

Mastery Motivation in University Students

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Abstract

The current research aims at exploring:

1. Motivation of mastery in university students.
2. Statistically significant differences in mastery motivation according to gender (male, female) and specialization (scientific, human).

The researcher has adopted the mastery motivation scale, which consists of (24) items. It is exposed on a group of experts to judge the validity of its items. The psychometric properties of it are ascertained by administering it to the research sample that consists of (400) male and female students from the University of Wasit, they are chosen by using the stratified random method. The researcher has ascertained the reliability of the scale in two ways: by using re-test where the reliability coefficient is (0.84), and by using Alphcronbach equation, which is (0.82). However, the researcher has arrived at the following results:

1. University students have mastery motivation.
2. There are no statistically significant differences in the motivation for mastery according to the variables of (gender, specialization) in university students.

In light of the results, the researcher has developed conclusions, recommendations and suggestions.

Keywords: University Students; male; female; mastery motivation

Research problem

It is no longer acceptable in our time for a small group of students to reach the degree of mastery to keep pace with this huge amount of contemporary scientific developments. Thus, almost all educators agree on a basic principle and an important strategic goal which the educational process seeks to achieve, that is to make the student reach to the desired state of learning (mastery). (Radwan, 2021:13)

(Al-Tayeb, 2020) indicates that there are reasons behind the low level of mastery motivation among students, some of which may be related to the student himself, others are related to the available financial capabilities, and still others are related to social circumstances. (Al-Tayib, 2020: 76)

The study of (Wahid, 2017) indicates that the reasons behind poor academic achievement are the low level of mastery motivation and the classroom environment that do not encourage academic activities and do not enhance the achievements introduced by students. (Wahid, 2017: 56)

Mastery motivation is of great importance to university students. In fact, it is no less important than the importance of cognitive and professional skills, as it raises students'

activity and enthusiasm, reduces their distraction in classroom situations, helps students understand and interpret their performance in different learning situations, as well as organizes and directs students to achieve maximum possible benefit in the educational process (Humphreys, 1990:13). The student who is motivated by mastery motivation is able to adapt to the surrounding circumstances and is able to change them. Such student is interested in acquiring new skills and seeks for knowledge, exploring anything new to complete his task skillfully and masterly, such student prefers tasks that requires challenging and always strives to develop himself (Naeem, 2004: 16).

Research importance

Mastery motivation has an important role in determining the level of directing individuals towards achieving the various goals. It is one of the important factors and variables that drives individuals towards becoming preoccupied with and engaging in the teaching and learning process. It is the basis of good performance. Therefore, it is a must to take care of mastery motivation and must be developed by students so that they can use it in all cognitive, emotional and motor activities, and employ it to achieve educational goals. Therefore, working on study mastery motivation is one of the necessary things that require research and study. (Gilmore, et al, 2017; Garcia-Hernandez et al., 2021)

It also encourages the individual to work hard to master a particular skill or ability. The motivation for mastery works as long as the challenge continues and as long as the acquisition of skill or ability is not completed, that is, until mastery is reached (Józsa, et al, 2017: 159). Morgan and others (Morgan, et al, 1990) assert that the motivation to mastery is a psychological force that motivates the individual to try independently, in a focused and continuous manner, to solve a problem that represents a challenge for the individual.

The mastery motivation is also an important personal characteristic of excellence, as the majority of individuals aspire to reach high levels of proficiency during the performance of their daily tasks, and therefore set goals for themselves with high standards. (Salman, 2019: 19)

Douglas (2002) indicates that the learner's motivation towards mastery must be compatible with the learner's effective use of learning strategies, which may lead to a more accurate and deeper processing of information, an improvement in the quality of educational outcomes and results and reach to a better academic performance. (Douglas,2002; Lobão & Costa, 2020)

The motive for mastery is one of the important motives in directing behavior and explaining the reasons that make a person acts in a certain way. It is also an essential component in the individual's pursuit of self-realization and assertion, better life, and greater levels of human existence. (Wahed, 2017; Granada & Mejia, 2020)

The study of Li and others (Li, et al, 2018) indicates that individuals who are motivated towards mastery goals and creativity goals have achieved a better level of learning compared to individuals who are oriented towards performance goals. The results of the study have arrived at the existence of a positive correlation between mastery motivation and creativity in the students of University of Brestol (Li, et al, 2018: 54).

In light of the aforementioned, the importance of the current research can be summarized as follows:

Theoretical significance

The importance of current research lies in what will be included in it of literature, theories and previous studies, which may remove ambiguity from the concepts of the current

research. It comes as an attempt to provide the Arab and Iraqi library with study concerned with motivation of mastery.

University students are an important section of society, which it is hoped to achieve the bright future of society, and this calls to work for their advancement in all fields of life.

Practical importance

The current research provides a new measuring tool for the mastery motivation construct, which can help researchers in education and psychology in future studies and research.

Research aims

The current research aims at identifying:

1. Motivation for mastery in university students.
2. Significant of differences in the mastery motivation according to the variables of gender (male, female) and Specialization (scientific, humanitarian)

Search limits:

The current research is limited to Wasit University students of both genders (males and females), from the two majors (scientific and humanity) in the academic year (2021-2022).

