pre-service teachers; Turkey

Introduction

Lifelong learning plays a vitally important role not only in the pursuit of personal and professional development but also in national competitiveness and development. It is evident that lifelong learning has become an imperative for employability in many sectors. Therefore, a positive attitude towards lifelong learning in the workforce has gradually become an asset that industries yearn for to increase their competitiveness. At the same time, it has also become something that governments try to inculcate in their people for national competitiveness, as it is considered as the

¹ Dr. Burçak Çağla Garipağaoğlu, Faculty of Educational Sciences, Bahçeşehir University, Istanbul, Turkey, burcakcagla.garipagaoglu@bahcesehir.edu.tr.

nations' primary source of competitive advantage and a driver of economic growth. As a result, more and more countries, particularly the ones perceived as the 'Third World' countries, have started to see education as a path to prosperity. Because it has been a concept frequently cited as the antecedent of national competitiveness, it also became one of the major areas of growth in educational research studies.

Starting from the premise that it is not really possible to equip young people with all the knowledge and skills that they will need throughout their lifetime at schools, colleges or universities, lifelong learning may be the only sustainable advantage for the prosperity of nations (Bentley, 1998). Therefore, in pursuing national strategies for competitiveness, governments have eventually started to promote the goal of becoming a 'learning society'. Therefore, it is clearly important for undergraduate education to promote positive attitudes towards lifelong learning, and prepare students for the high demands of the new world that they will encounter upon their graduation.

Literature Review

There are widespread changes in the cultures, values and lifestyles of people, particularly in the developed countries. They arise partly from the changing patterns of work and leisure, and family life and partly from the changes in values, attitudes and identities due to the impact of globalization and technology (Green, Preston, & Sabates, 2003). These deep-rooted changes have major implications for education and training at all levels.

First of all, as noted by Schwartz (1996), rapid technological advancements play an increasingly important role in education, as it is the human community's mean for keeping up-to-date. Technological changes shorten the shelf-life of skills and knowledge, leading to continuous restructuring and downsizing (Schwartz, 1996). Enforced retraining, job change and redundancy are increasingly interrupting the careers of people and force them to attend continuing education programs (Green, Wolf, & Loney, 1999). The career is no longer seen as an institutional progression that comes along with seniority, but more like a 'learning trajectory' where opportunities are created from the constant acquisition of new sets of skills and attitudes (Green, Wolf, & Loney, 1999). As noted by Green et al. (1999), adult life courses are less linear, less predictable and more variable than in the past. The transition from 'youth' to adult life has become more complex and more delayed in recent years. This transition is no longer sudden and complete, but prolonged and often difficult (Green, Preston, & Sabates, 2003). Therefore, it is also no longer appropriate to see education and training as a stage in people's lives, undertaken before they enter

the workplace; but rather as something which is a lifelong enterprise (Green, Preston, & Sabates, 2003).

Second, the variety and uncertainty of possible futures for youth poses special challenges for education and training. As Green et al. (2003) argued, the increasing complexity and flexibility of multiple pathways for youths, and the proliferation of personal choices which they bring about, put a premium on the availability of continuing education. Adolescents are faced with a bewildering variety of choice; it is essential therefore that his/her education provide him/her with skills, attitudes and opportunities that enable him/her to choose wisely.

Third, the gradual ageing of the workforce in developed countries also has important implications for education and training. Demographic changes indicate that older workers are increasingly important; at any given time they constitute a large majority in the workforce, and the re-training of old employers becomes an issue of paramount concern (Green, Preston, & Sabates, 2003). Growing number of retirees make new demands on education. As lifelong learning becomes an imperative for young and elderly people alike who wish to remain economically active for longer, policy-makers in most countries start to understand the importance of educating knowledgeable, inquiring, and reflecting young people who are capable of initiative in their own learning (Green, Preston, & Sabates, 2003; Sen, 2001).

Lifelong learning

Lifelong learning is a deliberate and focused learning that takes place throughout a person's lifetime (Diker Coskun & Demirel, 2010). Lifelong learning can also be defined as the "capacity to respond flexibly to changing circumstances, to learn throughout a career, and ...to deal capably with previously unmet situations" (Bligh, 1982), or "life-wide, voluntary and self-motivated pursuit of knowledge for either personal or professional reasons" (Diker Coskun & Demirel, 2010). According to Knapper and Cropley (2000), lifelong learners are active learners who plan and assess their own learning rather than waiting for others plan for themselves. They are strongly capable of learning both in formal and informal settings, from their peers, teachers, mentors, and throw their knowledge into different combinations and wise enough to use different learning strategies for different situations (Knapper & Cropley, 2000).

