Exploring Achievement Motivation in Light of Some Variables

Hiyam A. Younis   **Adnan Atoum**

Counseling and Educational Psychology Dept, Faculty of Educational Sciences, Yarmouk University

yhiyam2017@gmail.com   atoum@yu.edu.jo

Abstract

This study examined the level of achievement motivation among Arab students at Technion University Institute of Technology in Haifa, with a focus on gender, specialization, and academic year differences. The study sample consisted of (384) Arab students at the Technion- Institute of Technology in Haifa. For the purposes of the study, data was collected using the achievement motivation scale (Othman et al., 2014). Results showed an average level of achievement motivation among the students, with no statistically significant differences based on gender or specialization. However, there were notable differences based on academic year, particularly between first year and fourth-year students. The results of the research were discussed in the light of the theoretical framework and previous studies. The study recommends the development of training programs and workshops to enhance achievement motivation among students.

Keywords: Achievement motivation, Academic Arab students, Technion- Institute of Technology

استكشاف دافعية الإنجاز في ضوء بعض المتغيرات
هيام عاهد يونس   **عدنان يوسف العتوم**
قسم علم النفس الإرشادي والتربوي - كلية العلوم التربوية - جامعة اليرموك
atoum@yu.edu.jo   yhiyam2017@gmail.com

الملخص

تناولت هذه الدراسة مستوى دافعية الإنجاز لدى الطلاب العرب في المعهد التكنولوجي بجامعة التخنيون في حيفا، في ضوء متغيرات الجنس والتخصص والمستوى الدراسي. تكونت عينة الدراسة من (384) طالباً عربياً في معهد التخنيون للتكنولوجيا في حيفا. ولأغراض الدراسة تم جمع البيانات باستخدام مقياس الدافعية للإنجاز (عثمان وآخرون، 2014). وأظهرت النتائج وجود مستوى متوسط في دافعية الإنجاز لدى الطلبة، مع عدم وجود فروق ذات دلالة إحصائية حسب الجنس أو التخصص. ومع ذلك، كانت هناك فروق دالة احصائيا في دافعية الانجاز وفق متغير المستوى الدراسي بين طلاب السنة الأولى والسنة الرابعة. وتمت مناقشة نتائج البحث في ضوء الإطار النظري والدراسات السابقة. وتوصي الدراسة بتطوير البرامج التدريبية وورش العمل لتعزيز دافعية الإنجاز لدى الطلاب.

كلمات مفتاحية: دافعية الإنجاز، الطلاب الأكاديميون العرب، التخنيون- المعهد التكنولوجي.

Introduction

The university stage is a crucial period in students' lives, where they experience preparation, achievement, and the establishment of goals. During this time, students strive to attain academic excellence and direct their efforts towards accomplishing their goals.   The achievement motivation for university students is one of the most important motives and factors that play a decisive role in success or failure. Achievement motivation is one of the most important outputs of the education process. Everything that students accomplish, achieve, rather, achieve requires a motivation that pushes them towards achieving the best performance, self-realization, striving for success, and avoiding failure. Achievement motivation is one of the most important educational concepts that was and still is strongly present in research, as it is the engine for achieving goals and self-realization in various fields. It is an emotional internal state that generates in the student a sense of competition, which has a direct connection with his orientation towards planning work, achieving his achievement, and achieving excellence (Albert, 2005).

Adler sees the need for achievement as a compensatory motive for childhood experiences, while Levin sees ambition as the need for achievement. As for Murray (1938), he defined it as the individual's desire to overcome obstacles, and his tendency to exercise strength, struggle, and striving to perform difficult tasks well and quickly whenever possible in a way that makes the individual satisfied with himself. As for (McClelland et al., 1976), they used the term achievement motivation instead of the need for achievement, and defined it as a relatively stable readiness in the personality that determines the extent of the individual's pursuit and perseverance in order to achieve and achieve success that results in a kind of satisfaction, and that it is the outcome of the conflict between two goals: achieving success and avoiding failure. They considered it a need to achieve something of value, so that the individual works to challenge the dilemma he encounters to solve it.