Terms Definition

Mastery Motivation:

It is defined by:(Barrett & Morgan, 1995)

"A multi-faceted psychological and intrinsic force that motivates an individual to attempt to master a skill or task that challenges him, at least to some extent." (Barrett & Morgan, 1995:58).

Doherty-Bigara & Gilmore (2015)

"An intrinsic drive for the discovery and control of one's environment as one of the basic concepts of development that should be considered as part of the student evaluation process" (Doherty-Bigara & Gilmore, 2015:11).

Mastery Motivation

The American, Henry Alexander Murray (Murray, 1893), Professor of Psychology at Harvard University, was one of the first theorists who referred to the impulse of mastery, but he did not name it in its explicit form. He believes that the strength of the need for achievement appears in the individual's pursuit of difficult tasks, and this is due to what the individual does in organizing his thoughts in an independent way to overcome the difficult tasks assigned to him or the tasks facing him to reach a high level of mastery and excellence to compete with others. Murray also believed that the need for mastery is one of the basic needs through which an individual can reach accuracy and excellency. (Murray,1893:230)

The explicit historical background in constructing the motivation for mastery can be traced back to White's theoretical work (White, 1959), specifically on the motive of children's behaviour. While the main work that demonstrated the concept of mastery motivation is due to the study conducted by Morgan and others (Morgan, et al, 1975) that is concerned with mastery motivation in children. Since then, the research in mastery motivation began to take a new direction and include measurement tools that have more diversity and accuracy (Bruick,

2019: 64). The motivation to mastery is an intrinsic motive for exploring the individual's environment, where (Morgan, 2015 & Jozsa) referred to the concept of mastery motivation as a major evolutionary concept (Morgan, 2015: 88 & Jozsa).

According to Gilmore, et al, (2003), and Jozsa & Molnar (2013) the motivation of mastery represents a somewhat different structure from the motivation or encouragement, as motivation mastery focuses on behaviors and emotions that reveal the individual motivation for success and academic achievement (Jozsa & Molnar, 2013:35) (Gilmore, et al, 2003: 200), where mastery and success lead to raising the level of ambition because they make the individual feel comfortable, raise his morale, and drive him towards better and perfect performance while failure and inability to master cause frustration and are accompanied by a low level of goals and a hindrance to learning (Keilty, 2003:119).

Characteristics of those who are motivated to mastery

Individuals with a high motivation mastery are characterized by a number of characteristics, including:

1. They are more stable in the performance of tasks.
2. They choose to challenge themselves and become very immersed in challenging tasks.
3. They feel happy and proud of their success.
4. They show greater motivation to master activities that fall within their field of interest.

(Gilmore & Guskelly,2014: 382)

5. They are characterized by caution and accuracy in carrying out the tasks assigned to them.
6. Mastering tasks regardless of their difficulty, desire and communication for learning and curiosity.
7. Inquiring and searching the tasks assigned to them until they master them perfectly.

(Barrett & Morgan, 1995:74)

Factors affecting the motivation of mastery

Gilmore and Guskelly (2014) indicate to a number of factors that affect the motivation mastery, including:

1. Internal factors: These factors are the self-desire or the intrinsic motivation of the individual, which may be motivated by the desire for mastery, self-actualization, or a sense of efficiency.
2. Extrinsic factors: These are factors that an individual obtains from the environment and surrounding individuals and may contribute to the impulse to mastery, including:
 - Encouragement and support for independence.
 - Strengthening efforts that promote and maintain the motivation for mastery.

(Gilmore & Guskelly,2014: 383)

Theories that interpret motivation mastery

Murray's theory (Murray, 1970):

The motivation for mastery is evident according to Murray's point of view, through (the individual's pursuit of difficult work and his ingenuity in dealing with ideas and material things while accomplishing this quickly and independently as possible, the individual's

ability to overcome the obstacles he encounters and reaches a high level in a particular aspect or field in life, the superiority of the individual over himself and his competition with others and superiority over them, and the increase in the individual's self-esteem through the successful practice of his abilities and potentials (Ahmed 92: 2020). In addition to that, his mastery motivation is represented through exerting efforts, insist on winning, try to do everything perfectly, to be provoked in the presence of others, and to exercise willpower. (Douglas, 2002:112)

Morgan's Theory (Morgan, 1995)

Morgan, et al, 1990 suggest that the motivation to master is an initially multifaceted psychological force that motivates an individual to attempt to master a challenging skill or task. (Józsa, et al, 2017: 107)

Morgan and others (Morgan, et al, 1990) identify three main forms of mastery motivation, which are:

Cognitive persistence: It means the individual's motivation to continue to master cognitive and school tasks. It is represented in the student's attempts to perform academic tasks and topics skillfully and accurately and persist for a long time to carry out a specific educational task. (Mac Turk & Morgan, 1995: 51)

Gross motor persistence: It includes the motivation to master physical skills, however, this form of mastery motivation is represented in the individual's tendency to participate in motor tasks, as we find that students who have high levels of activity, their perseverance in educational tasks decreases, and their motivation to master motor tasks increases. (Morgan, et al, 2013: 81)

Social persistence: the impetus for mastery includes personal relationships with others (Morgan, et al, 1990: 320). This form is represented in the student's desire to interact with others efficiently, and this appears by trying to start interacting with others and trying to maintain interaction. (Mac Turk & Morgan, 1995: 52)

Barrett and Morgan (Barrett & Morgan, 1995) emphasize the importance of the emotional or expressive aspects of mastery motivation. They highlight the role of the pleasure of mastery in enhancing the motivation for mastery, and the rate of frustration, sadness or shame after failing to master a task (Barrett & Morgan, 1995: 70)

Morgan and his colleagues divide mastery motivation into five dimensions:

The first dimension - task persistence: It means continuous efforts to gain mastery of a difficult task.