Changes in technologies, increasing demands of the new economy of abundant supply, the fierce global competition and the growth of increasingly well-informed and well-educated consumers, create new demands for the education sector (Green et al., 1999). Lifelong learning is, thus, becoming a sector of mass participation, particularly as people in developing countries realize

that their financial survival depends on it. For this reason, governments, particularly the ones in developed countries, place increasing emphasis on the issue of 'lifelong learning'.

In the world we live in today, students are taught at schools that Japan's economic success in the post-war era, the takeoff of the Asian "tigers" and the most effective global companies such as Nissan, Shell and BP were all founded on effective learning (Schwartz, 1996). Therefore, nations and companies are starting to invest a growing share of their income in continuing education. Companies want their workforce to be lifelong learners, and therefore also strive to hire people who are willing and capable for lifelong learning. As a result, lifelong learning is gradually becoming an issue of paramount concern as higher education institutions, industries and employer groups recognize the value of, and need for, graduates in pursuit of personal development and excellence in professional practice (Cervero, 1985; Kember, Leung & Ma, 2007; London & Mone, 1999). In the light of above discussion, it can be concluded that one of the primary objectives of schools and colleges, particularly the higher level education should be to provide all young people with new sets of skills and attitudes which are essential for lifelong learning.

Self-efficacy

According to Bandura (1995, p.2), self-efficacy can be defined as "the belief in one's capabilities to organize and execute the courses of action required to manage prospective situations". A high level of self-efficacy can help people maintain their efforts until their goals are met (Kumar & Uz Kurt, 2010). Research has shown that individual self-efficacy can be described as the function of prior cognitive, social, physical experience and learning (Bandura, 1986). Self-efficacy thus increases with hard-won accomplishments rather than personality and traits which are relatively stable human characteristics (Kumar & Uz Kurt, 2010).

Pajares (2002) argues that the level of self-efficacy can strictly affect and determine the choices of students, the effort students expend on their learning, their resilience and perseverance to continue the task at hand, or the level of stress and anxiety they experience during their learning. According to Firmin and Miller (2005), positive attitude, confidence in one's own abilities to start, continue and succeed in a job, high motivation, and the ability to manage and control negative feelings successfully is what is required for lifelong learning. Self-efficacy is a construct which has been studied in many different context including learning, individual entrepreneurship, technology solutions, innovativeness, change, and task completion. Studies have found that self-efficacy is significantly related to people's engagement in change and development (Smylie, 1988), and entrepreneurship (Hmieleski & Baron, 2008; Hyvonen & Tuominen, 2006).

Lifelong learning and Self efficacy

Today's world, with its unprecedented technological innovations, not only forces people to be more adaptable to cope with uncertainty and change, but also to be more proactive and creative in inventing their own careers. Thus, the real challenge to educators is to provide students with an education that enhances their aptitude for continued self-directed learning, and help them gain enough confidence so that they can initiate, continue, and finish any endeavor they like.

While there has been a growing widespread interest on lifelong learning, the question of 'who should be responsible for ongoing education' is still a hotly debated issue. While some argue that educational institutions or professional associations should be responsible for it, others suggest that the individuals themselves should take the major responsibility. However, it is certain that the major focus is still on the need to increase access to learning resources, or providing learners with technology to help them learn whatever they want at any time they wish. Furthermore, far less attention has been given to supporting students' personal learning throughout their lifetime by helping them develop more positive attitudes towards lifelong learning (Sharples, 2000). Considering that many professionals do not have the required skills and abilities needed for lifelong learning (Livneh & Livneh, 1999), one of the most important issues for higher education institutions should, therefore, be whether students are developing a belief in, and commitment to, lifelong learning (Bath & Smith, 2009). Thus, investigating the factors that contribute to the lifelong learning is highly critical in order to encourage students to be lifelong learners. Although recent research has revealed the importance of the appropriate learning environments to the development of some skills and attitudes necessary for lifelong learning (Kember, Leung, & Ma, 2007), most research has tended to focus on demographic and socio-economic characteristics of lifelong learners such as gender, self and parental education level, and employment status as predictors of lifelong learning, as opposed to examining development of lifelong learning characteristics themselves (Desimone et al. 2002; Gorand et al., 1998). Hence, still a little is known about the specific individual characteristics required for the development of such skills, and how educational institutions can instill and reinforce those characteristics in individual students to help them become lifelong learners. Therefore, relying on a case study, this study attempts to clarify the relationship between self-efficacy and lifelong learning tendency. In this study it was hypothesized that individuals with high self-efficacy are more likely to have higher lifelong learning tendencies.