Ver off as cited in Khalifa (2000) distinguished two main types of achievement motivation: Self-achievement motivation requires applying personal standards in achievement situations based on previous experiences; and social achievement motivation includes excelling based on comparison with the performance of others.

Individuals with high achievement motivation attribute their past success to their abilities and attribute their failure to factors and forces outside their control, and choose situations that involve competitive criteria (money, scores, winning a certain game) and choose medium-difficulty tasks that challenge their strengths but are realistic, and prefer to get feedback from accurate and harsh sources that are less amenable to social pressures, and despite this, they are prone to psychotic disorders such as headaches and ulcers (Farah and Atoum, 2002; Al-Munizel and Atoum, 2015).

As for those with low achievement motivation, they have a motivation to avoid failure stronger than the motivation to achieve, and they choose very easy or very difficult tasks that most people fail, as failure in them is natural and does not entail negative implications, and they stay away from medium-difficulty tasks that they are likely to fail in, while others succeed (Abu Ghazal, 2015). Ozbel, referred to in Abdullah (1996), believes that achievement motivation has three components: cognitive motivation, self-direction, and belongingness motivation.

Factors affecting achievement motivation:

several studies **(**Badawi & Abdel-Jalil, 2012; Atoum & Abo Hilal, 2017) summarized several factors affecting achievement motivation:

- **Subjective factors pertaining to the student,** such as the need for self-affirmation, and obtaining a prominent position in society; the need to feel special and superior; improving the social and economic level of the family; the ability to positively influence and help others; and achieving personal independence.
- **Family factors:** such as the family's interest in education through material and moral stimuli; providing an atmosphere of understanding and love; a sense of responsibility towards the family; provision of material resources.
- **Factors related to the group of comrades:** such as the existence of a positive atmosphere of competition; cooperation and encouragement among comrades; the need to form positive relationships; participation and exchange of information among them.
- **Factors related to the educational institution:** such as the ability of the teacher to communicate with students and their participation in the activities, and his ability to communicate information correctly, and cooperation between teachers among them, and the provision of material capabilities to impose an appropriate atmosphere for learning, and the compatibility of tests with scientific content.
- **Demographic factors:** such as the place of residence, arrangement within the family, the number of family members, and the college in which he studies.

Several studies have focused on achievement motivations in the region and internationally, however no studies were conducted in Palestine. A study by Al-Yousef (2018) intended to determine the level of achievement motivation among postgraduate students at the University of Jordan in light of the variables of gender, type of academic program, specialization, and level of academic achievement. The sample included (733) students, including (412) female students. The results of the study showed that graduate students at the University of Jordan have a high level of motivation for achievement. The results also indicated that there are statistically significant differences in the level of motivation for achievement among the sample members, due to the variable of gender, in favor of females, and the presence of statistically significant differences due to the variable of academic achievement level. It was for the benefit of students with high achievement.

Another study by Muhammad and Falih (2022) aimed to identify the level of achievement motivation among students at Al-Mustansiriya University for the academic year 2020/2021 according to the variables (gender, specialization). The study sample amounted to (400) students. The results showed that the research sample had a high level of achievement motivation, and there were no statistically significant differences in the level of achievement motivation according to the gender variable. While statistically significant differences were found according to the specialization variable in favor of scientific specializations.

Al-Abri's study (2022) aimed to measure the level of achievement motivation among general diploma students in schools in the Sultanate of Oman in light of some variables (gender, birth order, and family income level). To achieve the goal of the study, the achievement motivation scale was used, and a sample consisted of (825) male and female students was chosen. The results concluded that the level of achievement motivation was high in the study sample. There were statistically significant differences at the significance level ($\alpha \leq 0.05$) in favor of females, while the study did not find any statistically significant differences due to the variable of birth order and the level of family income.

Statement of the Problem:

This study comes after a critical historical period of the Corona (Covid 19) pandemic that swept the world and led to the innovation of new ways to enable students to continue learning in a safe, supportive and stimulating environment, during the lockdown period and beyond. Despite the efforts of teachers and parents to mitigate the effects of the restrictive measures of COVID-19 on students, studies have shown a decrease in the motivation for academic achievement of students, especially with a decrease in their participation in social activities (Subakthiasih et al., 2020; Zaccoletti et al., 2020). Hence the interest in studying achievement motivation among university students; they have reached a stage of full physical development, with crystallization identity and they are in a period in which goals are drawn and directed towards achievement.

