

Development and Validation of Wisdom Scale for a Sample of University Students in Gaza

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Abstract--- *The present study attempts to examine the structure and examine psychometric properties of wisdom scale for a Sample of University Students in Gaza .The study questions addressed are: What is the structure of the measure of wisdom for university students in the Gaza? Is the wisdom scale have has appropriate psychometric properties? A total of 170 students From Al-Quds Open University and Al-Aqsa University in Gaza completed the scale of wisdom, including males (N= 100) and females (N= 70).The students ranged in age from 18 to 22 with an average age 20.7 and S.D. 2.1. Exploratory factor analysis (EFA) is used. The results indicate that The structure of wisdom is multidimensional which includes: Emotional Stability, psychological resilience, persuasion skills, and the fourth is problem solving skills. And the scale has appropriate psychometric properties.*

Keywords--- *Wisdom Scale, Reliability, Validity, Factor Analysis.*

I. INTRODUCTION

The present century is the age of positive psychology, and wisdom considered an important concept in this area , to many positive affects at adjustment and mental health to individuals, positive psychology emphasizes at the positive human forces, in which interest has grown in the recent times (Shorey, Littl, Snyder, Kluck & Robitschek, 2007).

Wisdom is one of the concepts inherent in different civilizations throughout the ages, and researchers have dealt with it in psychology, and this attributes to the importance of wisdom, on the individual and group level. Scientists agree that wisdom is one of the most important psychological variables, and access to it makes a person in a state of psychological highness, and lead to a state of balance between the spiritual and mental aspects of the human being, and the acquisition of wisdom is one of the supreme human goals of the human being (Solansky, 2013).

Wisdom is an independent and inevitable process, which requires levels of perception and in particular human moral and ethical programs, and is considered a human condition in Offspring require the presence of the soul, because it lies in the heart as much as in the mind (Cooper , 2017).

Wisdom has been associated from ancient times with scientists and people with high mental abilities , and scientists have considered it an ideal feature that distinguishes humans, and the concept of wisdom has been used through two main branches: implicit theories that reflect the point of view of individuals, and theories that reflect the

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view of scientists to the concept of wisdom, and is considered a program Sternberg is one of the most popular programs that seeks to provide students with educational contexts that help them understand wise thinking skills to make them able to make important decisions in their lives (Sternberg, 2009).

Experimental research has found a relationship between wisdom and age, where wisdom begins to grow within the individual in childhood with the existence of some attributes related to wisdom such as assistance, cooperation and empathy, and these are characteristics of the wise person, and the behaviour develops with the development of the age group as features appear in adolescence such as knowledge based on experience, Abstract and deductive thinking, self-reflective thinking, and openness to experience (Webster, Weststrate, Ferrari, Munroe & Pierce, 2018).

Therefore it is believed that it usually results from years of accumulated experience in life, and in this context, therefore the concept of wisdom often evokes a stereotype of the "old wise man." (Weststrate, Ferrari, & Ardelt, 2016). Although older people bring previous experience, knowledge, and values to students in the classroom, students' participation in sustainable adult experiences offers them new opportunities to learn and cultivate interpersonal relationships and skills, such as leadership, ability to mentor, in addition to academic and personal development for them through these new experiences and information, and this is an opportunity to improve, correct and update knowledge about the pragmatism of life, at the same time, the acquisition and modelling of these social skills such as cooperation, responsibility, compassion and control, may benefit the younger generation as well, and potentially put them on the path of growth towards wisdom. (Parisi, Rebok, Carlson, Fried, Seeman, Tan, Tanner & Piferi, 2009).

Wisdom is a complex concept and difficult to define except that it was considered the highest level of human development, wisdom is defined as an ideal integration, and a high level of harmony between mind and personality, , and wise men are supposed to have many positive qualities, such as mature and integrated personality, high judgment skills in difficult life issues, ability to deal with life's ups and downs, creativity and altruism. (Bergsma & Ardelt, 2012).

