Academic Resilience and its Relation to Academic Achievement for Moroccan University Students During the Covid19 Pandemic

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Abstract

The present study investigates the relationship between academic resilience and academic achievement for Moroccan university students during the Covid19 pandemic. Additionally, it explores potential interactions of gender and level of studies with academic resilience in the same sample. Academic resilience was measured via the ARS-30 in a sample of 138 graduate and undergraduate students, while academic achievement was measured using the participants' GPA in the year of the pandemic. The results indicate that, for the whole sample, students demonstrate resilient behavior. However, high achievers showed more academic resilience than low achievers. There was no significant relationship between gender, level of studies, and academic resilience for the sample studied.

Keywords: academic resilience, academic achievement, GPA, Covid19

1. Introduction

During the Covid19 pandemic, students and academic staff around the world faced the tremendous challenge of pursuing studies online. This came with a number of hurdles for both students and professors. Professors had to redesign their courses, rethink their teaching methods, and innovate their assessment techniques. Students on the other hand had to design a new learning environment, deal with academic and technical challenges, and be more autonomous in order to cope with the new demands of academia. These new adversities tapped on the students' mental toughness and coping strategies to make the necessary adjustments in order to perform under the new less than ideal conditions. Given the above-mentioned academic and non-academic adversities, students' academic resilience is the key in developing coping strategies that will help them achieve academic success during the extreme conditions of the covid19 pandemic.

Resilience is a psychological construct that refers to the individual's ability to successfully function despite significant life adversities (Werner & Smith, 1982; Rutter, 1987). In other words, it refers to the ability to bounce back and recover from stress, to adapt to stressful circumstances, and to function above the norm despite stress and adversity (Tussaie & Dyer, 2004). Resilience has also been defined as "any behavioral, attributional, or emotional response to an academic or social challenge that is positive and beneficial for development (such as seeking new strategies, putting forth greater effort, or solving conflicts peacefully)" (Yeager & Dweck, 2012, p. 303).

In the resilience literature, resilient behavior refers to any behavioral, attributional, or emotional response to an academic or social challenge that is positive and beneficial for development (e.g. seeking new strategies or putting forth greater effort). Non-resilient behavior on the other hand refers to any response to a challenge that is negative or not beneficial for development (e.g. helplessness, giving up, or cheating) (Yeager & Dweck, 2012).

The present study sets out to investigate Moroccan university students' resilience and its potential relationship with academic achievement during the Covid19 pandemic. In the same vain, it examines potential connections between resilience, gender, and level of studies.

The following introduction briefly examines different facets of the resilience construct, how it has been measured in the literature, and how it has been empirically investigated in relationship with academic achievement.

1.1 Resilience: Definitions and Relation with Academic Achievement

There seems to be a consensus among researchers in the field of educational psychology that intellectual ability is directly connected with academic achievement (Poropat, 2009; Duckworth, Peterson, Matthews, & Kelly, 2007). However, there is more and more evidence that the relationship between intellectual ability and academic achievement could be mediated by personality variables such as resilience, perseverance, grit, or academic buoyancy, particularly in stressful, high adversity circumstances. These aforementioned traits are used interchangeably in the literature to refer to 'the students' ability to successfully deal with academic setbacks and challenges that are typical of the ordinary course of school life' (Martin & Marsh, 2008). As Duckworth and colleagues (2007, p. 1087) put it: 'it refers to perseverance and passion for long-term goals… it entails working strenuously toward challenges, maintaining effort and interest over years despite failure, adversity, and plateaus in progress'.

According to Masten (2001, p. 228), resilience can be defined as "good outcomes in spite of serious threats to adaptation or development". This links to another definition by Schoon (2006) who defined resilience as a dynamic process in which students demonstrate adaptive behavior/actions when experiencing environmental conditions that interfere with or threaten the accomplishment of tasks.

From the above definitions, one can deduce that resilient behavior refers to any behavior whereby the individual perseveres through adversity and makes academic, emotional, and cognitive adjustments to accomplish a certain task. This same behavior could be the reason some students give up in the face of setbacks, poor performance, and stress, while others persevere, recover, and adapt. Academic resilience could be the a main factor for students who bounce back and recover in the face of academic adversity as opposed to those who give up and get caught in a downward spiral of underachievement.