In addition, Arab student are minority. We choose the most estimated university that the best students are accepted to: so this study will examine the achievement motivation deferent with gender, specialization, and differences in academic year.

In the light of the foregoing, this study based on theoretical and logical foundations and realistic data that were analyzed, aims to answer the following question: "What is the level of achievement motivation among Arab students at the Technion University Institute of Technology in Haifa in light of the variables of gender, specialization, and academic year?"

Study Importance: The importance of the study is as follows:

Theoretical importance: The study contributes to the literature on achievement motivation by examining it among Arab university students, a population that has been underrepresented in previous research. The study provides insights into the relative importance of different domains of achievement motivation, with goal setting being the most important and perceived competence being the least important.

Applied importance: The study has practical implications for educators and policymakers who seek to enhance achievement motivation among Arab university students. The study suggests that interventions should focus on enhancing goal setting and perseverance, which were found to be the most important domains of achievement motivation. The study provides a deeper understanding of the factors affecting achievement motivation, especially after the COVID-19 pandemic, which can enrich the theoretical literature available in the library and benefit researchers and workers in the field of university. Also, the study findings can guide the development of training programs and workshops aimed at fostering achievement motivation among students, which is particularly important in the context of the COVID-19 pandemic that has disrupted traditional learning environments.

Definition:

Achievement Motivation: "It is the individual's internal desires to achieve good performance, and the external behavior to reach excellence, and they are two elements for achieving success" (Othman et al., 2014).

Operationally, achievement motivation is defined as: the scores obtained by the student in the achievement motivation scale. Methodology.

Methodology

Population and Sample: The study population consisted of (600) Arab undergraduate students at the Technion University Institute in Haifa. While the sample of the study consisted of (384) students who were chosen using the accessible sample method.

Study Instrument: Achievement Motivation Scale

The researchers used the achievement motivation scale (Othman, et al.,2014), which consisted of (25) items distributed over four sub-dimensions: (perseverance, goal setting, level of ambition, and perceived competence). The original scale has many validity and reliability indicators and was used widely in Arabic.

For the purpose of the present study, Psychometric characteristics of the achievement motivation scale were conducted:

Face Validity: The scale was presented in its initial form to a group of (16) judges to verify the suitability of the paragraphs for the dimension, the main subject of the scale, and the linguistic formulation and its integrity. The amendments were limited to amending the language of some items, and two items were omitted, bringing the number of items to 22.

Construct Validity: The scale was applied to a survey sample consisting of (40) male and female students from outside the target sample. The Pearson Correlation coefficient was used to extract the values of the correlation coefficients of the paragraphs to the domain to which they belong, and the values of the correlation coefficients of the paragraphs to the total score of the scale, and Table (1) illustrates this.

Table 1

Indicators of the validity of constructing the achievement motivation scale

Paragraph	Correlation to domain	Correlation to the overall score
	Perseverance	
1	**9 5**	.33*
2	.61**	.50**
3	.50**	.31*
4	.47**	.35*
5	.37*	30*
6	.39*	.40**
7	.56**	.34*
8	.58**	.46**
9	0.22	.38**
	Goal setting	
10	.47**	.35*
11	.51**	.38**
12	.47**	.36*
13	.41**	.34*
14	*.3 4	.41**
15	.55**	.30*
	Level of ambition	
16	.45**	.39**
17	.50**	.34*
18	.32*	.33*
19	.40**	.32*

Paragraph	Correlation to domain	Correlation to the overall score
	Perceived competence	
20	.50**	.42**
21	.38**	.38**
22	.82**	.39**

*Statistically significant at the level of significance (*p < .05). **Statistically significant at the level of significance (**p < .01)*

It is noted from the data in Table (1) that the correlation coefficient of paragraph (9) was of an unacceptable and non-statistically significant degree, and needs to be omitted. As for the rest of the paragraphs, they ranged between (30.-82.), and they had acceptable scores and were statistically significant. Therefore, paragraph (9) was omitted, and the number of paragraphs of the scale became (21).

