



# A LITERATURE REVIEW ON SELF-EFFICACY AND STRESS AMONG UNIVERSITY STUDENTS

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**ABSTRACT:** An increasing amount of research is investigating the effects of self-efficacy in various areas. In the academic setup, predominantly, the correlation between self-efficacy and the student's performance is being measured. Stress is another influencing factor on academic performance that has been widely investigated. However, only limited research is available on the direct interdependency between stress and self-efficacy for the academic background, especially in the first semester and over time. This article provides an overview of the literature on the theoretical background to self-efficacy and stress and reviews current studies on the interdependencies of these two factors. The main findings are that there is a moderate to significant negative correlation of self-efficacy on stress and a moderate impact of stress on self-efficacy and that the stress level and self-efficacy of students are changing over time. Based on these insights, and since there is no literature available on the timely development and direct connection between self-efficacy and stress, we suggest further investigating temporal and causal coherence.

**KEY WORDS:** *Self-efficacy; Stress; First semester; University students.*

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## 1. INTRODUCTION

After finishing school, many pupils choose to study at a university to build the foundation for their careers. Not only is the chosen subject a decisive criterium of where their career path leads; the personal attitude and stress resilience also play a role in succeeding in their careers (Rigotti et al., 2020; Abele & Spurk, 2009; Spurk & Abele, 2013; Converse et al. 2012, Fischer et al. 2016). Already the students' approach in the first semester can give a first indication of their prospective academic outcomes (Pinxten et al., 2019). Numerous studies have investigated the positive relation between the personal attitude in the form of self-efficacy (e.g. Robbins et al., 2004; Jones et al., 2010; Gore, 2006) and academic outcome and the negative impact of stress on the academic outcome (e.g. Zajacova et al., 2005; Varghese et al., 2015; Pascoe et al., 2020). Additionally, several studies (Jerusalem

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& Schwarzer, 1992; Chemers, 2001; Vaezi & Fallah, 2011) suggest a significant negative correlation between self-efficacy on stress.

The objectives of this paper are threefold. First, theoretical background on self-efficacy and stress is given to provide an overview of their dimensions and introduce the commonly used theories. Second, a literature review is conducted to connect self-efficacy and stress. Pitt et al. (2018) highlighted in their study that especially the start and the end of the first semester is crucial for the timing of stress. As there is only limited scientific research in terms of the change of self-efficacy and stress during the first semester and if the stress level has a direct impact on the students' perceived self-efficacy, the focus of the literature review is on (1) longitudinal data during the first semester/study year and (2) the direct connection between self-efficacy and stress regardless the academic outcome. The third objective is to identify implications for future research.

The structure of this chapter is following the objectives above. After this introduction, the theoretical background to self-efficacy is outlined, followed by the theory to stress. Next, the connection between stress and self-efficacy is clarified, and research is presented that investigated the timely development of stress and self-efficacy. Finally, a conclusion with practical implications is given.

## 2. SELF-EFFICACY

Since the 1970's Albert Bandura's Social Cognition Theory is a fundamental framework for many researchers to understand human learning and behavior. One core element of this theory is self-efficacy. It is defined as "beliefs in one's capabilities to organize and execute the courses of action required producing given attainments" (Bandura, 1997, p. 3). In other words, what a person believes about their ability is influential on what and how they will try to do it. The higher the self-efficacy of a person, the more likely it is, they will choose more challenging tasks and engage longer in the required activities (Bandura, 1982; Ouweneel et al., 2013). Besides the efficacy beliefs, also the outcome expectancy plays a role in how engaged a person is, as the expected outcome of a particular behavior can motivate or demotivate the person (Bandura, 1997).

Self-efficacy is a multidimensional construct that can be applied to any level of specificity (Luszczynska et al., 2005). Besides the general self-efficacy, which is the belief in one's capability to cope with a variety of universal challenges that influence all areas of life (e.g. Chen et al. 2004), there exist domain- and task-specific efficacy as well. Whereas domain-specific self-efficacy is constrained to a specific area like the organizational or educational settings (e.g. Rigotti et al., 2020), task-specific self-efficacy is even limited to a more granular level and focuses on specific tasks at hand like solving mathematical questions (Lent et al., 1997). Bandura (1986, 1997) noted that the more specific self-efficacy is being measured, the better predictable becomes the outcome of behavior. Contrary to that, Schwarzer (1993) and other researchers focused on developing a more generalized self-efficacy approach, arguing that this broader angle is better suited

for multi-contextual patterns of behavior. Both points of view have their reasonability, as they follow different goals.