Research Model and the Hypothesis

The research model which guided the study is shown in Figure 1. As it can be seen, the model proposes a relationship between self-efficacy and lifelong learning tendency.



Figure 1. Research model (Relationship between self-efficacy and lifelong learning tendency)

Based on the literature review provided above, the following hypothesis is proposed.

Hypotesis. There is significant and positive relationship between self-efficacy and lifelong tendencies.

Research Methodology

This part defines the data context, research design, sampling and data collection instruments in detail.

Data Context

Lifelong learning has a critical importance for national competitiveness particularly for developing countries like Turkey. Therefore, understanding the mechanisms to strengthen engagement in lifelong learning in developing economies and nations is another objective of our study. Considering the impact of technological advancements in education sector, and how the education sector has been transformed over the last five years as a result of rapid diffusion of technology in Turkey, Computer Education and Instructional Technologies (CEIT) pre-service teachers are of a great importance as they stand at the very heart of this transformation and expected to lead this change in Turkish education system. As they take the major responsibility of integration of educational technologies into learning both in and outside the school, and for both young and elderly learners, they are the groups of people who need to have more positive attitudes towards continuous learning than any other group. Furthermore, they are also the ones who need to engage in continuous learning activities both as learners and developers of learning materials required for continuous learning activities. Considering the fact that lifelong learning is practically the part of CEIT professionals' job description, it is highly critical for CEIT pre-service teachers to develop more positive attitudes towards lifelong learning and have the required set of skills and attitudes in order to engage in lifelong learning activities.

For the reasons mentioned above, this study was conducted with the students of CEIT pre-service teachers of a large foundation university in Istanbul, Turkey. The literature regarding the lifelong learning shows that there is a lack of research in the Turkish context which examines the effect of self-efficacy on lifelong learning tendencies of CEIT students. Therefore, the results

of this study could provide some useful findings both to the literature and practitioners in the field of CEIT.

Research Design

A case study is conducted to collect the required data on the underlying concepts of the research model. Quantitative research methods were used. An explanatory (hypothesis testing) type of research design was chosen as the study attempts to understand the nature of the associations between the concepts of self-efficacy and lifelong learning tendencies. Its nature is correlational, and it has been designed as a cross-sectional research study.

Sampling and data collection

Data were collected from the pre-service teachers of Computer Education and Instructional Technologies (CEIT) department of a large foundation university located in Istanbul, Turkey, in Fall, 2012. 86 students from different grades ranging from first to fourth grade participated into the study. Data for this study were collected through a survey method. The survey was administered by a classical pen and pencil method in the classroom setting during the class-hours of CEIT students with the permission of their instructors. The data collection was anonymous. There was no incentive for filling out the questionnaire. Administering the entire questionnaire took about only 10-minutes.

Data collection instruments

The survey used for the study included two different measurement instruments, and a section which was designed by the researcher to obtain demographic information of the participants.

Lifelong learning tendency scale

CEIT pre-service teachers' lifelong learning tendency was assessed by Coskun Diker and Demirel's (2010) 27-item Lifelong Learning Tendency Scale. The scale presents four-factor structure: motivation, perseverance, lack of self-regulation, and lack of curiosity. The responses to the scale items were in the form of 5-point Likert scale with anchors "very suitable = 1", "partly suitable =2", "very slightly suitable=3", "very slightly not suitable=4", "partly is not suitable=5", "not suitable=6". Example of items include: "If I believe that it will help me improve myself, I can learn anything", "It is a passion for me to learn new things", "Even if I am very busy, I can create opportunities to learn new knowledge and skills", "Having to learn new things makes me irritate" and "I believe that libraries are boring places". 15 out of 27 items in the scale are coded reverse. The total scale score ranges from 27 to 162. Higher lifelong learning tendencies are reflected by higher scores obtained from the scale. The Cronbach alpha internal

consistency coefficient of the scale is found to be as 0.89, which demonstrated the fact that the scale was highly reliable.