Empirical evidence for the connection between academic resilience and academic achievement is mixed. On the one hand, some studies show a direct positive relation between resilience and psychological constructs such as self-efficacy, goals orientation, personal responsibility, optimism, internal expectations, and coping ability (e.g. McMillan & Reed, 1994). There is also evidence for a direct relationship between low resilience, high distress and school attrition (Close, 2001), and a strong relationship between resilience and GPA for students from the same socio-economic background. On the other hand, there also seems to be evidence for the lack of connection between academic resilience and academic achievement. For example, Sarwar, Inamullah, Khan, and Anwar (2010) found a negative correlation between resilience and academic achievement for high achievers, no correlation between resilience and academic achievement for low achievers, and a significant correlation between resilience and academic achievement in medium achievers.

Finally, while there is some evidence for the connection between academic resilience and academic achievement for students with disabilities, immigrants, ethnic minorities, and students who come from underprivileged socioeconomic contexts, little has been done to uncover the potential links between academic resilience and academic achievement during covid19-induced adversity. This domain-specific take on resilience stems from evidence in the literature (e.g. Novotny, 2011) that resilience is a dynamic trait that has a direct connection with currently present risk. Additionally, as Novotny (ibid) points out that one can only evaluate an individual's resilience under specific circumstances and settings, and that resilience is more of a current state that a static attribute.

The mixed and scattered results detailed here-above call for more research to explore academic resilience and the extent to which it relates to academic achievement during covid19-induced adversity. Hence the relevance of the present study, which investigates potential interactions between academic resilience, gender, level of studies, and academic achievement.

The following section will detail the research questions, objectives, sample, and data collection procedure.

1.2 The Current Study

The present study investigates the relationship between academic resilience and academic achievement during the covid19 pandemic. In other words, it looks at the connection between resilience (and its underlying factors i.e. perseverance, reflecting and adaptive help seeking, and emotional response) and academic achievement using a self-report measure of academic resilience and students GPA during the Covid-19 pandemic. Furthermore, it examines sex differences in resilience among graduate and undergraduate students.

1)   Do Moroccan students demonstrate resilient behavior in response to the educational challenges during the Covid19 pandemic?

2)   Is there a difference in resilience between graduate and undergraduate students?

3)   Do male and female students have different resilience attributes?

4)   Is there a relationship between academic resilience and academic achievement for Moroccan students during the Covid19 pandemic?

2. Method

2.1 Participants

138 students from the Faculty of Education, Rabat were the participants in this research. The group consisted of 78 females and 60 males with an age range between 18 and 25 years, inclusive. Of the 138 students, 30 are graduate students and 108 are undergraduates.

2.2 Instruments

Resilience was measured using the Academic Resilience Scale (ARS-30) by Cassidy (2016), which is a 30 item inventory that examines different facets of academic resilience in the face of academic challenges. The ARS-30 looks at academic resilience through its cognitive-affective and behavioral manifestations in students while encaging with academic adversity of different natures. The ARS-30 has good psychometric properties with an overall Cronbach alpha score of 0.90 and a 0.78, and 0.83 for factor level reliability respectively. Finally, the Academic resilience Scale measures three facets of academic resilience, namely perseverance (high and low), reflecting and adaptive help seeking, and negative affect and emotional response.

Academic performance was measured using students cumulative GPA for the year, which consists of an average score out of 20 for eight modules per year. Cumulative GPA is a reliable measure of the students' academic performance since it reflects the students' ability in 8 modules where they have been evaluated at least twice.

2.3 Scoring and Data Interpretation

As it has been mentioned above, the ARS measures four facets of resilience and has items that tap both high resilience and low resilience. In other words, the perseverance factor in the inventory includes items such as: 'I would work harder', and 'I would not change my long term goals and ambitions' that denote high perseverance, while it also includes items such as: 'I would just give up' and 'I would change my career plans' which denote low perseverance. Naturally, a resilient person is one who has a high score in the two first items but a low score in the two last. This also means that if the score are consistent, and the responses are reliable, then there should be a significant negative correlation between the respondents' scores for the high perseverance items and the low perseverance items.

Additionally, the ARS also measures reflecting and adaptive help seeking, which is a sign of resilient behavior (e.g. 'I would seek help from my tutors' and 'I would start to monitor and evaluate my achievements and effort'), and negative affect and emotional response, which is a sign of low resilience or lack of resilience (e.g. 'I would begin to think my chances of success at university were poor' and 'I would probably get depressed'). This means that a resilient person, according to the ARS, is one who has a high score in the 'reflecting and adaptive help seeking' factor, while also having a low score in the 'negative affect and emotional response factor.

