

Chapter 7

MOTIVATIONAL BELIEFS, META-COGNITIVE STRATEGIES, NEED FOR COGNITION AND ACADEMIC ACHIEVEMENT: A MIXED METHODS STUDY

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INTRODUCTION

The attempts to specify the determinants of academic achievement are an ongoing issue among researchers. Learners generally try to make sense of new learning atmospheres by applying their own judgments and preferences. The need to provide and regulate one's own learning when confronted with learning needs (Altun & Erden, 2006) and the fact that individuals' talents and skills cannot solely account for their academic achievement have paved the way for the emergence of self-regulated learning (SRL). SRL, which was initially named Information Processing, focuses on the view that self-regulation and motivation are of vital importance (Schunk, 2005) and inclusively makes emphasis on cognitive as well as motivational and affective variables (Pintrich, 2000). In this process, learners vigorously organize their cognitive and motivational behaviors, followed by self-regulatory processes (Garcia et al., 2018; Hofer & Yu, 2003).

Upon examining the various models to clarify SRL, it can ultimately be concluded that each model focuses on certain variables, and these variables can be grouped under two main dimensions: motivational beliefs and self-regulation strategies. To put it another way, SRL includes the arrangement of cognition as well as motivation and behaviors (Altun & Erden, 2006; Konrad, 2015).

Pintrich (1999), in his model, examined self-regulated learning strategies under two dimensions: cognitive strategies and resource management strategies. Cognitive strategies include cognitive processes and behaviors that students use during their learning experience in order to complete a task or perform learning. Cognitive strategies include meta-cognitive self-regulation, rehearsal, elaboration, organization, and critical thinking strategies. Resources management strategies help students adapt themselves to their environments and change their

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also expressed that learning strategies such as preparing outlines, going over their notes, memorizing target vocabulary, etc. help them increase their academic performance. Further, in the context of the need for cognition, they have stated that challenge and self-satisfaction as well as curiosity and having fun in the learning process enhance their need for cognition and naturally their academic achievement.

Recommendations

As the research was conducted on a limited number of participants, it is believed that studies in the future could apply the related data collection tools to a larger study group. Far more comprehensive research can be conducted in larger contexts and populations. Further, applying different tools that measure self-regulated learning could be helpful and beneficial. In addition, the other components of motivational beliefs (task value and test anxiety) and cognitive/meta-cognitive strategies (rehearsal and elaboration) together with time and study environment management (effort regulation, peer learning, help-seeking) could be included in future studies for a thorough analysis. This could provide a basis for a thorough evaluation and analysis of motivational beliefs, cognitive/meta-cognitive strategies, along with resource management strategies.

REFERENCES

- Altun, S., & Erden, M. (2006). Öğrenmede motive edici stratejiler ölçeğinin geçerlik ve güvenirlik çalışması. *Edu* 7, 2(1), 1-16.
- Al-Alwan, A. F., Ashraah, M. M., & Al-Nabrawi, İ. M. (2013). Undergraduate students' level of need for cognition and its relation to their meaningful cognitive engagement: A framework to understanding students' motivation. *European Journal of Social Sciences*, 38(1), 59-65.
- Bayram, N. (2016). *Yapısal eşitlik modellemesine giriş: Amos uygulamaları*. Bursa: Ezgi Kitapevi.
- Bircan, H., & Sungur, S. (2016). The role of motivation and cognitive engagement in science achievement. *Science Education International*, 27(4), 509-529.
- Boekaerts, M. (2002). Motivation to Learn. *Educational Practices Series*, 10(1), 1-27.
- Bors, D. A., Vigneau, F., & Lalonde, F. (2006). Measuring the need for cognition: Item polarity, dimensionality, and the relation with ability. *Personality and Individual Differences*, 40(4), 819-828.
- Broadbent, J., & Poon. W.L. (2015). Self-regulated learning strategies & academic achievement in online higher education learning environments: A systematic review. *Internet and Higher Education*, 27, 1-13. <https://dx.doi.org/10.1016/j.iheduc.2015.04.007> 1096-7516
- Bruinsma, J., & Crutzen, R. (2018). A longitudinal study on the stability of the need for cognition. *Personality and Individual Differences*, 127, 151-161. <https://doi.org/10.1016/j.paid.2018.02.001>
- Cacioppo J. T., & Petty R. E. (1982). The need for cognition. *Journal of Personality and*

Social Psychology, 42(1), 116-131.