Self-efficacy scale

CEIT pre-service teachers' self-efficacy was measured by a 17-item scale which is originally developed and validated by Sherer and Adams (1983) and translated into Turkish by Yildirim and Ilhan (2010). Participants were asked to answer the question of 'how much do the following statements describe you?' based on a five-point Likert scale ranging from 1 'strongly not describe' to 5 'strongly describe'. The scale has a three-factor structure measuring the various aspects of self-efficacy including initiation, effort, and persistence. Sample questions include: 'When I make plans, I am certain I can make them work', 'I give up easily', 'I am a self-reliant person', and 'I avoid facing difficulties'. The total score reflects the level of self-perceived general self-efficacy. 11 out of 17 items in the scale are reverse coded. The total scale score ranges from 17 to 85. Any increase in the participant's total score indicates the increase in his or her general self-efficacy level (Sherer & Adams, 1983). This scale was preferred because it has been the most widely used self-efficacy measure so far. Although it was primarily developed for clinical and personality research, later it has also been used in organizational and educational settings (Imam, 2007). In the adaptation study of the scale into Turkish, the Cronbach's alpha internal consistency coefficient, Guttman split-half coefficient, and test-retest Pearson correlation coefficients were found to be 0.80, 0.77 and 0.69 respectively (Yildirim & Ilhan, 2010) indicating high reliabilities.

Data Analysis

The data was analyzed using IBM SPSS Statistics 19. The analysis included descriptive statistics, t-test, one-way ANOVA, and Pearson correlation. Following variables were included in the analysis: sixteen demographic variables, self-efficacy scale items, and lifelong learning tendencies items.

Results

The major aim of this study was to investigate the relationship between the self-efficacy the level of CEIT pre-service teachers and their lifelong learning tendencies. The secondary aim of this study was to investigate the level of lifelong learning tendencies of those pre-service teachers by some variables. Coskun Diker and Demirel's (2010) 27-item Lifelong Learning Tendency Scale was used to determine the level of lifelong learning tendencies of CEIT students.

The sample mean of lifelong learning tendencies for CEIT pre-service teachers was found to be 82.78 and the standard deviation was 30.51. According to Coskun Diker and Demirel (2010), the mean score which is above 94.5 indicates a high level of tendency for lifelong

learning, while the means score which is lower than 94.5 indicates a low level of tendency for lifelong learning. Therefore, the sample mean of 82.78 indicated that our sample of CEIT students had a low level of lifelong learning tendency meaning that they were less likely to engage in lifelong learning activities. Furthermore, the mean score for the item 21 (one of the negative items which was reverse coded during the data entry process) “If I am not responsible for the subject matter taught I do not put any extra effort to learn more” was found to be the highest ($m=3.62$, $sd=1.67$) among the scale items and the lowest ($m=2.53$, $sd=1.63$) for the item 4 “Even if I have enough money, I would still continue to learn further to develop new skills”.

The study also investigated how the tendencies of CEIT pre-service teachers for lifelong learning differed with respect to some variables including gender, class, whether or not the students was registered in a double-major program, the willingness to pursue an academic career, work experience, whether or not the students participated in seminars, congress or workshops related to their field, the reason of their field choice, academic achievement, the prospects of future job achievement, career planning related to their own study field, career planning related to fields other than their own, students’ descriptions of their department culture, students’ willingness for improvement, students’ level of interest in their country’s political, social and economic agenda, and students’ reading habits. A significant difference was found for the grade levels ($F(3, 82) = 3.95$, $p=0.011$), and students’ level of interest in their country’s political, social and economic agenda ($F(2, 83) = 3.19$, $p=0.046$), while no significant difference was found for other variables that were examined in the study.

Tukey HSD post-hoc analyses were conducted in order to determine the nature of differences between the grade levels, and students’ level of interest in their country’s political, social and economic agenda. The findings revealed that the mean score of junior CEIT students’ lifelong learning tendencies ($m=100.25$, $sd=23.91$) was higher than both the mean score of freshman students ($m=76.69$, $sd=30.94$), and that of senior students ($m=71.62$, $sd=27.74$). Furthermore, in terms of students’ level of interest in their country’s political, social and economic agenda, research findings indicated that the students who seemed to have higher interest in their country’s political, social, and economic agenda also appeared to have higher scores on lifelong tendency scale compared to students who showed little or no interest to social, economic, or political agenda of their countries.