To sum up the present section, the ARS will generate four scores: a score for high perseverant behavior, a score, for low perseverant behavior, a score for reflecting and adaptive help seeking (a sign of resilient behavior), and a score for negative affect and emotional response.

2.4 Design and Data Collection

The study, which is exploratory in nature, uses an ex-post facto research design that looks at the relationship between variables after occurrence. Through correlation, the study will examine the possible connections between academic resilience and academic achievement for graduate and undergraduate university students from the faculty of Education and faculty of letters and human sciences in Rabat. Additionally, it compares resilience scores for males and females to uncover likely gender differences in resilience and achievement during the pandemic.

The data was collected during the pandemic using the ARS-30 and permission was secured from students to access their GPA scores from the administration. Students signed consent forms that also informed them that their personal data will remain confidential and their inventories will be de-identified and stored in a secure computer. A section was added to the ARS-30 that informed the students about the context of the study and the fact that they need to fill out the questionnaire about their reaction the challenges and adversities they are facing during the pandemic and the adjustments they had to make in order to keep up with the new mode of education. The ARS-30 was administered online since studies were all online during the pandemic. Demographic data was also collected online through Microsoft Forms, and it consisted of the students' gender, age, and year of study.

3. Results

3.1 Resilience Attributes

Table 1 shows the mean score of students' academic resilience scale and its four factors, namely, high perseverance, low perseverance, reflecting and adaptive help seeking, and negative affect and emotional response. These results are reported to answer the question relating the overall academic resilience attributes of the whole sample.

Table 1. Means and standard deviations for ARS-30 factor scores for all participants

Academic Resilience Factor	Mean	Standard deviation
High perseverance	4.26	.36
Low perseverance	2.09	.62
Reflecting and adaptive help seeking	3.85	.48
Negative affect and emotional response	2.87	.77

The results above show overall higher mean scores for the high resilience factors (high perseverance, and reflecting and adaptive help seeking) than the low resilience ones (low perseverance, and negative affect and emotional response) for the whole sample. This means that on the whole, Moroccan university students whether high or low achievers, exhibit traits of resilient behavior while working in less-than-ideal conditions.

3.2 Level of Education and Resilience

The second goal of the present research was to look at differences in resilience attributes among graduate and undergraduate students in the present study. The results of the independent sample t test were as follows:

For the high perseverance factor, there was no significant difference between graduate students (M=4.22, SD=.37) and undergraduate students (M=4.28, SD=.37), t(136)= -.80, p=.42.

For the low perseverance factor, there was no significant difference between graduate students (M=2.06, SD=.50) and undergraduate students (M=2.10, SD=.67), t(136)= -.38, p= .70.

Concerning the third academic resilience factor, namely reflecting and adaptive help seeking, graduate students (M=3.77, SD=.47) did not significantly differ from undergraduate students (M=3.89, SD=.48), t(136)=-1.39, p=.16.

Finally, regarding the last factor, namely, negative affect and emotional response, there was no significant difference between graduate students (M=2.80, SD=.85) and undergraduate students (M=2.91, SD=.72), t(136)= -80, p=.42

3.3 Gender Differences in Resilience

The third research question of the present study looked at gender differences in resilience as measured by ARS-30.

The results showed no significant statistical differences between males and females across all four factors of resilience:

- High perseverance: males (M=4.26, SD=.36) and females (M=4.26, SD=.37), t(136)= -.08, p=.93
- Low perseverance: males (M=2.17, SD=.59) and females (M=2.02, SD=.64), t(136)= 1.32, p=1.18
- Reflecting and adaptive help seeking: males (M=3.85, SD=.45) and females (M=3.85, SD=.51), t(136)=.03, p=.97
- Negative affect and emotional response: Males (M=2.81, SD=.79) and females (M=2.93, SD=.74), t(136)=-.91, p=.36

3.4 Resilience and Academic Achievement

This section lists correlation results between resilience factors as measured by ARS-30 and academic achievement measured by GPA.

Table 2. Correlations between resilience factors and GPA

Resilience Factor	GPA
High Perseverance	.92**
Low Perseverance	-.55**
Reflecting and Adaptive help seeking	.49**
Negative Affect and Emotional Response	-.21*

The table above shows a strong significant correlation between the high perseverance factor and academic achievement r=.92, p<.05, and a positive correlation between the reflecting and adaptive help seeking factor and academic achievement r=.49, p<.05. Additionally, it shows a significant negative correlation between the low perseverance factor and academic achievement r=-.55, p<.05, and a marginally significant negative correlation between the negative affect and emotional response factor and academic achievement r=-.21, p<.05.