Staudinger & Gluck (2011) defined wisdom as knowledge of people's conditions and life and how to behave in the context of their ambiguities and complexities. While (Takahashi & Overton, 2002) defined it as a skill that appears to the student to enable him to face the problems of life and the ability to solve them, and the ability to evaluate solutions and make judgments, while Brown (2000) defined it as the ability of a student with a level of wisdom to see the essence of the problem And providing solutions to solve them, while (Webster, 2007) defined them as the ability to make decisions and solve problems faced by them and apply life experiences to self-development. It was a level of integration between the emotional, cognitive and contemplative dimensions that confirm the maturity of personality, which is like personality. The vehicle is associated with mature maturity (Ardelt, 2003).

As for (Sternberg, 2009) it is the individual's use of his cognitive, mental, and creative abilities to achieve the desired goal, and to achieve a balance between his goals and personal benefit, and the goals and benefits that accrue to society, (Rowley, 2006) defined it that it is the individual's ability to distinguish the information obtained, and

choose including what contributes to his happiness, knowledge of the conditions of people and life, how to behave in the context of its ambiguity and complexities, the individual's experience to arrive at the meaning of life, his ability to make decisions and solve problems, and his determination to apply life experiences to self-development.

Researchers defined wisdom in this research: it is the extent of the student's knowledge of himself and his ability to control his emotions in acute situations and his ability to solve problems facing him and make decisions, and the ability to adapt to the requirements of life.

Definitions of wisdom were agreed in five main aspects: Wisdom refers to knowledge or experience , and indication of age, it is related to performance in middle age and beyond , it indicates the ability to make decisions, and right judgment , It indicates a balance between personal and non-personal interests , It indicates the rise and maturity of the character.

Studies show that people's ability to think wisely varies greatly across experimental contexts, with wise thinking differing from one situation to another according to balanced self-behavioral responses in areas of life, especially in difficult problems and situations (Grossmann, 2017). Philosophers and psychologists have unanimously agreed that wisdom involves certain aspects of thinking, allowing the individual more knowledge of life's challenges, and people's ability to think wisely may vary greatly across experimental contexts with wise thinking differing from one situation to another (Grossmann, 2017) . Wisdom is also associated with many adaptive psychological and social features, including positive values, mature personality traits, such as decision-making, successful personal relationships (Webster, et al, 2018).

Wisdom is considered a fruitful and important topic for the psychological side for two reasons: First: to continue and increase the cultural development of the human condition. • Second: It embodies a cooperation between the cognitive and the emotional side. So researchers took an interest in it and described it as a feature of the mind and spirit, and it is a kind of knowledge that affects the thinking of a wise individual, and wisdom is inseparable from decisions that are taken in reality, and it is not just a matter of what goes on in one's mind, but wisdom how can Use it to make the right decisions and judgments, and this is linked to the individual's perception. Interest in the field of wisdom in educational psychology has increased in the past two decades, and researchers have also been interested in measuring wisdom, as there have been numerous studies that have dealt with the psychometric properties of wisdom, (Moraitou & Efklides, 2012) (Glück, König, Naschenweng, Redzanowski, Dorner, Straßer & Wiedermann, 2013) (Thomas, Bangen, Ardel & Jeste 2015).

The measurement of wisdom were classified into two different parts, the first the form of self-report measure (Ardelt, 2003, Webster, 2003, Levenson, 2005), and the other the form of a performance list (Berlin, 2000) where verbal responses were collected on situations that require wisdom . (Glück, et al, 2013).

In spite of the multiplicity of measures in the field of wisdom, they differed in terms of dimensions, some of them relied on three dimensions (such as the cognitive dimension, the emotional dimension, the reflective dimension), and it was addressed the personality of the wise person (practical wisdom, dialectical thinking), and from whom he addressed eight dimensions to wisdom (persuasion, problem solving, emotional equilibrium, good judgment, tendency to virtue, openness to experiences, self-reflection, while(Sternberg,1990) identified wisdom in

six dimensions: ability, intelligence, learning, integrity of opinion, and capacity to use information and unity of mind.

Two measures of wisdom Ardel's 3 dimensions of Wisdom Scale, and the Webster Scale is also designed to measure the non-cognitive components of wisdom to assess five components: life hazards, experiences, memories of the past, life reflection, openness to experiences, emotional organization (Ardelt, 2011). There is still a debate about the basic components of wisdom, and how to reach it.

