



Available online at www.sciencedirect.com

ScienceDirect



Procedia - Social and Behavioral Sciences 232 (2016) 668 - 676

International Conference on Teaching and Learning English as an Additional Language, GlobELT 2016, 14-17 April 2016, Antalya, Turkey

A Cross-sectional Study of Relationship between Attitudes toward Foreign Language Learning and Academic Motivation

Jafar POURFEIZa,*

^a School of Foreign Languages, Hacettepe University, Ankara 06800, Turkey

Abstract

The current study examined the relationship between academic motivation and attitudes toward foreign language learning. A total of 102 prospective English teachers enrolled in an English as a foreign language (EFL) learning program from a state university in Ankara/Turkey participated in the study. Data were collected using Attitudes toward Foreign Language Learning (A-FLL; Vandewaetere & Desmet, 2009) and the Academic Motivation Scale (AMS; Vallerand et al., 1992). Results revealed reciprocal correlations between attitudes toward foreign language learning and academic motivation. Specifically, behavioral and affective/evaluative components of attitudes toward foreign language learning appeared as the strongest predictors of academic motivations. In addition, while cognitive and affective/evaluative components were both positively related with the perceived intrinsic and extrinsic motivation, behavioral component was negatively associated with amotivation. From these findings, it can be concluded that attitudes and academic motivation are interrelated in learning a second or foreign language (L2). Results are discussed with the intent of highlighting the importance of attitudes toward foreign language learning and academic motivation in enhanced L2 learning experience.

© 2016 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

Peer-review under responsibility of the organizing committee of GlobELT 2016

Keywords: Attitudes; Foreign language learning; Academic motivation; Teacher education.; intrinsic motivation

1. Introduction

Over the past few decades, there has been a general consensus over the fact that motivation is an indispensible part of, though still controversial due to the robustness of its measurement (Gamboa et al., 2013), effective teaching and learning (Dörnyei, 2005; 2014; Dörnyei, MacIntyre, & Henry, 2016; Dörnyei & Ryan, 2015; Gardner, 1985,

^{*} Corresponding author. Tel.: +90-507-000-1013; fax: +90-312-299-2158. E-mail address: jpourfeiz@hacettepe.edu.tr

2001, 2010). Research into second or foreign language (L2) learning has acknowledged that attitudes and motivation are central to effective second language acquisition or learning (SLA) and that "all the other factors involved in SLA presuppose motivation to some extent" (Dörnyei, 2005, p.65). Motivation is viewed as an internal driving force that activates and directs behavior (Singh, 2013). It is also argued that students' academic behavior is influenced by a wide array of individual differences variables such as attitudes, motivation, strategy use, intelligence, and personality. Prior research has mostly focused on the impact of attitudinal/motivational variables on students' school performance and achievement without providing clear evidence regarding the viable interrelationship between different types of motivation including attitudes, motivation, and academic motivation. The current study addresses these gaps by examining the relationship between attitudes toward foreign language learning and academic motivation within self-determination theory (SDT) framework among pre-service English teachers in Turkey.

2. Literature review

Motivation is a multifaceted construct that serves as a driving force in the challenging process of learning an L2 (Dörnyei, 2005). That is, motivation consists of a combination of factors that induces individuals to achieve their goals. It is also defined as "the attribute that moves us to do or not to do something" (Broussard & Garrison, 2004, p. 106) and as "beliefs and attitudes that affect the use and development of cognitive and metacognitive skills" (Schraw et al., 2006, p. 112). Over the past few decades, the mainstream research into attitudes and motivation in the field of SLA has largely focused on Gardner's (1985) socioeducational model of SLA which posits that "students' attitudes toward the specific language group are bound to influence how successful they will be in incorporating aspects of that language" (Gardner, 1985, p. 6). According to this model, language achievement is influenced by integrative motivation or integrativeness, attitudes toward learning situation, language aptitude, and motivation or attitudes toward learning as well as a number of other factors (Öz, 2016; Öz, Demirezen, & Pourfeiz, 2015a). Indeed, the main component of the model is integrativeness which generally "subsumes integrative orientation, interest in foreign languages, and attitudes toward the L2 community" (Dörnyei, 2005, p.68).