The second dimension - preference for challenge: It means the likelihood of accepting the challenge rather than avoiding it.

The third dimension - task-related pleasure: It means feeling positive emotions while working towards mastery and achieving it.

The fourth dimension - self-efficacy: It means the individual's confidence in his own ability.

The fifth dimension - Task absorption: It means approaching the difficult task with concentration (Doherty-Bigara & Gilmore, 2015:143; Bruick, 2019:85).

The second aspects: Previous studies

Second: Studies dealing with mastery motivation

1- Arabic Studies:

Mustafa's Study (2006)

The factorial construction of mastery motivation and its impact on the adoption of learning methods and academic achievement among students of the College of Education

Objective: To identify the factorial structure of the mastery motivation variable, and its impact on the adoption of learning methods and academic achievement among students of the College of Education.

Sample: The study sample consists of 320 male and female students from the college of Education, Assiut University.

Tools: Mastery Motivation Scale, consists of (66) items, and Learning Methods Scale, consists of (42) items, prepared by the researcher.

Results: There is a positive and statistically significant correlation between the degree of achievement and the mastery motivation variable in the groups that adopted the deep learning method. It is also found that there are differences in the components of mastery motivation in the group that adopted the deep learning method between males and females, in favor of females. (Mustafa, 2006: 23-112)

2- Foreign studies:

Doherty-Bigara & Gilmore, 2015

"Development of the Dimensions of Adult Mastery Motivation Questionnaire"

Objective: The study aims at constructing a measure for measuring mastery motivation in adults.

Sample: The research sample consists of (628) adults, their ages ranged between (18-90) years.

Tools: The study used a scale of mastery motivation constructed by the researchers, consisting of (24) items and (5) responding options.

Results: The study concludes that the degrees of mastery motivation are higher among university students compared to those who have secondary education only. The study also shows that there are no statistically significant differences in the motivation to mastery between males and females, and it does not show significant differences in the mastery motivation with respect to age (Doherty-Bigara & Gilmore, 2015: 142-157).

Third: Scales of mastery motivation

To achieve the objectives of the current research, the researcher has adopted the mastery motivation scale, which is constructed by (Doherty-Bigara & Gilmore, 2015). The scale consists of five dimensions (persistence in the task, preference for challenge, pleasure related to tasks, self-efficacy, and absorption of tasks). These are (24) items and each item contains five responding alternatives, where the responding scores are (5, 4, 3, 2, 1) respectively for positive items and (1, 2, 3, 4, 5) for negative items.

Finding the validity of the items of the scale (Face Validity)

It means that the scale must be outwardly valid, that is, how does the scale seem appropriate for the purpose for which it is set. Face validity plays a major and prominent role in developing, cooperating the respondents and directing their attention to the type of responding required from them. (Gabriel and Gabriel, 2007: 200)

This type of validity has been attained by exposing the items of the mastery motivation scale in its initial form, see sppendix (5), to a group of experts in educational and psychological sciences, see appendix (6). Based on the opinions of the experts, the scale is accepted without making any modifications, it has gained the agreement of all experts at a percentage of (100%).

Clarity of instructions and items sample:

This procedure aims at identifying the clarity of the scale instructions, items and responding options, as well as to detect the items that are ambiguous or lack clarity to the sample members, try to modify them, and then calculate the time taken to respond to the scale items. Because this procedure gives the extent to which the sample understands the instructions, and how clear it is to them. (Faraj, 1980: 160). To achieve this, the researcher has conducted an exploratory experiment and administered the scale in its initial form to (30) male and female students who are chosen at random and assured them that their responses are for the purposes of scientific research. Therefore, they are not asked to mention the name in order to reduce the potential impact of reviewing the responses, and after reviewing the students' responses, it became evident that all the items are clear, and the time taken to answer the scale ranges between (12-20) minutes, with an average of (16) minutes. Table (1) illustrates this.

Table 1. *Clarity of instructions sample of mastery motivation scale according to college, gender and specialization*

College	Department	specialization	male	female	total
Engineering	Civil	scientific	4	4	8
Agriculture	Soil and Water Resources Sciences	scientific	3	3	6
Education	Geography	humaity	5	6	11
Arts	Philosophy	humanity	3	2	5
	Total		15	15	30

Statistical analysis of mastery motivation scale items

Statistical analysis is of great importance. In the light of this analysis, the items that will make up the scale are finally selected. Through it, the items are filtered, and the best ones are selected to prepare the final form of the scale (Mikhael, 2016: 67).