- Cacioppo, J. T., Petty, R. E., Feinstein, J. A., & Jarvis, W. B. G. (1996). Dispositional differences in cognitive motivation: The life and times of individuals varying in need for cognition. *Psychological Bulletin*, 119(2), 197-253.
- Carnevale, J. J., Inbar, Y., & Lerner, J. S. (2011). Individual differences in need for cognition and decision-making competence among leaders. *Personality and Individual Differences*, 51(3), 274-278. <https://doi.org/10.1016/j.paid.2010.07.002>
- Cazan, A. M., & Indreica, S. E. (2014). Need for cognition and approaches to learning among university students. *Procedia - Social and Behavioral Sciences*, 127, 134-138. <https://doi.org/10.1016/j.sbspro.2014.03.227>
- Chamot, A. U., & O'Malley, J. M. (1996). The cognitive academic language learning approach: A model for linguistically diverse classrooms. *The Elementary School Journal*, 96(3), Special Issue: The Language Minority Student in Transition. 259-273.
- Coutinho, S. A. (2006). The relationship between the need for cognition, metacognition, and intellectual task performance. *Educational Research and Reviews*, 1(5), 162-164.
- Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. Boston: Pearson Education.
- De La Paz, S. (1999). Self-regulated strategy instruction in regular education settings: Improving outcomes for students with and without learning disabilities. *Learning Disabilities Research & Practice*, 14(2), 92-106.
- Dent, A. L., & Koenka, A. C. (2015). The relation between self-regulated learning and academic achievement across childhood and adolescence: A meta-analysis. *Educational Psychology Review*, 28(3), 425-474. <https://doi.org/10.1007/s10648-015-9320-8>
- Fahim, M., Bagherkazemi, M., & Alemi, M. (2010). The relationship between test takers' critical thinking ability and their performance on the reading section of TOEFL. *Journal of Language Teaching and Research*, 1(6), 830-837. <https://doi.org/10.4304/jltr.1.6.830>
- Fortier, A., & Burkell, J. (2014). Influence of need for cognition and need for cognitive closure on three information behavior orientations. *Proceedings of the American Society for Information Science and Technology*, 51(1), 1-8.
- Garcia, R., Falkner, K., & Vivian, R. (2018). Systematic literature review: self-regulated learning strategies using e-learning tools for computer science. *Computers & Education*, 123, 150-163.
- Ghiasvand, M. Y. (2010). Relationship between learning strategies and academic achievement; based on information processing approach. *Procedia Social and Behavioral Sciences*, 5, 1033-1036. <https://doi.org/10.1016/j.sbspro.2010.07.231>
- Glesne, C. (2012). *Nitel arařtırmaya giriř [Becoming qualitative researcher: An introduction]* (A. Ersoy and P. Yalçınođlu, Trans.). Ankara: Anı Yayıncılık.
- Goradia, T., & Bugarcic, A. (2017). Can self-regulated learning strategies improve academic achievement in online higher education learning environments? *Advances in Integrative Medicine*, 4, 36-37. <https://dx.doi.org/10.1016/j.aimed.2017.04.004> 2212-9588
- Grosser, M. M., & Nel, M. (2013). The relationship between the critical thinking skills and the academic language proficiency of prospective teachers. *South African Journal of Education*, 33(2), 1-17.
- Gülgöz S., & Sadowski C. J. (1995). Düşünme ihtiyacı ölçeğinin Türkçe uyarlaması ve öğrenci başarısı göstergeleri ile korelasyonu. *Türk Psikoloji Dergisi*, 10(35), 15-24.
- Güngör, A. Y. (2020). The relationship between academic procrastination, academic self-