Over the last two decades, there has been a growing interest in looking for alternative approaches to replace the prevailing socioeducational model of SLA which was severely criticized and questioned for its inapplicability in the immediate learning situation, inadequacy of integrativeness construct in accounting for identity issues (Norton, 1995, 2000) in the globalized world where the ownership of English does not stay with the native speakers of the language. Consequently, more process-oriented approaches emerged, which viewed motivation as a multifaceted construct with a dynamic nature (Dörnyei & Chan, 2013; Dörnyei & Ushioda, 2011; Dörnyei, Henry & Muir, 2016; Dörnyei & Ryan, 2015). Dörnyei (2005, 2009) introduced a more process-oriented approach which "offers a comprehensive perspective that builds on several previous constructs and is compatible with the emphasis on motivational, cognitive, and emotional conglomerates" (Dörnyei, 2014, p.520). The motivational self system consists of three dimensions, that is, the ideal L2 self, the out-to L2 self, and L2 learning experience, and posits that when a person envision himself or herself as an ideal L2 speaker or user with "a well-established and vivid ideal self", the person's self-images and future self-guides would empower him/her toward motivated L2 learning. From teacher education perspective, this become even more important since a person's self-images and the ideal L2 self aligned with his/her professional self would act as a potent motivational factor which will lead to the development of quality and competent teacher.

Academic motivation, on the other hand, is defined as the "enjoyment of school learning characterized by a mastery orientation; curiosity; persistence; task-endogeny; and the learning of challenging, difficult, and novel tasks" (Gottfried, 1990, p. 525). In this study, academic motivation was viewed within the self-determination theory (Deci & Ryan, 1985, 2002; Ryan & Deci, 2000, 2002, 2013). SDT is conceived of as "a comprehensive theoretical framework which encompasses different parameters of motivation" (Liu, 2016, p. 94) and views motivation as a tripartite construct which consists of intrinsic, extrinsic, and amotivation as the three constituents of motivational continuum. Intrinsic motivation refers to performing a learning task or a behavior for its own sake and for mere pleasure and satisfaction, while extrinsic motivation is mainly concerned with performing a behavior in order to receive some external reward (Dörnyei, 2014). Indeed, the driving force to undertake a task or perform a behavior seems to be a key factor in motivated learning within SDT framework. According to Komarraju, Karau, and Schmeck (2009, p. 47), "Intrinsically motivated individuals tend to have an internal locus of control, are driven to

accomplish, seek intellectual stimulation, and are enthusiastic about learning new things. Extrinsically motivated individuals pursue education to achieve contingent goals, rather than for an intrinsic enjoyment of learning". Amotivation, on the other hand, reflects a "state of lacking an intention to act" (Ryan & Deci, 2000, p. 61), a situation in which an individual is neither intrinsically nor extrinsically motivated.

A substantial body of research has now acknowledged the importance of attitudes, motivation and academic motivation in effective learning in L2 learning context as well as other disciplines (Cetin, 2015; Ersanli, 2015; Gamboa, 2013; Komarraju et al., 2009; Liu, 2016; Liu, Wang, & Ryan, 2016; Martinez, Perez, Navarrete, & de la Paz. 2016: Pourfeiz. 2015: Öz. Demirezen, & Pourfeiz. 2015b: Sikhwari, 2014: van den Berg & Coetzee, 2014: Yang 2013; Yashima, 2009). Martinez et al. (2016, p.136), argue that motivation and strategy use are interrelated and that "motivation leads to strategy use, and strategy use to motivation". Henning and Shulruf (2011), for instance, found a strong association between the self-regulated learning strategies and motivational beliefs and an intriguing interaction between engagement in self-regulated learning strategies and their direct impact on academic achievement. Genc, Kulusakli, and Aydin (2016) found that motivation plays an important role in learning process of Turkish undergraduate students majoring in English as a foreign language, and that the participants' English selfefficacy had a great impact on their beliefs and motivation. A recent study by Liu (2016) indicated that Chinese students were equal levels of intrinsic and extrinsic motivation. Likewise, Onder, Besoluk, Iskender, Masal, and Demirhan (2014) found that academic achievement is greatly influenced by academic motivation. Bedel (2016) reported a significant relationship between academic motivation and self-efficacy beliefs of Turkish pre-service early childhood education teachers. Öz, Demirezen, and Pourfeiz (2015b) also found a statistically positive correlation between emotional intelligence and attitudes toward foreign language learning. Pourfeiz (2015) examined the relationship between Big Five personality traits and attitudes toward foreign language learning. The findings showed statistically significant relationships between cognitive, affective/evaluative, and behavioral components of attitudes toward foreign language learning and the Big-Five personality traits.

