Academic Self-Efficacy as a Mediator Between Fear of Failure and Academic Stress Among High School Students During Covid-19

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The goal of this study was to investigate the role academic self-efficacy plays in the relationship between fear of failure, and academic stress among high school students during Covid-19. A convenience sampling method was used to recruit participants in this study. Participants were 320 third year secondary school students (210 female, 65.6% and 110 males, 3.4%). A cross-sectional study was performed for all secondary schools in the Directorate of Education, Kafr El Sheikh Governorate, Egypt. Results indicate that self-efficacy correlates negatively with both fear of failure and academic procrastination. On the other hand, fear of failure was found to be positively correlated with academic stress. The data set, according to Skewness and kurtosis values, is in the range of ± 1 and shows a normal distribution. Regression coefficients of the empirical model show that self-efficacy had a direct negative effect on both fear of failure and academic stress. According to these findings, self-efficacy had a partial mediating effect on the relationship between fear of failure and academic stress.

Keywords: Academic Self-Efficacy; Fear of Failure; Academic Stress; High School Students; Covid-19

Introduction
The impact of the 2019-20 coronavirus pandemic has affected educational systems around the world, leading to widespread school and university closures. On March 16, 2020, governments in 73 countries announced school closures, including 56 countries shutting schools across the country and 17 countries closing schools within a specified range. The worldwide school shutdown affected more than 421 million learners globally, while the limited school closures put 577 million learners at risk. According to data released by UNESCO on March 10, the
The closure of schools and universities due to the spread of the Covid-19 virus has left one in five students out of school globally. Efforts to stop the spread of Covid-19 through non-pharmaceutical interventions and preventive measures such as social distancing and self-isolation have prompted the closure of primary and secondary schools, as well as post-secondary schools, including colleges and universities, on a large scale in at least 61 countries (UNESCO, 2020). The Covid-19 pandemic has projected humanity into an unprecedented era characterised by feelings of helplessness and loss of control (Yang & Chen, 2021). In response to this unprecedented challenge, the Egyptian government ordered a nationwide school closure as an emergency measure to prevent the spreading of the infection among teachers and students.

In terms of education in Egypt, confusion prevailed in the situation inside the home. Do we choose health or education before the Egyptian state announced a decision to suspend studies in the middle of last March with the completion of the educational process from home being the biggest challenge to the Ministry of Education, which includes 23 million students in nearly 60,000 public, private and international schools (almasryalyoum.com, 2020).

650,000 virtual classrooms were created on the Edmodo platform in order for students and teachers to communicate remotely via the internet. The first decision of Dr. Tariq Shawky, Minister of Education and Technical Education, was to complete the school year from home and to provide alternative learning resources for students and a new mechanism for evaluation and transfer to the upper class. Amazon commended the Egyptian education system and announced that Egypt is the only country that succeeded in completing the study of its students remotely, holding electronic exams during the crisis of the spread of the new Corona virus, without any negative impact on the educational process last March. Amazon, which is the largest electronic cloud in the world, said that Egypt was the country that achieved the most remarkable movement on the cloud through the Ministry of Education. The ministry has 4 electronic platforms on the Amazon cloud, which are: the Egyptian Knowledge Bank, the electronic exam platform, the digital library, and the platform Edmodo for communication between students and teachers (Presidency, 2020).

Amazon stated in its report (March 2020) that with the opening of the Egyptian digital library "Zakir", 7.3 million students entered it in the first 4 hours, and in the period from March 15, 2020 until March 31, 2020, it achieved 48 million views. As for the report issued by the United Nations Development Program and the Mohammed bin Rashid Al Maktoum Knowledge Foundation, it emphasised Egypt's renaissance in knowledge through the Global Knowledge Index 2020, which has been issued annually since 2017, to assess the knowledge performance of 138 countries around the world through 199 sub-indicators included in 7 main sector indicators, each of which has a relative weight. The index values range from 0 to 100 where 100 means best performer and vice versa (Presidency, 2020).
According to the report, Egypt is progressing in all major sectors of the Global Knowledge Index 2020, ranking 83 in pre-university education, 80 in technical education quality, 74 in research, development and innovation, and 42 in higher education. According to the report, Egypt ranked second in the world in the high percentage of students enrolled in world-class universities, 16 in the low percentage of out-of-school children, and 16 in the high percentage of students enrolled in the vocational education program at the secondary level. The report stated that Egypt ranked 15th out of 36 countries with high human development, 23 in the technical education and vocational training index, 11 in the pre-university education index, and ranked 72 out of 138 countries in the global knowledge index 2020 (Presidency, 2020).