- efficacy, and academic achievement among undergraduates. *Oltu Beşeri ve Sosyal Bilimler Fakültesi Dergisi*, 1(1), 57-68.
- Hayati, N. (2015). A study of English language learning beliefs, strategies, and English academic achievement of the ESP students of STIENAS Samarinda. *Dinamika Ilmu*, 15(2), 297-323.
- Hofer, B. K., & Yu, S. L. (2003). Teaching self-regulated learning through a learning to learn course. *Teaching of Psychology*, 30(1), 30-33.
- Kamali, Z., & Fahim, M. (2011). The relationship between critical thinking ability of Iranian efl learners and their resilience level facing unfamiliar vocabulary items in reading. *Journal of Language Teaching and Research*, 2(1), 104-111. <https://doi.org/10.4304/Jltr.2.1.104-111>
- Karakelle S. (2012). Üst bilişsel farkındalık, zekâ, problem çözme algısı ve düşünme ihtiyacı arasındaki bağlantılar. *Eğitim ve Bilim*, 37(164), 237-250.
- Kauffman, D. F. (2004). Self-regulated learning in web-based environments: instructional tools designed to facilitate cognitive strategy use, metacognitive processing, and motivational beliefs. *Journal of Educational Computing Research*, 30(1&2), 139-161.
- Klomegah, R. Y. (2007). Predictors of academic performance of university students: An application of the goal efficacy model. *College Student Journal*, 41(2), 407-415.
- Konrad, S. C. (2015). How and Why Should I Study?: Metacognitive Learning Strategies and Motivational Beliefs as Important Predictors of Academic Performance of Student Teachers. *The New Educational Review*, 42(4), 239-250. <https://doi.org/10.15804/tner.2015.42.4.20>
- Levin, I. P., Huneke, M. E., & Jasper, J. D. (2000). Information processing at successive stages of decision making: Need for cognition and inclusion-exclusion effects. *Organizational Behavior and Human Decision Processes*, 82(2), 171-193. <https://doi.org/10.1006/obhd.2000.2881>
- Luong, C., Strobel, A., Wollschläger, R., Greiff, A., Vainikainen, M. P., & Preckel, F. (2017). Need for cognition in children and adolescents: Behavioral correlates and relations to academic achievement and potential. *Learning and Individual Differences*, 53, 103-113. <https://doi.org/10.1016/j.lindif.2016.10.019> 1041-6080
- Lun, V. M-C. (2010). Examining the influence of culture on critical thinking in higher education. [Unpublished doctoral dissertation]. Victoria University.
- Mahmoodi, M. H., Kalantari, B., & Ghaslani, R. (2014). Self-regulated learning (SRL), motivation and language achievement of Iranian EFL learners. *Procedia-Social and Behavioral Sciences*, 98, 1062-1068. <https://doi.org/10.1016/j.sbspro.2014.03.517>
- Mahyuddin, R., Elias, H., Cheong, L. S., Muhamad, M. F., Noordin, N., & Abdullah, M. C. (2006). The relationship between students' self-efficacy and their English language achievement. *Jurnal Pendidik Dan Pendidikan*, 21, 61-71.
- Metallidou, P., & Vlachou, A. (2007). Motivational beliefs, cognitive engagement, and achievement in language and mathematics in elementary school children. *International Journal of Psychology*, 42(1), 2-15. <https://doi.org/10.1080/00207590500411179>
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. (2nd ed). Sage.
- Mills, N., Pajares, F., & Herron, C. (2007). Self-efficacy of college intermediate French students: Relation to Achievement and Motivation. *Language Learning*, 57(3), 417-442.
- Ostovar, S., & Khayyer, M. (2004). Relations of motivational beliefs and self-regulated learning outcomes for Iranian college students. *Psychological Reports*, 94, 1202-1204.