To date, however, despite the importance of attitudes and motivation in L2 learning process, there has been no empirical research regarding the relationship between attitudes toward foreign language learning and academic motivation, especially in teacher education field. Given the importance of attitudes, motivation in transforming L2 learners into self-regulated, self-determined, and autonomous learners in learning an L2, implications of attitudinal/motivational studies for different aspects of learning an L2, and the lack of empirical research gap with regard to the impact attitudes on academic motivation of pre-service English teachers in the under-researched context of Turkey, the current study sought to examine the role of attitudes toward foreign language learning in promoting the academic motivation of pre-service English teachers. The current study, therefore, aimed at addressing this research gap and providing responses for the following research questions:

- 1. Is there any relationship between attitudes toward foreign language learning and academic motivation?
- 2. How well do metacognitive attitudes toward foreign language learning predict academic motivation preservice English teachers' academic motivation?

3. Methodology

3.1. Research design

A quantitative research design was used in the study and survey methodology employed to collect data. The study could also be considered as correlational and relational since correlations and interrelations of the variables under survey were also obtained using correlation analysis and analysis of moment structures. As quantitative research design with survey methodology was used since it is a useful measure and enables the researchers to get information in a quick and economical way within a short period of time (Creswell, 2012).

3.2. Setting and participants

A total of 102 pre-service English teachers enrolled in a pre-service English teacher education program at a major state university in Turkey. All participants voluntarily participated in the study and gave consent for data collection. The participants (N= female: 77, 76%; male: 25, 24%) were asked to complete an online survey. They ranged in age from 19 to 25 years (M = 20.28, SD = 0.95).

3.3. Measures

3.3.1. Attitudes toward foreign language learning

The participants' attitudes toward foreign language learning were measured using the attitudes toward foreign language learning (A-FLL) Scale (Vandewaetere & Desmet, 2009). The A-FLL consists of 31 items which measures the participants' attitudes toward foreign language learning and the related components, that is, cognitive component, affective/evaluative component with three sub-scales, and behavioral component with four subscales, on a 7-point (ranging from "totally disagree" to "totally agree") Likert scale. The internal consistency of overall A-FLL in the present study was α = .94

3.3.2. Academic motivation

The academic motivation scale (AMS) developed by Vallerand et al. (1992) was employed to assess the participants' academic motivation. The MAS is a 28-item scale which measures the participants' academic motivation on three subscales of *intrinsic motivation* (twelve items), three subscales of *extrinsic motivation* (twelve items), and amotivation (four items). Participants rated how well the items described them on a7-point scale ranging from 1-does not correspond at all to 7-corresponds exactly. The internal consistency of the scale was α =.93 in the current study.

3.4. Procedures for data collection and analysis

The participants enrolled in the teacher education program were asked to complete an online survey and gave consent to the study. The participants' self-reported perceptions in both variables were computed to obtain their perfect score for each component and related subcomponents. Later, the data were analyzed using IBM SPSS Statistics 23. The structural equation modelling (SEM) and analysis of moment structures (IBM AMOS 22 statistical package) were utilized to measure the relationship between variables under survey. Instead of using regular multiple regression analysis, AMOS was used to ensure the accuracy of results obtained in a single model (Kline, 2011; Tabachnick & Fidel, 2013).