**Academic self-efficacy, fear of failure, and academic stress during the Covid-19 outbreak**

Self-efficacy is one of the important determinants of behaviour that expresses a set of judgments not only related to what the individual accomplishes, but also to judge what he is able to accomplish (Ahmed, Akyol, 2014; 2018; Eissa, 2012; ElAdl & Polpol, 2020; Kader & Eissa, 2015; Elkady, 2019; Kamel, 2016, Mostafa, 2018). That it is a product of personal ability, and it is measured by describing it as expectations related to a specific behaviour. The difference is based on the extent of the similarities between them in terms of the variables and the skills required (Ilgar & Mehmet, 2013) on the grounds that self-efficacy has a major role in influencing the effort and perseverance that an individual makes to achieve his goals, and the way he deals with the pressures he faces in achieving the various tasks (Al Demerdash, 2020; Arslan & Esma, 2018; Ilgar & Mehmet, 2013; Sánchez, Javier & Mariana, 2016, Zahrani, 2020).

In this regard, many researchers (Salem, 2002, El-Shinawi, 2006; Kotaman, 2013) state that academic self-efficacy pushes students towards undertaking tasks and activities that help them to face the academic pressures that may confront the academic studies and that training in practicing academic activities contributes to improving their level of academic self-efficacy. The importance of academic self-efficacy beliefs is due to the fact that they are considered as self-help for learning that affects the student’s motivation and achievement of academic tasks, and also contributes to determining the amount of effort that he exerts in order to complete this effort. These tasks also express the availability of the student's personal capabilities, which allow him to exert more effort in achieving his academic goals, in addition to that they express the student’s actual performance in confronting and overcoming the problems related to academic positions (Gündoğdu, Fevzi & Asuman, 2020; Kilic, Yavuz & Şükrü, 2013; Sağlam, & Ali, 2018; Zahrani, 2020). Results of Inkyung, Jung-hyun, Yuanyuan & Chanran's study (2015) indicated that academic self-efficacy has a partial mediating process and a direct effect on the relationship between academic stress and academic burnout.

By fear of failure we mean that a person (student here) tends to evaluate the threatening situation and accordingly feels anxious in that situation which may lead him to experience areal failure (Conroy, 2007; Małkowska-Szkutnik & Joanna, 2019). That is, the feeling of fear of failure and being convinced of failure may lead individuals to feel a certain threat
(academic failure here) and anxiety associated with a fear of failure in evaluative situations (Mohsen, 2012). This feeling arises when one faces difficult things, fear that he/she might be incompetent enough in the face of these difficulties. Fear of failure significantly affect academic procrastination (Abdi & Paixão, 2020). More than 20% of participants consider the key reason for their procrastination to be phrases such as “you’re worried about not being able to meet your expectations” or “you’re worried that you cannot get a good score” (Abdi & Paixão, 2020). When students are not able to do a certain academic task, or feel disappointed because of that, they usually consider themselves as a failed and unsuccessful person (Abdi & Paixão, 2020).