Reliability of achievement motivation scale: Cronbach's Alpha equation was used, and Table (2): shows that:

Table 2
Indicators of the reliability of the achievement motivation scale

Domains	Number of items	Cronbach Alpha
Perseverance	8	0.71
Goal setting	6	0.70
Level of ambition	4	0.60
Perceived competence	3	0.66
Total Grade	**21**	0.74

It is clear from Table (2) that the internal consistency reliability values ranged between (.60-.71), and that the overall reliability coefficient was (.74). These values are considered appropriate, so the scale remained composed of (21) items.

Correction of achievement motivation scores: Means were classified into three levels, as follows in Table (3):

Table 3
Degrees of judgment on the level of the level of achievement motivation

Low level	**1.66 or less**
Average level	**1.67 – 2.33**
High level	**2.34- 3.00**

Results

To answer the main question: "What is the level of achievement motivation among Arab students at the Technion University Institute of Technology in Haifa in light of the variables of gender, specialization, and academic year?", the means and standard deviations of the achievement motivation scale among Arab undergraduate students at the Technion University Institute of Technology in Haifa were calculated. Table (4) illustrates this.

Table 4
Means and standard deviations of achievement motivation domains

Scale	Rank	Domain	Arithmetic mean	Standard deviation	Level
Achievement Motivation	**1**	**Goal setting**	2.41	0.38	**High**
	2	**Level of ambition**	2.29	0.505	**Medium**
	3	**Perseverance**	2.24	0.322	**Medium**
	4	**Perceived competence**	2.07	0.458	**Medium**
	Total		2.26	0.312	**Medium**

It is clear from Table (4) that the total means was (2.26), with an average estimate, and the mean for the four domains ranged between (2.41-2.07). The domain of "goal identification" ranked first, and the "perceived competence" came in the last rank.

To test the effect of demographic variables on achievement motivation, the means and standard deviations of the responses of the study sample were calculated according to the variables: gender, specialization, and academic year, and Table (5) shows that.

Table 5
The arithmetic means and standard deviations of the responses of the study sample according to the variables: gender, specialization, and academic year

Variable	Level	Achievement Motivation		
		Number	Average	Deviation
Gender	Male	124	2.29	0.299
	Female	238	2.25	0.318
Specialization	Engineering Sciences	316	2.25	0.317
	Medical Sciences	26	2.3	0.256
	Computer Science	20	2.4	0.261
Academic year	First	134	2.34	0.277
	second	85	2.29	0.307
	Third	72	2.18	0.308
	fourth	43	2.19	0.373
	Fifth or more	28	2.15	0.296

It is clear from Table (5) that there are apparent differences between the arithmetic means, and to reveal the significance of the differences, a three-way ANOVA was performed. Before conducting it, its assumptions related to violating the homogeneity of the variance or not were verified, through the (Levene) test, where the value of (F) calculated of the (Levene) test was (.895) at two degrees of freedom (25 for the numerator, and 336 for the denominator) with statistical significance (.613), which indicates that there is no violation in the homogeneity of variance, and therefore this condition is fulfilled. Table (6) shows the three-way variance analysis.

Table 6

3-way ANOVA according to the variables: gender, specialization, and academic year

Variance source	Squares sun	Degrees of freedom	Squares average	F value	Statistical significance
Gender	0.195	1	0.195	2.12	0.146
Specialization	0.348	2	0.174	1.894	0.152
Academic year	2.025	4	0.506	5.518	.000*
Error	32.485	354	0.092		
Total	1890.807	362			

*Statistically significant at the level of significance (*p < .05)

It is noted from Table (6) that there are no statistically significant differences due to the variables: gender and specialization, while the differences were statistically significant according to the academic year variable.

In order to reveal the significance of the differences according to the variable of the academic year, the Scheffe test was conducted. Table (7) illustrates this.