4. Results and discussion

The findings revealed that there was a significant positive correlation between overall A-FLL and academic motivation. Likewise, cognitive and affective components of A-FLL significantly correlated with intrinsic and extrinsic motivation. However, no correlation was found among cognitive and affective components of A-FLL and amotivation. Behavioral component was correlated positively with intrinsic motivation and negatively with amotivation. There was no correlation between behavioral component and extrinsic motivation. As shown in Figure 1, the findings also revealed that A-FLL significantly predicted 17% of variance in the participants' overall academic motivation, suggesting that learners with positive attitudes toward learning an L2 are more likely to be academically motivated. Surprisingly, the results revealed that academic motivation also predicted 17% of variance in participants' attitudes toward foreign language learning. This, indeed, underscores the existence of reciprocal relationship between the two variables, suggesting that as the one increases, the other also tends to increase.



Figure 1. The relationship between attitudes toward foreign language learning and academic motivation

Note: A FLL= Attitudes toward Foreign Language Learning; Academic _ M= Academic Motivation

The findings , Figure 2, also revealed that A-FLL significantly predicted 25% of variance in the participants' overall intrinsic motivation, 13% in extrinsic motivation, and 8% in amotivation, being the strontest predictor of intrinsic motivation, (β = .50, p < .001) and the second strongest predictor of extrinsic motivation (β = -.36, p < .001). As seen, A-FLL is negatively correlated with amotivation dimension of the academic motivation construct, indicating that amotivation negatively influences the participants' attitudes toward foreign language. Thus, it can be concluded that amotivated students are less likely to be successful language learners.

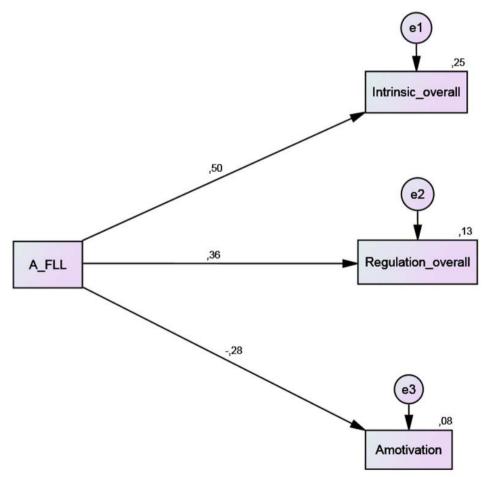


Figure 2. The relationship between attitudes toward foreign language learning and components of academic motivation

The findings revealed that that cognitive, affective/evaluative, and behavioral components of A-FLL predicted 29% of variance in overall academic motivation. As illlustrated in Figure 3, cognitive component emerged as the strongest predictor ($\beta = .38$, p<.001) follwed by affective/evaluative component as the second ($\beta = .32$, p<.001). This implies that cognitive and affective variables can work in tandem in promoting academic motivation among L2 learners. It seems plausible, thus, to conclude that attitudes toward foreign language learning have potential to predict prospective English teacher's academic motivation. From pedagogical perspective, this is compelling to argue that the interplay of positive attitudes and academic motivation can be viewed as a powerful and sound avenue toward enhanced performance in academic activities and, consequently, self-determined academically motivated teachers. As Yang (2013) puts it, highly motivated learners with positive attitudes aligned with a set of individual difference variables including verbal aptitude and intelligence will develop to proficient and competent L2 learners.

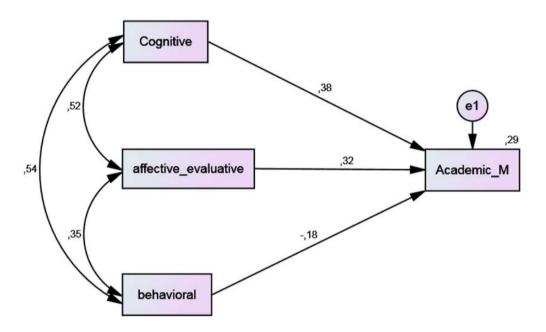


Figure 3. The relationship between components of attitudes toward foreign language learning and academic motivation