According to the Social Cognition Theory (Bandura, 1997), there are four main sources that influence one's self-efficacy:

- (1) enactive mastery experience (prior task-based achievement).
- (2) vicarious experience (observation of others/role models).
- (3) social/verbal persuasion (encouragement by others).
- (4) emotional and physiological states.

How much each of these sources influences individual self-efficacy beliefs can vary depending on contextual factors like ethnicity, gender, discipline of study or personality traits (Usher & Pajares, 2008; Wilson et al., 2007; Alvarez-Huerta et al., 2019).

### **3. STRESS**

One of the emotional/physiological states that is influencing - and is influenced by - self-efficacy is stress. The term stress is used loosely in everyday life and often describes various unpleasant emotional states like frustration, exhaustion, or rush. Existing literature neither has one universal definition of stress. One of the first stress researchers who brought up the term stress, Hans Selye, defined it as a “nonspecific response of the body to any demand, whether it is caused by, or results in, pleasant or unpleasant conditions” (1985, p. 8). Stress can impact individuals both beneficially as well as harmfully. Stress in limited amounts has a positive impact, as it is pushing people towards higher achievements. On the other hand, if a person is suffering under ongoing stress, adverse effects manifest either physically (e.g. headache, stomach pain), psychologically (e.g. anger, anxiety) or behaviorally (e.g. drinking alcohol, weight loss) (Behere et al. 2011; Cohen et al., 2007)

Stress is triggered by traumatic events and major life changes - such as the death of a beloved person or a sexual assault – or by minor daily hassles - like lost keys or an argument with a family member. These environmental triggers are called stressors and are either chronic or acute, depending on their duration (Zajakova et al., 2005). The feelings and thoughts a person has about these stressors and how they can handle them are called perceived stress (Varghese et al., 2015).

Besides the original response theory, Lazarus and Folkman (1984) presented another perspective on stress, stating it is a process whereby a person assesses potential stressors as challenge or threat (primary appraisal) and if latter is the case, the options to cope with this specific event (secondary appraisal). If a stressor is seen as a challenge, the perceived outcome will be a potential growth or gain. If the stressor is appraised as a threat, it might lead to harm, loss or negative consequences, which is in the first step not necessarily stressful for the person. In the secondary appraisal, the person assesses if there are options

and resources to handle the stressor effectively or not. Depending on this answer, the person perceives the situation as stressful or not.

#### **4. LINK BETWEEN STRESS AND SELF-EFFICACY AND TIMELY RELATION**

This perception, in turn, is, according to Chemers et al. (2001), the connection between self-efficacy and stress. Individuals with high self-efficacy are more likely to assess a stressor or demand as a challenge instead of a threat. Consequently, they select a more effective strategy for coping with the task or persist longer in managing it. Several studies show a moderate to strong negative correlation between self-efficacy and stress among college students (e.g. Hackett et al., 1992; Solberg & Villarreal, 1997). In non-educational settings, self-efficacy is also named as a personal coping resource factor that has a protective effect against stress (Schwarzer et al., 2005).

Hackett et al. (1992) additionally suggested that there is also a connection in the other direction, stating that stress and anxiety may lead to a depression of students' self-efficacy evaluations. Therefore, the reason is that persons use information about their current feelings and well-being to estimate their capability to perform a task. If they feel anxious, fatigued or stressed, they have fewer beliefs in their efficacy. The other way round, they expect to be more successful when not stressed (van der Bijl, 2001; Pajares, 1996).

As studying is a big transition in life, first semester students are at high risk of suffering under stressful situations. Besides the new housing away from home, family and friends, they have to adjust to college life and face the pressure of academic requirements (Zajacova et al., 2015). Goodman (1993) categorized stress perceived by students in the clusters academic, financial, time or health related, and self-imposed.

Likewise, Pitt et al. (2017) had similar conclusions about the main sources of stressors and additionally investigated the timing of these stressors. Their study suggests that the start and end of the first semester are especially risky for a high level of perceived stress. Different stressors are prevalent at different times during the semester. Edwards et al. (2010) also concluded in their study with nursing students that the stress level varies throughout the three-year program and that a single point of measuring is not sufficient to get a representative picture of stress among students.

Ouweneel et al. (2013) investigated the relationship between changes in or stability of self-efficacy and study engagement and academic outcome within one semester. They suggest that there are changes in the level of some student's self-efficacy and that these changes are related to a change of engagement.

Bernacki et al. (2015) also assessed self-efficacy at different points of time during a self-regulated learning program. They came to the result that it is changing continuously based on prior efficacy judgement accuracy and fluency.

## 5. CONCLUSION

Even though there is some literature investigating single aspects of self-efficacy and stress, no concrete research explicitly explores the impact of stress on self-efficacy in the academic setting without considering the performance outcome. Neither was there longitudinal data linking the two concepts of self-efficacy and stress. Hence, this can be seen as a potential field of research in the future.