Learning and memory can be affected by stress. Although an optimal level of stress can enhance ability, too much stress can cause physical and mental health problems, reduce self-esteem and may affect the academic achievements is the students (Maajida, Vishnu & Gayathri, 2018). Academic work is always accomplished with stressful activities (Khan, 2017). Excessive stress could lead to psychological problems such as depression and anxiety. When stress is perceived negatively or becomes excessive, students experience physical and psychological impairment (Maajida et al., 2018). According to Dusselier et al. (2005), study factors are the biggest factor causing stress for students. Tests, classes, homework and examinations, as identified by students, are the main causes of stress (Young, 2017). A one student put it: “The amount of time that I have to spend working on my projects for class ... there is not enough time to spend on all of the work I need to accomplish” (Dusselier et al., 2005, p. 21). Many psychological problems, such as depression, anxiety, and stress have an impact on the students’ academic achievement (Khan, 2017).

The present study

The goal of this study was to investigate the role academic self-efficacy plays in the relationship between fear of failure, and academic stress among high school students during Covid-19. Based on the literature review, we hypothesised:

H1: Self-efficacy is negatively correlated with fear of failure.
H2: Self-efficacy is negatively correlated with academic stress.
H3: Fear of failure is positively correlated with academic stress.
H5: Self-efficacy mediates the relationship between fear of failure and physical and academic stress.

Thus, we assume the following model for this relationship and mediating role, as depicted in Figure 1.
Method
Design

For the purpose of this study, quantitative survey research was employed. The independent variable is fear of failure, academic stress life is the dependent variable and self-efficacy is the moderating variable.

Participants and procedure

A cross-sectional study was performed for all secondary schools in the Directorate of Education, Kafr El Sheikh Governorate, Egypt. The questionnaires were all built on a network platform and were then shared on social media including Messenger, WhatsApp and Facebook pages. The inform consent form and the questionnaires were sent through Google Drive™ software. Students were asked to fill them out by an access link. A convenience sampling method was used to recruit participants in this study. The inclusion criteria were as follows: third year secondary school students; both sexes; from Kafr El Sheikh Governorate. After a brief written informed consent at the beginning of the survey, three questionnaires about academic self-efficacy, academic workload, and academic stress were required. Word of mouth also helped to distribute the questionnaires, since respondents were invited to contact their colleagues to ask them to complete the questionnaires. While constructing the online questionnaire, the integrity check function of the platform was used, meaning the questionnaires could not be submitted unless all questions were answered. After extracting the data from the platform, the quality of the questionnaires was re-checked to eliminate those with missing data independently until a 100% consensus was reached. The data was collected within a period of about 2 weeks. Participants were 320 third year secondary school students (210 female, 65.6%, and 110 males, 34.4%).
Measures

Performance Failure Appraisal Inventory (PFAI) was developed by Conroy et al. (2002). The instrument was translated into Arabic language by the first author. The questionnaire includes 25 items answered in a 5-point Likert scale and distributed in 5 subscales: Fear of experiencing shame and dishonour ($\alpha = .81$), Fear of self-esteem ($\alpha = .82$), Fear of having an unknown future ($\alpha = .84$), Fear of losing important people’s interest ($\alpha = .91$), and fear of discomforting important people ($\alpha = .90$).

Academic Self-Efficacy Scale (Matovu, 2020). A modified academic self-efficacy self-administered closed ended questionnaire. The academic self-efficacy scale dimensions include: learning process, reading, comprehension, memory, curricular activities, time management, teacher student relationship, peer relationship, utilisation of resources, goal orientation, adjustment and examination. Among the 40 items, 20 statements are negative while 20 statements were positive. Content validity = 0.89. For reliability, the Cronbach’s Alpha coefficient = 0.88

Academic Stress Scale (Rustam & Tentama, 2020). A 24 items scale consisting of subscales: emotional, physiological, cognitive, and behavioural. It was used to evaluate students' academic stress. It is a four-point Likert-scale (Strongly agree, Agree, Disagree, Strongly Disagree). Based on the convergent validity test the loading factor value seen from the Aspect-Indicator meets the requirements with a value > 0.5. For reliability, the Cronbach’s Alpha coefficient = 0.766. In this study, Cronbach alpha coefficient was 0.80.

