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Introduction

The Significance of Academic Achievement in Mathematics and its Nexus with Achievement Motivation in Sophomore Students of Literature and Philosophy

The global educational landscape has seen participation from forty-one countries, including Canada and the 30 member states of the Organization for Economic Cooperation and Development, in the International Student Assessment Program of 2003. This program placed considerable emphasis on mathematics, as well as reading and problem-solving skills, thereby enhancing cognitive capabilities. A noteworthy aspect of this initiative is the participation of fifteen Arab countries, Qatar among them, underscoring the noteworthiness of mathematics not only within academic and cognitive contexts but also across various spheres of life (The PIZA Program, 2015). By analytically engaging with the study of mathematics, we garner a knowledge that reverberates throughout our existence, aiding us in resolving our day-to-day quandaries.

1. Problem Statement and Theoretical Framework

1.1. Problem Statement

In the contemporary era, education is the principal impetus propelling society across its social, economic, and cultural dimensions. This is particularly accentuated by the surge in knowledge and technological advancements. Education now functions as the foremost bulwark against globalization, intellectual incursion, and cultural hegemony. Moreover, it

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stands as the sole conduit to aligning with progress and bridging the gap between developed and developing nations. The measure of a nation's advancement is intrinsically linked to the achievements of its students. Thus, academic achievement holds the attention of educational policymakers, educators, parents, and students alike. It is vital to recognize that academic achievement embodies more than mere knowledge accumulation and exam performance for certification. It symbolizes the acquisition of life skills and the holistic development of an individual's faculties across diverse domains, including their character formation. Mahmoud Youssef Al-Sheikh delineated strategies to address low academic performance, encompassing educational support, cooperative learning, educational guidance, morale elevation, and motivation enhancement (Sheikh, 2007: 79).

This study seeks to delve into three institutional facets and one that pertains to the student, as elucidated by Dr. Mahmoud Yusef Al-Sheikh. This framework has been underscored in various studies, including Jehan Abu Rashid Al-Omran's 1994 study on achievement motivation and its interplay with academic accomplishment and demographic variables among students in Bahrain's primary stages. This investigation examined the correlation between intelligence, achievement motivation, and academic attainment among a cohort of 377 students from Bahrain's elementary and preparatory levels (Al Salkhi, 2013: 48).

1.2. Theoretical Framework

1.2.1. Academic Attainment: Conceptualizations and Dimensions

The concept of academic achievement encompasses the assimilation of information, skills, cognitive frameworks, alterations in attitudes and values, and the reformulation of consensus-building strategies. This encompasses both desirable and undesirable outcomes, as elucidated by Fouad Abu Hatab in 1973 (Jilali, 2016: 23). Al-Dabbagh's perspective in 1981 encapsulates educational attainment as the cumulative score a student garners within a learning phase. This score reflects the specific outcomes of information mastery, both in terms of quantity and quality. This evaluation transpires through various mechanisms, including standardized achievement tests and continual teacher assessments (Nasrallah, 2004: 401). Al-Enezi in 1993 defines academic achievement as an individual's level of accomplishment across academic subjects. This metric is quantified by the summation of the individual's grades across all subjects (Nasrallah, 2004: 401). Muhammad al-Desouki and Khaled Musleh's definition emphasizes the capacity to employ

learned knowledge effectively. This signifies that academic achievement entails the adept application and articulation of learned concepts, both cognitive and skill-based (Salkhi, 2013: 25).

1.2.2. Mathematics Achievement: Exploring its Significance and Dynamics

Mathematics, according to Morris Klein in 1974, serves as a medium for comprehending and controlling one's immediate environment. Meanwhile, John Dewey contends that mathematics constitutes a language of logic, with symbols, relationships, and numerical constructs expediting focus and rational thought processes (Clapp & al, 2020: 20). Thus, mathematics achievement transcends exam scores, encapsulating the ability to comprehend and manipulate the surrounding world and its enigmas. Proficiency in mathematics plays a pivotal role in comprehending subjects such as science and social studies.