For the purpose of conducting the statistical analysis of the items of the mastery motivation scale, the scale that consists of (24) items are administered to a sample of (400) male and female students, where the total scores are calculated for each of the sample members and for each item of the scale. Note that the degrees of correction of the mastery motivation scale are (1,2,3,4,5) for positive items and (5,4,3,2,1) for negative items, respectively, so the highest score that the respondent can get is (120) and the lowest score is (24).

Discrimination Power of Items

The discriminatory power of an item means its ability to discriminate between those with higher and lower levels of individuals in relation to the characteristic that the item measures. (Shaw,1967:112)

In order to identify the discriminatory power of the items, the researcher has adopted two methods:

First: The method of the two extreme groups:

To identify the discrimination of items by using the two extreme groups, the

researcher has followed the following steps:

1. Determining the total score of each form.
2. Arranging the scores of the sample members in descending order from the highest total degree to the lowest total degree.
3. Determining the two extreme groups by (27%) as a higher group, and (27%) as a lower group, where the number of members of the upper group is (108) individuals, and the lower group is (108) individuals, with a total number (216) individual.

The researcher has used the t-test for two independent samples in calculating the significance of the differences between the mean scores of the upper and lower groups. It is evident that all the items have discriminatory power because they are statistically significant, at the level of significance (0.05) since the calculated t-value is greater than the tabulated t-value of (1.96) with a degree of freedom (214). Table (2) shows the results of calculating the discriminatory power of the items of mastery motivation scale.

Table 2. *The discriminatory power of the items of the mastery motivation scale*

s	upper group		lower group		calculated t-value level of significance (0,05)	
	arithmetic mean	standard deviation	arithmetic mean	standard deviation		
1	4.6111	0.59332	3.6574	0.98744	8.604	significant
2	4.6019	0.54584	3.6204	0.92441	9.501	
3	4.5926	0.69762	3.0648	1.08751	12.288	
4	4.5833	0.58205	3.1574	1.04266	12.410	
5	4.7315	0.58973	3.0278	1.07180	14.473	
6	4.7870	0.56454	3.4352	1.07888	11.538	
7	4.8241	0.38253	3.1019	1.13516	14.941	
8	4.6389	0.55465	3.2407	1.12632	11.573	
9	4.7315	0.52251	3.0926	1.05491	14.468	
10	4.8056	0.39762	3.0741	1.14143	14.887	
11	4.6852	0.54082	2.9630	1.13505	14.235	
12	4.5648	0.58443	3.0648	0.94990	13.977	
13	4.8426	0.41383	3.8148	1.32657	7.686	
14	4.9167	0.27767	3.6759	1.24427	10.167	
15	4.8889	0.31573	3.6204	1.14971	11.057	
16	4.6852	0.57434	3.1481	1.03954	13.450	
17	4.6944	0.50156	3.4907	1.07212	10.568	
18	4.2593	0.68863	3.1296	0.94812	10.018	
19	4.5648	0.56821	3.2685	0.88187	12.841	
20	4.5000	0.72987	3.0093	1.07212	11.945	
21	4.5000	0.80303	3.0648	1.24009	10.095	
22	4.6759	0.59324	3.1667	1.03671	13.131	
23	4.5278	0.67614	2.7963	0.97405	15.176	
24	4.7315	0.60537	3.4815	1.01835	10.965	

The second method is the relationship between the degree of the item and the total degree

(Allen, 1979) points out that the relationship of the item with the total number of the items indicates the extent to which the items of the scale are homogeneous in their measurement of the target behavioral phenomenon (Allen, 1979:124)

The internal consistency method depends on finding the correlation coefficient of each item of the scale with the total score of the scale, and then selecting the items that have a high correlation coefficient and deleting the items that have a low correlation coefficient. (Omar et al., 2010: 204)

Pearson's correlation coefficient is used. It is found that all items are statistically significant as the calculated correlation coefficient values are greater than the critical value of the correlation coefficient of (0.098) at significance level (0.05) and degree of freedom (398). Table (3) shows this.

Table 3. *Correlation coefficient between the score of each item and the total score of the scale*

s	correlation coefficients of the items with the total degree	correlation coefficients of the items with the total degree	correlation coefficients of the items with the total degree	s	correlation coefficients of the items with the total degree	s	correlation coefficients of the items with the total degree
1	0,456	7	0,427	13	0,469	19	0,469
2	0,409	8	0,424	14	0,499	20	0,452
3	0,475	9	0,474	15	0,485	21	0,487
4	0,459	10	0,434	16	0,429	22	0,429
5	0,489	11	0,420	17	0,482	23	0,436
6	0,419	12	0,439	18	0,439	24	0,483

The relationship of the degree of the item with the degree of the domain to which it belongs:

The relationship of the degree of the scale items with the domain to which they belong is calculated by using the Pearson correlation equation. Table (4) illustrates this.