Ethical consideration

The goals of study were explained to students (participants) from whom written informed consent was obtained. Concerning the confidentiality of personal information and responses, reassurance was given to the participants.

Results

Descriptive Statistics and Correlations

Table 1 shows the means, descriptive statistics, inter-correlations, and internal consistency coefficients of self-efficacy, fear of failure, and academic stress. Self-efficacy correlates negatively with both fear of failure ($r = -.511$) and academic procrastination ($r = -.437$). On the other hand, fear of failure was found to be positively correlated with academic stress ($r = .539$). The data set, according to Skewness and kurtosis values, is in the range of ± 1 and shows a normal distribution.
Table 1 Descriptive Statistics and Correlations

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
<th>SE</th>
<th>FOF</th>
<th>AS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE</td>
<td>98.46</td>
<td>3.65</td>
<td>.84</td>
<td>.29</td>
<td>-</td>
<td>-.511**</td>
<td>-.437**</td>
</tr>
<tr>
<td>FOF</td>
<td>113.67</td>
<td>5.16</td>
<td>.63</td>
<td>-.35</td>
<td>-</td>
<td>-.539**</td>
<td></td>
</tr>
<tr>
<td>AS</td>
<td>73.18</td>
<td>4.33</td>
<td>-.72</td>
<td>.74</td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: SE = self-efficacy; FOF = fear of failure; AS = academic stress

**p < .001

Results of path analysis

To test the relationships between study variables self-efficacy, fear of failure, and academic stress), a path analysis was conducted with AMOS24. The overall structural model provided a good model fit with fit indices in an acceptable range: $\chi^2 = 322.926$; DF = 164; $\chi^2$/DF = 1.969; GFI = .93; CFI = .96; NFI = .93; and RMSEA = .05.

Regression coefficients of the empirical model (Table 2) show that self-efficacy had a direct negative effect on both fear of failure ($b = -0.37$, p<0.001) and academic stress ($b = -0.39$, p<0.001).

Table 2 Path Analysis of Variable Relations (Standardised, Non-standardised Regression Coefficients)

<table>
<thead>
<tr>
<th></th>
<th>β</th>
<th>B</th>
<th>Standard error</th>
<th>CR</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE → FOF</td>
<td>-0.37</td>
<td>-0.40</td>
<td>0.05</td>
<td>11.21**</td>
</tr>
<tr>
<td>SE → AS</td>
<td>-0.39</td>
<td>0.43</td>
<td>0.07</td>
<td>12.04**</td>
</tr>
</tbody>
</table>

Model Fit: $\chi^2 = 322.926$; DF = 164; $\chi^2$/DF = 1.969; GFI = .93; CFI = .96; NFI = .93; and RMSEA = .05.

**p<0.001.
According to these findings, self-efficacy had a partial mediating effect on the relationship between fear of failure and academic stress. Mediator variable analysis is shown in Figure 2.

![Diagram of mediator variable analysis](image)

**Figure 2** self-efficacy as a mediator between fear of failure and quality of academic stress

Note. **p < .01

**Discussion and conclusions**

The goal of this study was to investigate the role academic self-efficacy plays in the relationship between fear of failure, and academic stress among high school students during Covid-19. The higher the fear of failure, the greater the tendency to show less academic self-efficacy and more academic stress. Meanwhile, the higher the academic self-efficacy, the greater the tendency to show less fear of failure and academic stress. The secondary stage is considered one of the important stations in students' life, which is not without those pressures, events, situations and stressful daily crises. These pressures have health, school, social and psychological effects on students. The secondary stage and its variables and requirements make students face many difficulties and situations that require responses. Students may stand helpless in front of them for the lack of appropriate mechanisms, tools, skills and methods to meet these pressures with sound responses that achieve mental health for them, which requires preparing students and preparing them to face all crises and events that hinder their way in the future (Nasser, 2016).