Results of analysis of moment structures, Figure 4, also indicated that cognitive, affective/evaluative, and behavioral components of A-FLL predicted 29% of variance in intrinsic motivation, 25% in extrinsic motivation, and 14% of variance in amotivation, with behavioral component as the significant predictor of amotivation (β = .39, p < .001), cognitive component as the strong predictor of intrinsic motivation (β = .35, p<.001) , and affective/evaluative component as the strongest predictor of extrinsic motivation (β = .35, p<.001). These findings indicate that attitudinal/motivational behaviors are closely linked with academic motivation and behavior. What is more, there is a strong correlation between affective/evaluative, behavioral and cognitive components of A-FLL, indicating that both affective and cognitive factors highly and positively influence academic motivation of preservice English teachers. This highlights the contention that cognitive and metacognitive abilities and affective variables such as attitudes, motivation, and emotion are central to effective L2 learning (Dörnyei, 2009; Waninge, 2014).

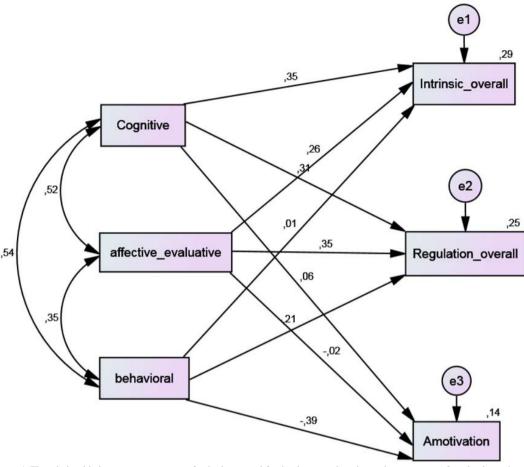


Figure 4. The relationship between components of attitudes toward foreign language learning and components of academic motivation

5. Conclusion

The findings revealed a significant relationship between attitudes toward foreign language learning and academic motivation, extending our knowledge and understanding of the interrelations of individual differences in academic contexts and the role of attitudes in promoting academic motivation of pre-service English teachers. Findings also provided further support for the prior research on the impact of attitudes and motivation on L2 learning behavior, which would lead to academically motivated learners. Practical implications are that students' positive attitudes toward learning an L2 are central to motivated L2 learning, academic motivation, and language achievement. This supports the contention that earlier conceptualizations of the motivation are still at work and should be catered for along with newly developed conceptualizations of the construct since they are all supplementary not mutually exclusive. There is, thus, a compelling reason that we should keep both of them and shouldn't throw out the baby with bath water (MacIntyre et al., 2009). From pedagogical perspective, teachers and educators are recommended to cater for their students' attitudes since they may affect, be it negatively or positively, academic motivation and achievement. Indeed, more positive attitudes toward learning a foreign language and enhanced academic motivation will end up with more effective academic achievement. Therefore, it is recommended that teacher education programs need to cater for the cultivation of attitudes and academic motivation and, according to Martinez et al., 2016, p.477), teachers should "encourage high motivation in their students, as well as being informed about the importance of students' academic self-concept as a factor".

The present study extended our understanding of attitudes toward learning an L2 and their academic motivation. A word of warning, however, seems necessary here. The current study was carried out with pre-service English teachers who, due to their professional well-being, are normally assumed to hold higher positive attitudes and have higher levels of academic motivation. Therefore, it is recommended that the findings of this study need to be generalized with caution so as to avoid biased and inaccurate outcomes in other fields and disciplines.