Table 4. *Correlation coefficients between each item and the field to which it belongs.*

	persistence in the task	challenge preference	task-related pleasure	self-efficacy	task absorption				
s	Pearson correlation coefficient	s	Pearson correlation coefficient	s	Pearson correlation coefficient				
1	0,456	9	0,474	13	0,529	19	0,557	21	0,683
2	0,409	9	0,474	13	0,469	17	0,482	21	0,487
3	0,475	10	0,434	14	0,499	18	0,439	22	0,429
4	0,459	11	0,420	15	0,485	19	0,469	23	0,436
5	0,489	12	0,439	16	0,429	20	0,452	24	0,483
6	0,419								
7	0,427								

The matrix of internal correlations of the main dimension's independence:

This type of validity is achieved by ascertaining the correlation between the scores of the respondents between the fields of the scale with each other by using Pearson correlation coefficient, where the correlation of the sub-scales is basic measure of homogeneity. It helps to determine the domain of behavior to be measured (Anastasi, 1976: 155).

The results show that all the correlation coefficients of each domain with other domains are statistically significant. This indicates that all the five domains measure one thing which is mastery motivation, as all the calculated correlation coefficients are greater than the tabulated value of the correlation coefficient of (0.098), at level of significance (05,0), degree of freedom (398), table (5) illustrates this.

Table 5. *Internal correlations matrix*

components	total degree	persistence in the task	challenge preference	task-related pleasure	self-efficacy	task absorption
total degree	1	0,887	0,831	0,741	0,753	0,804
persistence in the task		1	0,694	0,538	0,565	0,617
challenge preference			1	0,548	0,501	0,597
task-related pleasure				1	0,485	0,497
self-efficacy					1	0,578
task absorption						1

Psychometric properties of the mastery motivation scale items

The scale must have some psychometric properties, the most important of which are validity and reliability, because the measurement process requires the availability of many conditions in constructing a tool. Therefore, measurement scientists emphasize the need to verify the validity and reliability of the scale. (Allam, 2006: 184)

The researcher has ascertained the validity and reliability of the scale according to the following procedures:

Validity

It is intended that the test actually measures the trait, ability, aptitude, or tendency that the test is designed to measure. Validity is one of the important characteristics that must be taken into consideration in constructing psychological scales. (Allam, 2000: 281)

Two indicators of validity have been ascertained in the current scale: face validity and construct validity. The following is an explanation of how to verify each of them:

Face Validity

Face validity of the scale as used in this research is achieved by exposing its items to a group of experts and specialists to judge the validity of these items in measuring the concept. Michael, 1976:67).

This type of validity is achieved by displaying the mastery motivation scale to a group

of experts and taking their opinions on the validity of its items and instructions.

Construct Validity

Construction validity means the psychological features that are reflected or appear in the scores of a test or a scale. It is sometimes called the validity of the concept or the validity of the hypothetical formation because it depends on the empirical verification of the extent to which the degrees of the scale match the measured characteristic (Safwat, 1981: 313)

The researcher has ascertained the validity of construction through four indicators:

1. Discrimination, by finding the differences between the two extreme groups.
2. Relationship of the item degree to the total degree.
3. The relationship of the item degree to the domain to which it belongs.
4. Internal correlations matrix.

2- Scale's Reliability

Reliability is a necessary procedure in the psychological and educational scales besides validity, since we do not have real validity and real reliability of the psychological test, but we have indicators of validity and reliability, which are indicators that are changing according to the nature of the sample to which the scale and test are administered. It is re-administered to the respondents themselves at another time. The value of the scale's reliability appears in its ability to detect differences in performance between individuals, where the stability of psychological tests and measures can be verified in many ways (Mills and Peter, 2012: 206), however, reliability is ascertained in two ways. The reliability sample consists of (40) male and female students who are chosen randomly, table (6) illustrates this.

Table6. Reliability sample according to gender and specialization

College	specialization	Gender				total
		male	female	male	female	
Education	humanity	5	5	5	5	20
Sciences	scientific	5	5	5	5	20
	total degree	10	10	10	10	40

Therefore, the reliability is calculated by using the re-test and Alphcronbach methods, and as follows:

Test-Retest method

One of the easiest ways to obtain repeated measurements of the same group of individuals and to measure the same trait is to administer the same measure twice, in two different times on to the same group of individuals (Abdul Hafeez, 2000: 122).

To ascertain the reliability by re-test method, the researcher has administered the scale to a sample of (40) male and female students. After two weeks of the first administration, the scale has been administered a second time and on the same group. Pearson correlation coefficient is calculated between the first and second administration degrees, where the correlation coefficient of the scale is (0.84).

Alphacronbach equation

This method is based on the consistency of individuals' performance from the first

item to the last item, which can be relied upon in estimating the reliability coefficient. (Heagan and Thorndike, 1989:79)

By using the Cronbach equation, the reliability coefficient arrived at (0.82), which is a good and acceptable value and indicates the homogeneity of the scale (Parker et al., 1999: 122). Table (7) shows the reliability coefficients by the re-test and Alphcronbach methods.

Table 7. *Reliability coefficients of mastery motivation scale by re-test and Alphcronbach methods*

Value of correlation coefficient	Method of reliability
0,84	re-test
0,82	Alphcronbach

Statistical indicators of the mastery motivation scale

Statistical indicators of the mastery motivation scale are found by using the Statistical Package of Social Sciences (SPSS), table (8) illustrates this.