This stage is the stage of determining the fate of female students related to university life in addition to what happens at this stage of physical and hormonal changes that lead to the occurrence of many growth problems. If the stress that students are exposed to is not successfully addressed, feelings of loneliness and nervousness may rise to the surface in addition to lack of sleep and anxiety. Excessive psychological stress has a great impact on the student’s academic achievement, especially in the educational stages in general and the secondary stage in particular (Al-Sahli, 2015).
As to descriptive statistics, inter-correlations and internal consistency coefficients of self-efficacy, fear of failure, and academic stress, self-efficacy correlates negatively with both fear of failure ($r = -.511$), and academic procrastination ($r = -.437$). On the other hand, fear of failure was found to be positively correlated with academic stress ($r = .539$). The data set, according to Skewness and kurtosis values, is in the range of ± 1 and shows a normal distribution. As found in Conroy & Elliot (2004), Martin & Marsh (2003) and Ziad & Ahmad (2015), some people feel that failure creates a self-critical condition of mind wherein their intelligence and talent are assessed negatively. It is believed by some that success is the most important criterion for their parents, teachers, or peers and that failure will result in the loss of their esteem. Another reason is the fear that failure may not only cause the loss of regard and probation of people important to them but also distress them.

Regression coefficients of the empirical model show that self-efficacy had a direct negative effect on both fear of failure ($b = -0.37, p<0.001$) and academic stress ($b = -0.39, p<0.001$). Results provide support for previous research showing that there was a negative correlation between academic pressure and academic self-efficacy, and a positive correlation between the dimensions of anxiety and academic stress (Nasser, 2016).

Fear of failure in the academic performance afflicts the student with great social, psychological and academic pressures that affect his educational path and academic achievement, and the student feels that the problems he faces exceed his capabilities, and here the student loses his sense of reassurance and safety; and because the human being is a social being by nature, he/she always strives to satisfy his/her continuous psychological needs, the most important of which is his feeling of security and safety. If this feeling is present in the individual, tension, anxiety and fear will be removed from him/her, as well as his feeling of pressure, and he sought to prove himself confident in his abilities and potentials, satisfied with his/her life and others, as was confirmed in previous research (e.g. Halim, 2017; Lebwazdeh, 2016; Youssef, 2017).

Thus, as recommended by Inkyung et al. (2015), it is important to make every endeavour to boost the academic self-efficacy of adolescent students as a personal and psychological resource.

**Application and implications**

The results of this study have corroborated with previous research and confirmed the role academic self-efficacy plays in the relationship between fear of failure and academic stress among high school students during Covid-19. In the event that the student has the experience of fear of failure in academic performance, then he suffers from great social, psychological and academic pressures that affect his educational path and academic achievement. The student feels that what he faces from problems exceeds his capabilities, and what is known as psychological pressure appears, which is known as the case in which it occurs to the individual
when there are demands that exceed his capabilities and his ability to bear and face them. Here the student loses his sense of reassurance and safety, and because a person is a social being by nature, he always strives to satisfy his/her continuous psychological needs, the most important of which is his sense of security and safety. If this feeling is present in the individual, he/she will be removed from tension, anxiety, fear, and his feeling of pressure, and he sought to prove himself confident in his abilities and capabilities, satisfied with his/her life and others.

**Limitations and future research**

This study has some limitations. First, convenient sampling method was used to recruit the participants. Therefore, the findings of the study have limited generalisability in other regions and age groups. Second, as a cross-sectional study, there has to be caution in making any generalisation of the results. Future researchers should get more respondents from a wider geographical location.

**Disclosure**

The authors report no conflicts of interest in this work.
REFERENCES


Halim ,M. (2017).emotional reassurance among university students and its relationship to social harmony and academic pressures they have. Journal of Educational and Psychological Studies, Faculty of Education in Zagazig, (95), 261-316. https://doi.org/ 10.1371/journal.pone.0246676


Lebwazdeh, A. (2016).Psychological stress and its relationship to psychological reassurance among university students: a field study on a sample of students from the University of Algiers 1, 2, 3, Ansna Journal for Research and Studies, 15,123-160