1.2.3. Achievement Motivation: Varieties of Definitions and Constructs

Achievement motivation, conceptualized as the impetus for success, finds its origins in the pioneering work of Murray in 1938. His formulation posits achievement as the inclination or readiness to accomplish an action both swiftly and effectively. This motivation is fueled by a diverse array of sources that span from rudimentary tasks to intricate endeavors (Rabie, 2008: 148). Ahmed Abdel-Khaleq's definition postulates that achievement motivation compels individuals to compete in situations requiring excellence and distinction (Abu Halima, 2018: 71).

2. Methodology

In this study, we followed and respected the following methodological points:

- Methodological Approach: The study adopts a descriptive approach to analyze relationships and disparities.
- Study Sample: The sample consists of 32 students selected from a single department to ensure comparable conditions and a shared mathematics instructor. Students of both genders who did not repeat a year were chosen.
- Characteristics of the Sample: An equitable gender distribution was maintained, aimed at discerning gender-based disparities as

proposed by the second and third hypotheses. Additionally, students were matched in terms of age level.

In conclusion, this study embarks on an exploration of academic attainment in mathematics and its interplay with achievement motivation among second-year students of literature and philosophy. By unraveling these dynamics, the study intends to contribute to the understanding of student achievement and motivation within the academic realm.

3. Study Results

3.1 Results Presentation

Table 1: Correlation Coefficient Results between Academic Achievement in Mathematics and Achievement Motivation

Significance (SIG)	R	SD	Mean	Variable
0.04	0.49	3.08	99.98	Mathematics
		10.42	96.22	Motivation for Achievement

The above table exhibits a Pearson correlation coefficient of 0.49 between achievement motivation and academic achievement in mathematics. The corresponding probability value is 0.04, demonstrating a statistically significant direct relationship between the two variables at the 0.05 significance level. This outcome corroborates the study's first hypothesis, affirming a meaningful correlation between achievement motivation and academic accomplishment in mathematics. Evidently, an increase in achievement motivation corresponds to higher levels of mathematics achievement, and vice versa.

Table 2: Disparities in Achievement Motivation Levels between Genders

Significance	(SIG)	T	SD	Mean	f	Variable
NO Statistical function	0.10	0.97-	8.84	94.43	16	Female
			11.82	98.00	16	Male

The results depicted in Table 2 signify that gender does not account for disparities in achievement motivation levels. The T value of 0.10 yields a non-statistically significant result at a probability value of 0.10, exceeding the 0.05 alpha threshold. Consequently, no gender-based differences in motivation for achievement are evident.

Table 3: Disparities in Mathematics Achievement Levels between Genders

Significance	(SIG)	T	SD	Mean	f	Variable
NO Statistical function	0.5	0.62-	2.74	10.38	16	Female
			2.912	13.46	16	Male

Table 3 presents results indicating that gender does not contribute to differences in mathematics achievement levels. With a T value of 0.62 and a probability value of 0.5, no statistically significant gender-based disparities in academic achievement in mathematics are discernible.

3.2. Results and Discussion

The findings in Table 1 affirm the first hypothesis postulating a correlation between academic achievement in mathematics and achievement motivation. This assertion is bolstered by Ryan, Deci, and Connell's study in 1985, which posits a positive connection between motivation and academic performance. Notably, self-directed learning with intrinsic motivation yields favorable learning outcomes (Sandra, Year). The second hypothesis, however, is not validated. Gender does not influence achievement motivation, in concurrence with Sardaoui's 2011 study that unveiled no gender-based differences in achievement motivation among baccalaureate students.

Similarly, the third hypothesis is unverified. Gender does not engender discrepancies in academic achievement in mathematics. The analyses substantiate that differences in mathematics achievement are attributable to levels of achievement motivation rather than gender.

Conclusion

In the contemporary educational milieu, the significance of students' academic achievement is paramount, warranting attention from educators, parents, researchers, and the students themselves. Academic accomplishment acts as a stepping stone towards realizing aspirations for academic excellence and global positioning. Notably, countries that prioritize education invariably attain development benchmarks, underscoring the significance of educational planning and policy. It is evident that mathematics achievement serves as a testament to mastery and control over the subject, indicative of prowess across various disciplines.

The research at hand delves into rectifying suboptimal academic performance, particularly in mathematics, by investigating the influence

of an independent variable, namely achievement motivation. The study conclusively verifies the first hypothesis, establishing a positive relationship between academic achievement in mathematics and achievement motivation among second-year students of literature and philosophy.