References

- Bedel, E.F. (2016). Exploring academic motivation, academic self-efficacy and attitudes toward teaching in pre-service early childhood education teachers. *Journal of Education and Training Studies*, 4, 142-149.
- Cetin, B. (2015). Motivation and self-regulated learning in predicting academic achievement in college. *Journal of International Education Research (JIER)*, 11(2), 95-106.
- Creswell, J. W. (2012). Educational research: Planning, conducting, and evaluating quantitative and qualitative research (4th ed.). Boston: Pearson Education.
- Deci, E. L., & Ryan, R. M. (1985). Intrinsic motivation and self-determination in human behavior. New York: Plenum.
- Deci, E. L., & Ryan, R. M. (Eds.). (2002). Handbook of self-determination. Rochester: University of Rochester Press.
- Deci, E. L., Ryan, R. M., Schultz, P. P., & Niemiec, C. P. (2015). Being aware and functioning fully: Mindfulness and interest-taking within self-determination theory. In K. W. Brown, J. D. Creswell & R. M. Ryan, *Handbook of mindfulness: Theory, research, and practice*. New York, NY: Guilford Press.
- Dörnyei, Z. (2005). The Psychology of the Language Learner: Individual Differences in Second Language Acquisition. Mahwah, NJ: Lawrence Erlbaum.
- Dörnyei, Z. (2009). The L2 motivational self system. In Z. Dörnyei & E. Ushioda (Eds.), *Motivation, language identity and the L2 self* (pp. 9-42). Bristol: Multilingual Matters.
- Dörnyei, Z. (2014). Motivation in second language learning. In M. Celce-Murcia, D. M. Brinton & M. A. Snow (Eds.), *Teaching English as a second or foreign language* (4th ed., pp. 518-531). Boston, MA: National Geographic Learning/Cengage Learning.
- Dörnyei, Z., & Chan, L. (2013). Motivation and vision: An analysis of future L2 self images, sensory styles, and imagery capacity across two target languages. *Language Learning*, 63(3), 437-462.
- Dörnyei, Z., Henry, A., & Muir, C. (2016). Motivational currents in language learning: Frameworks for focused interventions. New York: Routledge.
- Dörnyei. Z., & Ryan, S. (2015). The psychology of the language learner revisited. New York: Routledge.
- Gardner, R. C. (1985). Social psychology and second language learning: The role of attitudes and motivation. London: Edward Arnold.
- Dörnyei, Z. & Ushioda, E. (2011). Teaching and Researching Motivation. Harlow, England: Pearson Education Limited.
- Ersanli, C.Y. (2015). The relationship between students' academic self-efficacy and language learning motivation: A study of 8th graders. *Procedia-Social and Behavioral Sciences*, 199, 472-478.
- Gamboa, L.F., Rodriguez Acosta, M., Garcia-Suaza, A. (2013). Differences in motivations and academic achievement. Lecturas de Economia, 78, 9-44.
- Genc, G., Kulusakli, E., Aydin, S. (2016). Exploring EFL learners' perceived self-efficacy and beliefs on English language learning. *Australian Journal of Teacher Education*, 41, 53-68.
- Gardner, R.C. (2001) Integrative motivation and second language acquisition. In Z. Dörnyei & R. Schmidt (Eds.) *Motivation and second language acquisition* (pp. 1-20). Honolulu, HI: University of Hawaii Press.
- Gardner, R.C. (2010). Motivation and second language acquisition: The socio-educational model. Bern: Peter Lang Publishers.
- Gottfried, A. E. (1990). Academic intrinsic motivation in young elementary school children. Journal of Educational Psychology, 82(3), 525-538.
- Henning, M. A., & Shulruf, B. (2011). Academic achievement: Changes in motivational beliefs and self-regulated learning strategies over time. *Psychologia*, 54(3), 135-144.
- Kline, R. B. (2011). Principles and practice of structural equation modeling (3rd ed.). NY: The Guillford Press.
- Komarraju, M., Karaub, S. J., & Schmeck, R. R. (2009). Role of the Big Five personality traits in predicting college students' academic motivation and achievement. *Learning and Individual Differences*, 19(1), 47-52. http://dx.doi.org/10.1016/j.lindif.2008.07.001
- Liu, L. (2016). Why do Chinese college students learn ESP: An analysis of language learning motivations within SDT framework. *English Language Teaching*, 4, 92-105.
- Liu, W.C., Wang. C.K., & Ryan, R.M. (2016). Building autonomous learners: Perspectives from research and practice using self-determination theory. Singapore: Springer.
- Martínez, J.J.R., Perez, V.L.M., Navarrete, J.H., & de la Paz, S.B. (2016). Language learning strategy use by spanish EFL students: The effect of proficiency level, gender, and motivation. *Revista de Investigacion Educativa*, 34, 133-149.
- MacIntyre, P. D., MacKinnon, S. P., & Clément, R. (2009). The baby, the bathwater, and the future of language learning motivation research. In Z. Dörnyei and E. Ushioda (Eds.). *Motivation, language identity and the L2 self,* (pp. 43-65). Clevedon, UK: Multilingual Matters.
- Onder, I., Beşoluk, S., İskender, M., Masal, E., & Demirhan, E. (2014). Circadian preferences, sleep quality and sleep patterns, personality, academic motivation and academic achievement of university students. *Learning and Individual Differences*, 32, 184–192. http://dx.doi.org/10.1016/j.lindif.2014.02.003