4. Discussion

The main goal of the present research was to explore possible links between academic resilience and academic achievement for Moroccan university students. More specifically, the research set out to identify the academic resilience attributes of Moroccan university students during the COVID pandemic, to investigate possible mediators of resilient behavior such as level of studies and gender, and finally to see how resilience factors such as perseverance, reflecting and adaptive help seeking, and negative emotional response relate to academic achievement.

The results seem to indicate that, for the sample studied, Moroccan university students all demonstrate some kind of resilient behavior in the face of adversity. The overall score for the high resilience factors is 4.26 out of 5 and 3.85 out of 5 for high perseverance and reflecting and adaptive help seeking respectively. Concerning the low resilience factors, they had a below average score overall in the low perseverance factor, but surprisingly had a slightly above average score in the negative affect and emotional response factor. This could be because emotional factors are generally harder to monitor and control than cognitive or behavioral ones, and that the self-regulatory mechanisms governing affect/emotions are more prone to destabilization in stressful circumstances and times of adversity. The difference between resilient and less resilient individuals though is that resilient individuals persist and show grit to overcome negative emotion while less resilient individuals tend to give up and shrink from challenges; which eventually affects academic achievement and overall success.

Another finding of the present research is that the level of studies does not affect the resilience of the students for the sample studied. There was no statistically significant difference between graduate students and undergraduate students for the four factors of resilience measured by the ARS-30. This tells us that, as a psychological trait, resilience does not relate to the number of years one spends in academia nor to his/her age, which is indirectly related to level of studies. It is worth mentioning that the number of years spends at university and age were not controlled for. In other words, there could be undergraduate students in Semester 3 who have spent more years at university than graduate students in Semester 1. Similarly, because the difference between third year B.A and first year M.A is very marginal, the difference in age between graduate students and undergraduate students was not hypothesized to affect their academic resilience.

The third finding of the present research relates to gender differences in academic resilience. Like to the finding above, there was no significant difference between males and females in any of the resilience factors measured by the ARS-30. These are not conclusive results in the sense that the sample size is not large enough to allow for a reliable gender comparison of the resilience attributes of the students, especially that this finding seems to contradict some of the findings in the literature where female students have been found to be more resilient than their male counterparts (e.g., Uzma, 2009; Behera et al., 2020).

The last and major finding of the present research relates to the relationship between resilience and academic achievement. The findings seem to indicate that there is a connection between academic resilience and academic achievement for Moroccan university students during the COVID pandemic. This is clearly demonstrated in the strong positive correlation between high resilience factors namely high perseverance and reflecting and adaptive help seeking on the one hand, and academic achievement on the other. These results seem to connect with findings by Hwang and Shin (2018), who found that academic resilience not only predicts academic achievement for university students, but also that high academic resilience was connected with good interpersonal skills, and social-affective capability in students. The results of the present study also indicate a significant negative correlation between the low resilience factors, namely low perseverance, and negative emotional response, and

academic achievement. A closer look at the results shows that the resilience factor that correlates the most with academic achievement is high perseverance. Additionally, the low resilience factor with the strongest negative correlation with academic achievement is low perseverance. This corroborates findings by Abolmaali and Mahmudi (2013), and who found that academic resilience is a predictor of academic achievement and that students who score high in measures of academic resilience are more likely to outperform other students in different academic outcome measures. Wagnlid and Collins (2009) seem to also have found similar results in a study where they looked the relationship between resilience and factors of academic success in an international sample.

It is worth mentioning that the design and the sample size of the present research do not allow for an assumption of causality or direct connection between academic resilience and academic achievement, but provide preliminary evidence that could be the foundation of a true experiment to measure impact and causality.

Given, the above findings, one can conclude that academic resilience and the ability to bounce back and show grit in the face of challenges is a human characteristic that is worth exploring and investigating experimentally for more conclusive results. In a highly competitive world, and a particularly demanding and stressful academic life, building resilience, grit, and effective coping strategies in the face of adversity not only gives students better chances at academic success, but also protects their mental health and makes them less vulnerable to mental breakdowns, fear of failure, and eventually, attrition. In an era where more and more importance is given to students' mental health and overall well-being, equipping students with the right tools for success, not only academically, but also professionally has become a vital necessity.

Future research building on the present findings should explore the malleability of academic resilience and the extent to which it can be taught or improved in students, with the subsequent goal of mediating academic achievement and overall mental well-being.

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