Table 8. *Values of the statistical indicators of the mastery motivation scale*

Statistical indicators	Statistical value
arithmetic mean	95,83
median	96,0000
mode	94,00
standard deviation	13,56919
variance	181,15
skewness	0,134
kurtosis	0,111
range	66,00
lower degree	54,00
the top range	120,00

Final description of the scale

The scale of mastery motivation in the current research in its final form consists of (24) items distributed on five domains: (persistence in the task, preference for challenge, pleasure related to tasks, self-efficacy, absorption of tasks), where each item has five responding options, they are (very typical, typical, somewhat typical, not typical, not at all typical), they are given the following weights (5, 4, 3, 2, 1) for the positive items and the weights (5,4, 3, 2, 1) for the negative items. responding scores ranged between (the highest degree is 120 - lowest degree is 24). Thus, the theoretical mean of the scale is (72) degrees. see appendix (7).

Presentation, interpretation and discussion of the results

The first objective: to identify mastery motivation in university students.

To verify this objective, the researcher has administered the mastery motivation scale that consists of (24) items on the research sample that consists of (400) male and female students. The results of the research show that the arithmetic mean of the scores of this sample on the scale reached (95,8275) degrees and a standard deviation of (13,56919) degrees. For the purpose of knowing the significance of the difference between the arithmetic

mean and the hypothetical mean, which reached (72) degrees, the researcher has used the t-test of one sample, where it is found that the difference is statistically significant, as the calculated t-value reached (35,120), which is greater than the tabulated t-value of (1.96), at a level of significance (0.05), and at a degree of freedom (399), which means that the research sample has a mastery motivation. Table (20) illustrate this.

Table 9. *Arithmetic mean, standard deviation, and T-value of the mastery motivation scale*

the construct	sample	arithmetic mean	standard deviation	hypothetical	t-value *		significance (0,05)
					calculated	tabulated	
mastery motivation	400	95,8275	13,56919	72	35,120	1,96	significant

In light of these results, it is concluded that university students enjoy a natural level of motivation for mastery, which can be described as a good level. It agrees with Morgan's theory (Morgan, 1995) that says individuals who are motivated to perfection are characterized by ambition, internal satisfaction, learning orientation, and deep participation in the educational process. Since behind every behavior there is a motive, the motive for mastery is one of those motives that drive individuals to master the work assigned to them and to obtain high grades compared to others. They are also more stable in performing difficult tasks and choose to challenge themselves, and feel happy and proud when they succeed, and they show greater motivation to master the activities that fall within the field of their interests, and they are careful and accurate in carrying out tasks. (Morgan, 1995:74)

The results of the current research agree with the study of Mustafa (2016), the study of Kahraman (2016), the study of Abdullah (2017), the study of Baqer (2018), the study of Al-Banna and Tahoun (2019), the study of (Barron, 2002), the study of (Douglas, 2002), the study of (Gilmore, et al, 2017), the study of (Doherty-Bigara & Gilmore, 2015), the study of (li, et al, 2018) (Wahid, 2017) and the study of (Shaaban, 2019), which indicate that the sample enjoyed a mastery motivation.

The second objective: to identify the statistically significant differences in the motivation for mastery in university students according to gender (males, females) and specialization (scientific, human).

For the purpose of verifying this goal, the researcher took the responses of the research sample which consists of (400) male and female students on the mastery motivation scale, as shown in table (10).

Table 10. *Arithmetic mean and standard deviation of mastery motivation according to (gender, specialization)*

standard deviation	mean	number	specialization	gender
14,948	99,762	42	scientific	males
13,499	93,809	131	humanity	
14,055	95,254	173	total	
12,728	98,120	83	scientific	females
13,082	95,215	144	humanity	
13,001	96,277	227	total	
13,477	98,672	125	scientific	total
13,276	94,545	275	humanity	

In order to confirm the differences in mastery motivation according to gender and specialization, the researcher has used the variance analysis test with interaction, where the

results are shown in table (11).

Table 11. *Two-way variance analysis with an interaction to identify the statistically significant differences in the mastery motivation scale*

source of variance	Squares Ss	freedom degree Df	squares mean Ms	calculated F-value	tabulated F-value	significance level 0,05
gender	15,445	1	15,445	0,083		
specialization	47,468	1	47,468	0,257		
gender * specialization	101,536	1	101,536	0,549	3,84	not significant
error	73248,745	396	184,972			
total	73465,097	399				

The results of the two-way variance analysis show the following results:

Gender: It is found that the calculated F-ratio value is (0.083) for gender which is smaller than the tabulated F-ratio value of (3.84) at a significance level of (0.05) and two degrees of freedom (1,396), which indicates that there are no statistically significant differences in mastery motivation according to the gender.

This result shows that (males and females) have mastery motivation. However, the researcher attributes this result, based on the theoretical framework, to mastery motivation, excellence, distinguishing, and scientific efforts which are not limited to males or females only, but are common incentives between them, drive them to use strategies that attract them towards the learner. It encourages them to persist, perform tasks with great vigor and enthusiasm, and achieve their goals and ambitions with success and superiority.