If a direct correlation between stress and self-efficacy can be found, stress management seminars for first semester students might be a practical implication to reduce their perceived stress level, increase their academic self-efficacy and hence improve their academic outcome and, consequently, their chances to obtain better jobs. Besides the performance, good stress management skills and a high level of self-efficacy are valuable benefits in the vocational setting and increasingly crucial for talent requisition.

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## CONFLICT OF INTERESTS

No potential conflict of interest was reported by the authors.

## AUTHOR CONTRIBUTIONS

The conceptualization of this paper was discussed between all of the authors, because this research is part of Mrs. Oberst's PhD program and Mrs. Hedderich and Mrs. de-Molina-Miguel are her advisors. The investigation and writing was conducted by Mrs. Oberst. Mrs. Hedderich and Mrs. de-Molina-Miguel supervised, reviewed and validated the research.

## REFERENCES

- Abele, A. E., & Spurk, D. (2009). The longitudinal impact of self-efficacy and career goals on objective and subjective career success. *Journal of Vocational Behavior*, 74, 53–62. <https://doi.org/10.1016/j.jvb.2008.10.005>
- Alvarez-Huerta, P., Larrea, I., Muela, A., & Vitoria, J. (2019). Self-efficacy in first-year university students: a descriptive study. *Headache*.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. W H Freeman/Times Books/ Henry Holt & Co.

- Behere, S.P., Yadav, R. & Behere, P.B. (2011) A comparative study of stress among students of medicine, engineering, and nursing. *Indian Journal of Psychological Medicine*, 33(2), 145–148.
- Bernacki, M. L., Nokes-Malach, T. J., & Aleven, V. (2015). Examining self-efficacy during learning: Variability and relations to behavior, performance, and learning. *Metacognition and Learning*, 10(1), 99–117. <https://doi.org/10.1007/s11409-014-9127-x>
- Chemers, M.M., Hu, L., & Garcia, B.F. (2001). Academic self-efficacy and first year college student performance and adjustment. *Journal of Educational Psychology*, 93, 55-64.
- Chen, G., Gully, S. M., & Eden, D. (2004). General self-efficacy and self-esteem: Toward theoretical and empirical distinction between correlated self-evaluations. *Journal of Organizational Behavior*, 25, 375–395. <https://doi.org/10.1002/job.251>
- Cohen, S., Janicki-Deverts, D., & Miller, G. E. (2007). Psychological stress and disease. *JAMA*, 298(14). 1685-1687.
- Converse, P.D., Pathak, J., DePaul-Haddock, A. M., Gotlib, T., & Merbedone, M. (2012). Controlling your environment and yourself: Implications for career success. *Journal of Vocational Behavior*, 80(1), 148-159. <https://doi.org/10.1016/j.jvb.2011.07.003>
- Edwards, D., Burnard, P., Bennett, K., & Hebden, U. (2010). A longitudinal study of stress and self-esteem in student nurses. *Nurse education today*, 30(1), 78–84. <https://doi.org/10.1016/j.nedt.2009.06.008>
- Goodman, E.D. (1993). How to handle the stress of being a student. *Imprint*, 40,43.
- Gore, P. A. (2006). Academic Self-Efficacy as a Predictor of College Outcomes: Two Incremental Validity Studies. *Journal of Career Assessment*, 14(1), 92–115. <https://doi.org/10.1177/1069072705281367>
- Hackett, G., Betz, N. E., Casas, J. M., and Rocha-Singh, I. A. (1992). Gender, ethnicity, and social cognitive factors predicting the academic achievement of students in engineering. *Journal of Counseling Psychology* 39(4): 527–538.
- Jerusalem, M., & Schwarzer, R. (1992). Self-efficacy as a resource factor in stress appraisal processes. In R. Schwarzer (Ed.), *Self-efficacy: Thought control of action*, 195–213. Hemisphere Publishing Corp.
- Jones, B. D., Paretto, M. C., Hein, S. F., & Knott, T. W. (2010). An analysis of motivation constructs with first-year engineering students: relationships among expectancies, values, achievement, and career plans. *Journal of Engineering Education*, 99, 319–336. <https://doi.org/10.1002/j.2168-9830.2010.tb01066.x>
- Lazarus, R. S. & Folkman, S. (1984). *Stress, appraisal and coping*. New York, N. Y.: Springer.
- Lent, R. W., Brown, S. D., & Gore, P. A., Jr. (1997). Discriminant and predictive validity of academic self-concept, academic self-efficacy, and mathematics-specific self-efficacy. *Journal of Counseling Psychology*, 44(3), 307–315. <https://doi.org/10.1037/0022-0167.44.3.307>