- Öz, H. (2016). Role of the ideal L2 self in predicting willingness to communicate of EFL students. In İ. Hakkı Mirici, İ. Hakkı Erten, H. Öz, I.Vodopija-Krstanović (Eds.), Research papers on teaching English as an additional language (pp.163-182). Rijeka: Faculty of Humanities and Social Sciences, University of Rijeka.
- Öz, H., Demirezen, M., & Pourfeiz, J. (2015a). Willingness to communicate of EFL learners in Turkish context. *Learning and Individual Differences*, 37, 269-275. http:// dx. doi. org/10.1016/j.lindif.2014.12.009
- Öz, H., Demirezen, M., & Pourfeiz, J. (2015b). Emotional intelligence and attitudes towards foreign language learning: Pursuit of relevance and implications. *Procedia Social and Behavioral Sciences*, 186(0), 416-423. doi: http://dx.doi.org/10.1016/j.sbspro.2015.04.118
- Pourfeiz, Jafar. (2015). Exploring the Relationship between Global Personality Traits and Attitudes toward Foreign Language Learning. *Procedia Social and Behavioral Sciences*, 186, 467-473. doi: http://dx.doi.org/10.1016/j.sbspro. 2015.04.119
- Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. Contemporary educational psychology, 25(1), 54-67.
- Ryan, R. M., & Deci, E. L. (2002). An overview of self-determination theory. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 3-33). Rochester, NY: University of Rochester Press.
- Ryan, R. M., & Deci, E. L. (2013). Toward a social psychology of assimilation: Self-determination theory in cognitive development and education. In B. W. Sokol, F. M. E. Grouzet, U. Muller (Eds.), *Self-regulation and autonomy: Social and developmental dimensions of human conduct* (pp. 191-207). Cambridge, England: Cambridge University Press.
- Schraw, G., Crippen, K. J., & Hartley, K. (2006). Promoting self-regulation in science education: Metacognition as part of a broader perspective on learning. *Research in Science Education*, 36, 111-139.
- Sikhwari, T. D. (2014). A study of the relationship between motivation, self-concept and academic achievement of students at a University in Limpopo Province, South Africa. *International Journal of Educational Science*, 6(1), 19-25.
- Singh, K. (2011). Study of achievement motivation in relation to academic achievement of students. *International Journal of Educational Planning & Administration*, 1(2), 161-171.
- Tabachnick, B. G., & Fidell, L. S. (2013) 6th ed. Using multivariate statistics. Boston: Pearson.
- Vallerand, R. J., Pelletier, L. G., Blais, M. R., Brière, N. M., Senècal, C., & Vallières, E. F. (1992). The academic motivation scale: A measure of intrinsic, extrinsic and amotivation in education. Educational and Psychological Measurement, 52, 1003-1017. http://doi.org/bvmhp6
- Vandewaetere, M., & Desmet, P. (2009). Introducing psychometrical validation of questionnaires in CALL research: The case of measuring attitude towards CALL. *Computer Assisted Language Learning*, 22, 349–380. http://doi.org/cpfnjv
- Waninge, F. (2014). Motivation, emotion and cognition: Attractor states in the classroom. In Z. Dörnyei, P. MacIntyre, & A. Henry (eds.). Motivational dynamics in language learning (pp.195-213). Bristol: Multilingual Matters.
- Yashima, T. (2009). International posture and the ideal L2 self in the Japanese EFL Context. In Z. Dörnyei and E. Ushioda (Eds.), *Motivation*, *language identity and the L2 self* (pp.144-163). Clevedon, UK: Multilingual Matters.
- Yang, X. (2013). Attitude and motivation in L2 learning among Um master students. *International Journal of Management and sustainability*, 1(1), 13-22.