- Ozen Uyar, R., Yilmaz Genc, M. M., & Yasar, M. (2018). The relationship between resilience and constant hope in students studying sports science. *European Journal of Educational Research*, 7(3), 601-613. <https://doi.org/10.12973/eujer.7.3.601>
- Parnrod, U., & Darasawang, P. (2018). Group-work and learning strategies by EFL students with different cognitive styles: Closing gaps for implementing cooperative learning in language classroom. *Journal of Institutional Research South East Asia*, 16(1), 71-94.
- Pintrich, P. R. (2000). The role of goal orientation in self-regulated learning. In M. Boekaerts, P. R. Pintrich & M. Zeidner (Eds.), *Handbook of Self-Regulation* (pp.451-502). San Diego: Academic Press. <https://doi.org/10.1016/B978-012109890-2/50043-3>
- Pintrich, P. R. (1999). The role of motivation in promoting and sustaining self-regulated learning. *International Journal of Educational Research*, 31(6), 459-470.
- Pintrich, P. R., Smith, D. A. F., Garcia, T., & McKeachie, W. J. (1991). *A manual for the use of the motivated strategies for learning questionnaire (MSLQ)*. NCRIPAL, School of Education, University of Michigan.
- Pintrich, P. R., Smith, D. A., Garcia, T., & McKeachie, W. J. (1993). Reliability and predictive validity of the motivated strategies for learning questionnaire (MSLQ). *Educational and Psychological Measurement*, 53(3), 801-813.
- Richardson, M., Abraham, C., & Bond, R. (2012). Psychological correlates of university students' academic performance: A systematic review and meta-analysis. *Psychological Bulletin*, 138(2), 353-387. <https://doi.org/10.1037/a0026838>
- Rositer, M. J. (2003). The effects of affective strategy training in the ESL classroom. *Teaching English as a Second or Foreign Language*, 7(2), 20-40.
- Schunk, D. H. (2005). Self-regulated learning: The educational legacy of Paul R. Pintrich. *Educational Psychologist*, 40(2), 85-94.
- See, Y. H. M., Petty, R. E., & Evans, L. M. (2009). The Impact of perceived message complexity and need for cognition on information processing and attitudes. *Journal of Research in Personality*, 43(5), 880-889. <https://doi.org/10.1016/j.jrp.2009.04.006>
- Shing, L. S., & Rameli, M. R. M. (2020). The influence of self-regulation towards academic achievement in English among Malaysian upper primary students. *Universal Journal of Educational Research*, 8(5A), 1 - 11. <https://doi.org/10.13189/ujer.2020.081901>.
- Sun, Z., Xie, K., & Anderman, L. H. (2018). The role of self-regulated learning in students' success in flipped undergraduate math courses. *The Internet and Higher Education*, 36, 41-53. <https://dx.doi.org/10.1016/j.iheduc.2017.09.003>
- Şenşekerci, E., & Bilgin, A. (2008). Eleştirel düşünme ve öğretimi. *U.Ü. Fen-Edebiyat Fakültesi Sosyal Bilimler Dergisi*, 9(14), 15-43.
- Turan, S., Karadağ, E., & Bektaş, F. (2011). Üniversite yapısı içerisinde öğrenen örgüt ve örgütsel bağlılık ilişkisi üzerine bir araştırma *Kuram ve Uygulamada Eğitim Yönetimi*, 17(4), 627-638.
- Ullman, B. J., & Bentler, M. (2013). Structural equation modelling. In I. B. Weiner (Ed.) *Handbook of Psychology*. John Wiley & Sons.
- Valle, A., Cabanach, R. G., Nunez, J. C., Gonzalez-Piendra, J., Rodriguez, S., & Piñeiro, I. (2003). Cognitive, motivational, and volitional dimensions of learning: An empirical test of a hypothetical model. *Research in Higher Education*, 44(5) 557-580.
- Vij, J., & Lomash, H. (2014). Role of motivation in academic procrastination. *International Journal of Scientific & Engineering Research*, 5(8), 1065-1070.
- Wang, M.-T., Chow, A., Degol, J. L., & Eccles, J. S. (2017). Does everyone's motivational beliefs about physical science decline in secondary school?: Heterogeneity of

- adolescents' achievement motivation trajectories in physics and chemistry. *Journal of Youth and Adolescence*, 46(8), 1821–1838. <https://doi.org/10.1007/s10964-016-0620-1>
- Weinstein, C. E., Acee, T. W., & Jung, J. (2011). Self-regulation and learning strategies. *New Directions for Teaching and Learning*, 126, 45-53. <https://doi.org/10.1002/tl.443>
- Weston, R., & Gore, P. (2006). A brief guide to structural equation modeling. *The Counseling Psychologist*, 34, 719-751.
- Zhang, L., & Maruno, S. (2010). Causal relationships among academic delay of gratification, motivation, and self-regulated learning in elementary school children. *Perceptual and Motor Skills*, 111(2), 631-642. <https://doi.org/10.2466/10.11.20.PMS.111.5.631-642>
- Zimmerman, B. J. (2005). Attaining self-regulation: A social cognitive perspective. In M. Boekaerts & M. Zeidner (Eds.) *Handbook of Self-Regulation*, (pp. 13-39). San Diego: Academic Press.