- Luszczynska, A., Scholz, U. & Schwarzer, R. (2005). The General Self-Efficacy Scale: Multicultural Validation Studies. *The Journal of psychology*, 139, 439-57. <https://doi.org/10.3200/JRLP.139.5.439-457>
- Ouweneel, E., Schaufeli, W. B., & Le Blanc, P. M. (2013). Believe, and you will achieve: changes over time in self-efficacy, engagement, and performance. *Applied psychology: Health and well-being*, 5(2), 225–247. <https://doi.org/10.1111/aphw.12008>
- Pajares, F. (1996). Self-efficacy beliefs in academic settings. *Review of Educational Research* 66(4): 543–578.
- Pascoe, M. C., Hetrick, S. E. & Parker, A. G. (2020). The impact of stress on students in secondary school and higher education. *International Journal of Adolescence and Youth*, 25(1), 104–112. <https://doi.org/10.1080/02673843.2019.1596823>
- Pinxten, M., Van Soom, C., Peeters, C. et al. (2019). At-risk at the gate: prediction of study success of first-year science and engineering students in an open-admission university in Flanders—any incremental validity of study strategies?. *European Journal of Psychology and Education*, 34, 45–66. <https://doi.org/10.1007/s10212-017-0361-x>
- Pitt, A., Oprescu, F., Tapia, G., & Gray, M. (2018). An exploratory study of students' weekly stress levels and sources of stress during the semester. *Active Learning in Higher Education*, 19(1), 61–75. <https://doi.org/10.1177/1469787417731194>
- Rigotti, T., Korek, S., & Otto, K. (2020). Career-related self-efficacy, its antecedents and relationship to subjective career success in a cross-lagged panel study. *The International Journal of Human Resource Management*, 31(20), 2645–2672. <https://doi.org/10.1080/09585192.2018.1460858>
- Robbins, S. B., Lauver, K., Le, H., Davis, D., Langley, R., & Carlstrom, A. (2004). Do psychosocial and study skill factors predict college outcomes? A meta-analysis. *Psychological Bulletin*, 130, 261–288. <https://doi.org/10.1037/0033-2909.130.2.261>.
- Schwarzer, R. (1993). *Measurement of perceived self-efficacy: Psychometric scales for cross-cultural research*. Berlin: Freie Universität Berlin, Institut für Psychologie.
- Schwarzer, R., Boehmer, S., Luszczynska, A., Mohamed, N., & Knoll, N. (2005). Dispositional self-efficacy as a personal resource factor in coping after surgery. *Personality and Individual Differences*, 39, 807-818.
- Selye, H. (1985) The nature of stress. *The Best of Basal Facts*, 7, 3-11.
- Spurk, D., & Abele, A. E. (2013). Synchronous and time-lagged effects between occupational self-efficacy and objective and subjective career success: Findings from a four-wave and 9-year longitudinal study. *Journal of Vocational Behavior*, 84, 119–132. <https://doi.org/10.1016/j.jvb.2013.12.002>
- Solberg, V. S., & Villarreal, P. (1997). Examination of self-efficacy, social support, and stress as predictors of psychological and physical distress among Hispanic college students. *Hispanic Journal of Behavioral Sciences*, 19(2), 182–201. <https://doi.org/10.1177/07399863970192006>

- Usher, E. L., & Pajares, F. (2008). Sources of self-efficacy in school: Critical review of the literature and future directions. *Review of Educational Research, 78*, 751-796. <https://doi.org/10.3102/0034654308321456>
- Vaezi, S., & Fallah, N. (2011). The Relationship between Self-Efficacy and Stress among Iranian EFL Teachers. *Journal of Language Teaching and Research, 2*, 1168-1174. <https://doi.org/10.4304/jltr.2.5.1168-1174>
- van der Bijl, J. J., & Shortridge-Baggett, L. M. (2001). The Theory and Measurement of the Self-Efficacy Construct. *Scholarly inquiry for nursing practice, 15*(3), 189-207.
- Varghese, R., Norman, T.S. & Thavaraj, S. (2015). Perceived Stress and Self Efficacy Among College Students: A Global Review. *International Journal of Human Resource Management and Research, 5* (3), 15-24.
- Wilson, F., Kickul, J., & Marlino, D. (2007). Gender, Entrepreneurial Self-Efficacy, and Entrepreneurial Career Intentions: Implications for Entrepreneurship Education. *Education, 31*(3), 387-406.
- Zajacova, A., Lynch, S.M., Espenshade, T.J. (2005). Self-Efficacy, Stress, And Academic Success in College. *Research in Higher Education, 46*(6), 677-706. <https://doi.org/10.1007/s11162-004-4139-z>.