The results of this study agree with the study of (Doherty-Bigara

& Gilmore, 2015), a study (Gilmore, et al, 2017), a study (Shaaban, 2019), a study by Al-Banna Tahoun (2019), a study by Abdullah (2017), and the study of (Li, et al, 2018), which indicate that both genders (males, females) are motivated to mastery motivation and there is no difference between them.

Specialization: It is found that the calculated F-ratio value is (0.257) for the variable of specialization, which is smaller than the tabulated F-ratio value of (3.84) at the significance level (0.05) and two degrees of freedom (1,396), which indicates that there are no statistically significant differences in mastery motivation according to specialization.

The researcher attributes this result, based on the theoretical framework, to the similarity of the educational environment in terms of the curriculum, financial resources, human capabilities and the stability of educational conditions, which is due to a great deal of homogeneity in the surrounding environmental conditions in the different faculties, which led to the convergence of goals orientations between the students of scientific and humanities faculties. They have a strong desire to achieve their goals and ambitions with confidence, which has a significant impact on increasing their motivation for mastery. Mastery motivation leads to raising the level of ambition because it makes them feel comfortable and raises their morale and drives them towards better and perfect performance. (Douglas, 2002:112)

Gender * Specialization: It is found that the calculated F-ratio value (0.549) in the

interaction between (gender * specialization) is smaller than the tabulated F-ratio value of (3.84) at significance level (0.05) and two degrees of freedom (1,396), which indicates that there are no statistically significant differences depending on the interaction between gender and specialization.

References

- Al-Banna, Adel Al-Saeeda and Tahoun, Rehab Samir (2011). Self-efficacy and mastery motivation and level of ambition as predictors of the quality of academic life in students at the College of Education, Journal of the College of Education in Human Sciences, Ain Shams University, vol. (93), issue (4), p: 1-78.
- Al-Tamimi, Muhammad Kadhim Mahmoud (2013), The Methodology of Writing Research and Letters in Educational and Psychological Sciences, Dar Safaa for Publishing and Printing, 1st floor, Amman, Jordan.
- Thorndike, Lazobert and Higgin, Elizabeth (1989): Measurement and evaluation in psychology and education. Translated by Abdullah Zaid Al-Kilani and Abdul Rahman Adas, 4th floor, Jordan Book Center.
- Al-Jabri, Kadhim Karim, and Sabri, Daoud Abdel-Salam (2013): Scientific Research Methods
- Jibril, Farouk Al-Saeed and Mustafa Al-Saeed Jibril (2007): An Introduction to Educational and Psychological Research (Part One), Edition 1, Mansoura Amara for Printing and Publishing, Mansoura University, Egypt.
- Jabal, Farzi Mohamed, (2000): Personal Psychological and Psychological Health, Azrata University Library, Alexandria.
- Juma'a, Hanan Abdullah (2017): The cognitive structure and its relationship to the drive for mastery in university students, Journal of Intelligence and Mental Abilities Research, No. 22, Al-Mustansiriya University.
- Hussein, Kahraman Hadi Odeh (2015): Initiative and its relationship to the drive of mastery motivation and focus of control in university students, PhD thesis published by the College of Education, Ibn Rushd.
- Hamdaoui, Jamil (2014), Educational Statistics, 1st Edition, East Africa for Publishing and Distribution, Morocco, Casablanca.
- Garcia-Hernandez, A., Berdegué, M. A., Kelly, C., & Navarro, F. M. (2021). Addressing misperceptions about land conflicts and quinoa: the case of Bolivia. *Cuadernos de Economía*, 44(125), 68-78. <https://cude.es/submit-a-manuscript/index.php/CUDE/article/view/190>
- Granada, Y. A., & Mejia, J. F. (2020). Does innovation generate or destroy employment? An application for manufacturing and service firms. *Cuadernos de Economía*, 43(122), 191-212. <http://cude.info/index.php/CUDE/article/view/91>
- Lobão, J., & Costa, A. I. (2020). Do Fixed-Income ETFs Overreact? Evidence of Short-term Predictability following Extreme Price Shocks. *Cuadernos de Economía*, 43(122), 131-144. <https://cude.es/submit-a-manuscript/index.php/CUDE/article/view/87>
- Al-Zoba'i, Abdul-Jalil, Muhammad Elias, Ibrahim Al-Kinani (1981): Psychological Tests and Measures, Iraq.
- Saadeh, Marwa Salah (2017): Strong habits of mind and their relationship to mastery motivation and cognitive flexibility among secondary school students, Journal of Arab Studies in Education and Psychology, p. (87), 277-357
- Shaaban, Ahmed Muhammad, (2015): Psychiatric disorders between theories of psychiatry and the facts of the Holy Qur'an, Research Department of the Madinah Research and Studies Center, No. (18), Fifth Year, Saudi Arabia