The main purpose of this study was to investigate the relationship between the general self-efficacy and the lifelong learning tendencies of CEIT students. Therefore, Pearson correlation coefficient was calculated in order to understand the direction and the strength of this

relationship. Pearson $r=0.244$ ($p<0.05$) indicated a significant, positive but a weak relationship between the self-efficacy and the lifelong learning tendencies of CEIT students.

Discussion and Conclusion

Spread of information technologies, growing interconnectedness and interdependence, economic globalization, pace of technological changes have all profound effects on education. Learning is no longer confined to childhood or to the classroom, but takes place throughout life in various circumstances (Diker Coskun & Demirel, 2010). Neither are the schools only places where the acquisition of knowledge takes place nor the workplaces are the places where the knowledge acquired is applied (Fischer, 2000). In the age of information, lifelong learning stands out as key to employability, survival and supremacy.

The main aim of the study was to examine the effect of general self-efficacy of CEIT pre-service teachers on their lifelong learning tendencies. A significant, positive but a weak relationship has been found ($r=0.244$, $p<0.05$). Although, this result supports the view of Firmin and Miller (2005) who argue that lifelong learners are more likely to have positive attitude towards learning, more confidence in themselves and the better ability to bounce back stronger from any difficult situations, the weak relation might be the result of Turkish culture which may make people with a high self-efficacy more conformist in terms of learning further. Students who feel high self-efficacy may not be so fond of lifelong learning as they may think that they already know enough and even though they feel capable of doing so, they may not regard lifelong learning as an absolute necessity in their life.

The second aim of the study was to investigate the level of lifelong learning tendencies of CEIT pre-service teachers, and to investigate whether the pre-service teachers' lifelong learning tendencies differ with respect to some variables. The CEIT pre-service teachers' lifelong learning tendencies mean score was lower than expected ($m=82.78$, $sd=30.51$) which signals that students must be faced with the expectations of their prospective work life and must be encouraged to acquire required skills for lifelong learning. No significant difference was found among the variables other than grade levels and students' level of interest in their country's political, social and economic agenda. A surprising finding was found among the level of lifelong learning tendencies of CEIT pre-service teachers in terms of grade levels. Junior CEIT students had higher scores on lifelong learning tendency scale compared to both freshman and senior students. It was expected that senior students had higher levels of lifelong learning tendencies compared to the earlier levels, as they were expected to be more aware of the demands of the future work life. However, research findings indicated that senior students had lower scores on lifelong learning tendency scale

compared to junior students. This unexpected finding might be the result of some other significant variable which was not in the scope of the current study. In terms of students' level of interest in their country's political, social and economic agenda, research finding indicated that students who were interested in their country' political, social, and economic agenda scored higher on lifelong learning tendencies scale as it was expected. This might be due to the fact that students who are aware of their countries' realities are more likely to appreciate the importance of lifelong learning.

Based on the findings of this study and its subsequent conclusion, the following recommendations are made:

- 1) Undergraduate education particularly the education of CEIT pre-service teachers should be strictly student-centered and must be linked to the real-life workplace expectations;
- 2) students must be encouraged to learn more about the demands of work-life and be informed about changing work patterns and workplace expectations
- 3) students must be particularly encouraged to follow the news about their country' and world' political, economic and social agenda
- 4) a greater attention should be given on increasing students' self-efficacy and providing students with a set of attitudes and skills that will help them learn for themselves both in formal education and long after they have graduated;
- 5) recognizing that learning occurs in a wide variety of contexts both in academic and non-academic settings, students must be encouraged and empowered to learn actively regardless of the place and time.

References

- Bandura, A. (1986). *Social foundations of thoughts and action*. Englewood Cliffs, NJ: Prentice Hall.
- Bandura, A. (1995). *Self-efficacy in changing societies*. Cambridge University Press.
- Bath, D.M. & Smith, C.D. (2009). The relationship between epistemological beliefs and the propensity for lifelong learning. *Studies in Continuing Education*, 31(2), 173–89.
- Bentley, T. (1998). *Learning beyond the classroom: Education for a changing world*. London: Routledge.
- Bligh, E. (1982). *Professionalism and flexibility in learning*. Guildford: Society for Research into Higher Education.
- Cervero, R.M. (1985). Continuing professional education and behavior change: A model for research and evaluation. *Journal of Continuing Education in Nursing*, 16(3), 85-88.
- Desimone, L.M., Porter, A.C., Garet, M.S., Suk Yoon, K., & Birman, B.F. (2002). Effects of professional development on teachers' instruction: Results from a three-year longitudinal study. *Educational Evaluation and Policy Analysis*, 24(2), 81-112.