Conversely, the second and third hypotheses are invalidated. Gender does not substantively affect motivation for achievement or academic achievement in mathematics. Ultimately, these findings contribute to the body of knowledge regarding the intricate interplay between academic achievement and achievement motivation.

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Abstract

The primary objective of this study is to investigate the degree of correlation existing between academic attainment in mathematics and the motivation to achieve. Additionally, the research endeavors to analyze the significance of gender-based disparities in the levels of achievement motivation and academic accomplishment within a sample comprising 32 participants, including 16 females and 16 males. This sample was deliberately selected during the first semester of the

academic year 2019/2020 at Colonel Amirouche Astawali High School. Employing a descriptive methodology, the researcher sought to scrutinize the interrelation between academic success in mathematics and the impetus to achieve, as well as to probe into the variations manifesting between male and female students with regard to these two variables. The findings of the investigation affirm the validity of the initial hypothesis, positing a discernible connection between academic proficiency in mathematics and the motivation to achieve. Conversely, the second and third hypotheses, which proposed differences in achievement motivation attributed to gender and in academic accomplishment in mathematics between males and females, were not substantiated by the study's outcomes.

Keywords

achievement motivation, academic achievement, mathematics

مستخلص

الهدف الرئيسي من هذه الدراسة هو الكشف عن مدى الارتباط بين التحصيل الأكاديمي في مادة الرياضيات ودافعية التحقيق. بالإضافة إلى ذلك، تسعى البحث لتحليل أهمية الفروق بين الذكور والإناث في مستوى دافعية التحقيق والتحصيل الأكاديمي ضمن عينة تتألف من 32 مشاركًا، منهم 16 إناث و16 ذكور. تم اختيار هذه العينة عن طريق الاختيار المتعمد خلال الفصل الدراسي الأول من العام الأكاديمي 2020/2019 في مدرسة العميد أميرش أستاولي الثانوية.

باستخدام منهج وصفي، سعى الباحث إلى دراسة العلاقة المتبادلة بين النجاح الأكاديمي في مادة الرياضيات ودافعية التحقيق، بالإضافة إلى تحليل التباينات التي تظهر بين الطلاب والطالبات من حيث هذين المتغيرين.

تؤكد نتائج الدراسة صحة الفرضية الأولية، التي تفترض وجود ارتباط واضح بين الكفاءة الأكاديمية في مادة الرياضيات ودافعية التحقيق. على الجانب المقابل، لم تتم دعم الفرضيتين الثانية والثالثة، التي افترضت وجود فروق في دافعية التحقيق تعزى إلى الجنس وفي التحصيل الأكاديمي في مادة الرياضيات بين الذكور والإناث، من خلال نتائج الدراسة.

كلمات مفتاحيّة

دافعية التحقيق، التحصيل الأكاديمي، الرياضيات

Résumé

L'objectif de la présente étude est de révéler l'étendue de la corrélation entre le rendement académique en mathématiques et la motivation pour la réussite, ainsi que d'examiner la signification des différences entre les hommes et les femmes dans le niveau de motivation pour la réussite et la réussite académique, au sein d'un échantillon de 32 élèves, comprenant 16 femmes et 16 hommes, choisis au moyen d'un échantillon intentionnel au cours du premier semestre de l'année

académique 2019/2020 à l'école secondaire Colonel Amirouche Astawali. Le chercheur a utilisé une approche descriptive pour étudier la corrélation entre le rendement académique en mathématiques et la motivation pour la réussite, ainsi que les différences entre les hommes et les femmes au niveau de chacune des deux variables. Les résultats de l'étude ont permis de réaliser la première hypothèse selon laquelle il existe une relation entre le rendement académique en mathématiques et la motivation pour la réussite. En ce qui concerne les deuxième et troisième hypothèses, elles n'ont pas été confirmées, c'est-à-dire qu'il n'y a pas de différences dans la motivation pour la réussite en fonction de la variable du genre, et même en ce qui concerne le niveau de rendement académique en mathématiques, il n'y a pas de différences entre les hommes et les femmes.

Mots-clés

Motivation pour la réussite, rendement académique, mathématiques