- Toheri, Hamad Mohammed (2021): The Six Big Personality Factors and their Relationship to the Motivation of Mastery in Teachers of Intellectual Disabilities in the Jazan Education Department, published master's thesis, College of Education, Jazan University, Saudi Arabia.
- Al-Dhahir, Zakaria Muhammad and others (1999): Fields of Measurement and Evaluation in Education, Library of Culture, Amman.
- Gilmore, L., & Cuskelly, M. (2014): Mastery motivation in children with Down syndrome: Promoting and sustaining interest in learning. In R. Faragher, & B. Clarke (eds.), *Educating learners with Down syndrome: Research, theory and practice with children and adolescents*, 381-402. New York: Taylor & Francis
- Gilmore, L., Cuskelly, M., & Purdie, N. (2003): Mastery motivation: stability and predictive validity from ages two to eight. *Early Education and Development*, 14, 411-424. [doi:10.1207/s15566935eed1404_2].
- Gilmore, L., Islam, S., Younesian, S., Bus, E., & Józsa, K. (2017): Mastery motivation of university students in Australia, Hungary, Bangladesh and Iran. *Hungarian Educational Research Journal*, 7(2), 178–191.
- Goldsmith, M. Koriat, A. Eliezer, A. (2002) Strategic regulation of grain size in memory reporting. *Journal of Experimental Psychology, general*, 131 (1), 73-95.
- Morgan, A, G (1992): Individualized Assessment of mastery motivation: Manual for 15-to-36-month dol children.
- Morgan, G, A, Harmon RJ and Maslin-cole, C.A. (1990): Mastery motivation definition and measurement early education and development, (1), 318–339.
- Morgan, G. A., Bartholomew, S., Barrett, K. C., Busch Rossnagel, N. A., Knauf, D.E., & Harmon, R. J. (1998): An update on the Dimensions of Mastery Questionnaire (Summary). *Programs and Proceedings of the Developmental Psychobiology Research Group Retreat*, 10, 10-11.
- Morgan, G. A., Liao, H.-F., Nyitrai, A., Huang, S.-Y., Wang, P.-J., Blasco, P. M., Ramakrishnan, J., & Józsa, K. (2017) : The revised Dimensions of Mastery Questionnaire (DMQ 18) for infants and preschool children with and without risks or delays in Hungary, Taiwan, and the US. *Hungarian Educational Research Journal*, 7(2), 48-67.
- Morgan, G. A., Maslin-Cole, C. A., Bringer, Z., & Harmon, R. J. (1991): Playing an assessment of mastery motivation in infants and young children. In C. E. Schafer, K. Gilpin, & A. sandgrund (eds.), *play diagnosis and assessment*. New York: john Wiley.
- Morgan, G., Hwang, A., Wang, P., & Liao, H. (2013): Individualized Behavioral Assessments and Maternal Ratings of mastery motivation in Mental Age-Matched Toddler With and without Motor Delay. *Physical Therapy*, 93(1), 79-87.
- Mueller, C.M.& Dweck, D.C. (1998): Praise for Intelligence Can Undermine Children's Motivation and Performance. *Journal of Personality and Social Psychology*. 75(1): 33-52.
- Nelson T. (1996): Consciousness and Metacognition. *American Psychologist* 51 (2), 102 - 116.

Appendix (1)
Mastery Motivation Scale in Its Final Form

Dear student

You have a set of items that express your opinion, so please read the items carefully and respond to them objectively so that they really reflect how you feel about these situations.

It should be noted that there is no right or wrong answer, the correct answer is what agrees with your opinion and your actions towards the situations you are going through. Thus, please mark your choice on the answer sheet by placing (✓) under the choice that you consider appropriate, and which expresses your point of view. Note that your answer is used for scientific research purposes only and there is no need to mention your name or any other data.

An example of how to answer

s	Item	so typical	typical	somewhat typical	not typical	not at all typical
1			✓			

Thanks, and appreciation for your kind cooperation

Gender: male () female ()

Specialization: Humanitarian () Scientific ()

s	Item	very typical	typical	somewhat typical	not typical	not at all typical
1	I insist on continuing to work on a task despite its difficulty.					
2	If I fail a difficult task, I can gain the experience needed to try to do it again.					
3	I try new skills over and over until I'm convinced.					
4	I'm working on a new challenge until I feel I can master it.					
5	I am trying to handle tough tasks even if I am not sure about inability to do it.					
6	I like to build on my existing skills even if it is difficult for me.					
7	I prefer to challenge myself with difficult tasks even if I am not sure I will be able to complete them.					
8	I Look for every avenue available to solve a problem.					
9	I love taking challenges when it comes to learning new skills.					
10	I find challenging tasks more interesting than easy ones.					
11	I find pleasure in the challenges presented by difficult tasks.					
12	I choose to perform tasks that I think will be challenging for me.					
13	I feel proud when I am successful.					
14	I get excited when I realize I have made progress on something difficult.					
15	I feel like I have accomplished something when I have done something difficult.					
16	I start enjoying challenging tasks as soon as I start discovering new skills.					
17	I master the things I do.					
18	I find a quick solution to the problems.					
19	I believe that I have the skills and abilities to accomplish the challenges that face me.					
20	I have a strong desire to inquire about new topics.					
21	Time passes quickly when a difficult task is completed.					
22	It takes a lot of time when I am busy with a challenging task for me.					
23	He insists on continuing work on a difficult task and for long periods of time.					
24	I can be occupied with tasks that lead to the development of my skills.					