- Diker Coskun, Y. & Demirel, M. (2010). Lifelong learning tendency scale: the study of validity and reliability. *Procedia Social and Behavioral Sciences*, 5, 2343–2350
- Firmin, S. & Miller, C. (2005). *Facilitating the development of lifelong learners through e-communication tools*. Paper presented at ASCILITE Conference, Brisbane, Queensland.
- Fischer, G. (2000). Lifelong learning - More than training. *Journal of Interactive Learning Research*, 11(3), 265-294.
- Gorand, S., Rees, G., Fevre, R., & Furlong, J. (1998). Learning trajectories: Travelling towards a learning society? *International Journal of Lifelong Education*, 17(6), 400-410.
- Green, A., Preston, J., & Sabates, R. (2003). Education, equality and social cohesion: a distributional approach. *Compare: A Journal of Comparative and International Education*, 33(4), 453-470.
- Green, A., Wolf, A., & Leney, T. (1999). *Convergence and Divergence in European Education and Training Systems*. London: Institute of Education, University of London.
- Hmieleski, K. M. & Baron, R. A. (2008). When does entrepreneurial self-efficacy enhance versus reduce firm performance? *Strategic Entrepreneurship Journal*, 2(1), 57 – 72.
- Hyvonen, S. & Tuominen, M. (2006). Entrepreneurial innovations, market-driven tangibles and learning orientation: critical indicators for performance advantages in SMEs. *International Journal of Management and Decision Making*, 7(6), 643 – 660.
- Imam, S. S. (2007). *Sherer et al. general self-efficacy scale: Dimensionality, internalconsistency, and temporalstability*. Paper presented at the Proceedings of the Redesigning Pedagogy: Culture, Knowledge and Understanding Conference, Singapore.
- Kember, D., Leung, D.Y.P, & Ma, R.S.F. (2007). Characterising learning environment capable of nurturing generic capabilities in higher education. *Research in Higher Education*, 48(5), 609-631.
- Knapper, C. & Cropley, A.J. (2000). *Lifelong learning in higher education*. London: KoganPage.
- Kumar, R. & Uz Kurt, C. (2010). Investigating the effects of self efficacy on innovativeness and the moderating impact of cultural dimensions. *Journal of International Business and Cultural Studies*, 4(1), 1-15.
- Livneh, C. & Livneh, H. (1999). Continuing professional education among educators: Predictors of participation in learning activities. *Adult Education Quarterly*, 49(2), 91-106.
- London, M. & Mone, E.M. (1999). Continuous learning. In D.R. Ilgen & E.D. Pulakos (Eds.), *The changing nature of performance: Implications for staffing, motivation and development*, (pp.119-153). San Francisco: Jossey-Bass.
- Pajares, F. (2002). Gender and perceived self-efficacy in self-regulated learning. *Theory Into Practice*, 41(2), 116-125.

Garipagaoglu, B.C. (2013). The effect of self-efficacy on the lifelong learning tendencies of Computer Education and Instructional Technologies pre-service teachers: A case study. *International Journal of Human Sciences*. (10)1, 224-236.

Schwartz, P. (1996). *The Art of the Long View: Planning for the Future in an uncertain World*. Doubleday, New York.

Sen, G. (2001). *Nationalizing the International Baccalaureate Diploma Program*. IB Research Notes, 1(3), 3-9. Retrieved from <http://www.bath.ac.uk/Departments/Education/CEIC/ibru/index.html>.

Sharples, M. (2000). The design of personal mobile Technologies for lifelong learning. *Computers & Education*, 34 (3-4), 177- 193.

Sherer, M. & Adams, C.H. (1983). Construct validation of the Self-Efficacy Scale. *Psychological Reports*, 53(3), 899-902.

Smylie, M. (1988). The enhancement function of staff development: Organizational and psychological antecedents to individual teacher change. *American Educational Research Journal*, 25(1), 1-30.

Yıldırım, F. & İlhan, I.O. (2010). The validity and reliability of the General Self-Efficacy scale Turkish form. *Türk Psikiyatri Derneği*, 21(4), 301-308.