Table 7

Results of the (Scheffe) test for Post-Hoc comparisons between the arithmetic means of the measure of achievement motivation among Arab students at the Technion University Institute of Technology in Haifa according to the academic year variable

Variable	Level	Average	First	Second	Third	Fourth	Fifth or more
Achievement Motivation	First	2.34			.17*	.15*	.19*
	Second	2.29			.11*		.14*
	Third	2.18					
	Fourth	2.19					
	Fifth or more	2.15					

*Statistically significant at the level of significance (*p < .05)

Table (7) indicates that there are statistically significant differences due to the variable of the academic year between (first) on the one hand, and each of (third), (fourth) and (fifth or more) on the other hand; The differences were in favor of (first), and the differences were statistically significant between (second) on the one hand and each of (third), and (fifth or more) on the other hand, and the differences were in favor of (second).

Discussion

The results showed that the overall degree of achievement motivation among Arab students at the Technion University Institute in Haifa was average (Medium), and all domains came with an average degree except the goal setting domain which was high.

This result can be attributed to the fact that the Arab students admitted at the Technion University Institute have a medium level of achievement motivation, a high level of goal setting, and a medium level of ambition, perseverance, and perceived sufficiency, because the majority of students, upon their admission to this prestigious institute that attracts distinguished students, set great goals, but they often encounter the difficult reality of the fact that the Arab student is a

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second-class student, in which Arab students constitute a minority in relation to Jewish students, which reduces their achievement motivation in general and reduces their ambition, perseverance, and lack of a sense of belonging.

This can also be attributed to the critical period of restrictions during the Covid-19 epidemic, and because students study at this institute scientific disciplines that need face-to-face and applied learning, whether in medical or engineering disciplines, in addition to the loss of aspects of social life, which reduced their achievement motivation. Studies have shown a decrease in students' academic achievement motivation, especially with their decreased participation in social activities, especially in light of the Corona pandemic (Zaccoletti et al., 2020). This result can also be attributed to the individual differences among the students; not all students have the same perceived competence, ambition, and perseverance, because many students in scientific disciplines are exposed to many frustrations as a result of difficult subjects and high study requirements, which reduces their achievement motivation (Al-Adamat, and Atoum, 2022).

The results revealed that there were no statistically significant differences due to the gender variable. This result can be attributed to the fact that males and females live in one environment in which the elements of achievement motivation are available equally in general. And because women who study medicine and engineering are affiliated with this institute are motivated equally with males, since they chose these specializations, as they most often postpone marriage until after completing their education, and they also receive family support and encouragement for education.

The results also showed that there are statistically significant differences attributed to the variable of the academic year between (first), (third), (fourth) and (fifth or more), where the differences came in favor of (first). The differences were also statistically significant between (second) and each of (third) and (fifth or more) in favor of (second). This result can be attributed to the fact that university students have achieved achievements in high school in their Arab towns, and then joined the university; The Arab student in the first year, once he is accepted into this university institute, is considered an achievement in itself, so he begins with a high achievement motivation that quickly decreases with time and involvement in learning and the difficulty of the materials, not to mention the multiplying challenges that the Arab student faces because he is from the minority and has great racism towards him. Motivation rises in the fourth year, due to the close completion of studies for some specializations and obtaining a university degree. Then the motivation goes back to declining at five years or more, either because there are students who face failure and delay in studies, or because these are students in medical specializations that need more years of study.

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Recommendations:
- Conduct further research to explore the relationships between achievement motivation and other variables, such as personality traits, cultural factors, and academic performance, university environment and climate, specific needs and challenges of Arab university students as a minority, such as language barriers, cultural differences, and financial constraints.
- Expand the study to include a larger and more diverse sample of Arab university students from different universities, countries and regions, non-Arab students, or high school students to increase the generalizability of the findings.
- Use longitudinal designs to examine the development of achievement motivation over time and to assess the effectiveness of interventions aimed at enhancing achievement motivation.
- Conducting preparatory programs and preparatory workshops for students to enter academic life which increase their motivation towards achievement.
- Encourage collaboration and communication among students, faculty, and administrators to create a shared vision and strategy for enhancing achievement motivation and academic success among Arab university students. References

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