Akbari, Hashemi & Kenari (2016) studied the psychometric properties of the Schmit, Muldoon and Ponders scale of wisdom, the Persian version, and the study sample was (278) student from Mazandaran University. Experiences, interaction with others, moral awareness, possession of experience is applicable to the sample population and has good psychometric properties.

Thomas et al., (2015) examined the psychometric properties of the triple wisdom scale, where he examined wisdom through (the cognitive component, the emotional component, and the reflective component), a sample of 1546 adults, the study results showed the scale have a good validity and reliability.

Glück et al., (2013) studied The psychometric properties of wisdom have been through four different measures. Staudinger (2000) Ardel (2003), Webster (2003), Levenson (2005), The sample consisted of (47) university students from Austria, and types of wisdom were identified (personal wisdom, general wisdom, and other types of wisdom), and the results also demonstrated that the Webster scale consists of five dimensions of openness, emotional organization, humor, critical life experience, and remembering.

Moraitou & Efklides (2012) examined the psychometric properties of the wisdom scale, and analyzed the relationships between wisdom and demographic factors and the study sample was 446 adults, a wise thinking questionnaire was used, the results showed good psychometric properties of the wisdom scale.

Through previous studies, there had been multiple measures of wisdom and dealt with multiple age groups and multiple cultures, but the researchers differed in determining the dimensions, researchers attempts to preparation an appropriate measure of wisdom among university students on the Palestinian environment, characterized by a good psychometric properties. The present study attempts to examine the structure of wisdom among university students on the Palestinian environment, and the study problem can be formulated in the following questions:

What is the structure of the measure of wisdom for university students in the Gaza?

Is the wisdom scale have has appropriate psychometric properties?

II. METHODOLOGY

To answer the study questions for this study, it was necessary to Prepare an appropriate scale of wisdom, participants were identified, and completed the instrument during 2019-2020. Finally, the data collected were combined and analyzed.

Participants

A total of 170 students From Al-Quds Open University and Al-Aqsa University in Gaza completed the scale of

wisdom, including males (N= 100) and females (N= 70).The students ranged in age from 18 to 22 with an average age 20.7 and S.D. 2.1.

Instrument

The scale consists of 41 items and had four dimensions, (Emotional Stability): the student's ability to control his emotions, deal flexibly and narrate with different emotional situations, and make the individual more happy, calm, self-confident, and stable for the mood. (Psychological Resilience) the student's ability to face the pressures he is exposed to, control his emotions, his ability to solve problems, adapt to customs and traditions in society, and openness to others. (Persuasion skills) is the student's ability to influence the opinions of his colleagues, and the ability to change their thoughts and attitudes, the process of influence and persuasion depends on the experience and personality of the persuasive individual. (Problem solving skills) the student's ability to deal with the problems and situations of daily life to reach his goal, where the student sets a set of solutions and chooses the best ones according to scientific and logical steps. The scale was prepared depending on measures in wisdom, such that wisdom scale (San, Diego, 2012), wisdom evolution scale (Brown & Greene, 2006), the triple wisdom scale (2003 Ardel), wisdom scale (Webster, 2003), psychometric flexibility scale (Connor-Davidson, 2003), wisdom Scale (Silgman, Peterson, 2002) , Scale of Balance in Wisdom Sternberg (1990). The scale is considered to be a self-report type for which are answered in the each item 5 items using 5 point Likert response scale, ranging from 5- strongly agree to 1- strongly disagree..

III. RESULTS

Exploratory Factor Analysis of Wisdom Scale

Dimensionality of factors of wisdom construct was assessed by using exploratory factor analysis., the purpose of factor analysis (FA) is closely aligned with the development of new scale since factor analysis helps researchers to understand the latent factors or constructs that account for the shared variance among items” (Worthington &Whittaker, 2006). Exploratory factor analysis (EFA) is a technique for data exploration that determines the structure of factors to be analyzed. EFA of the wisdom scale was carried out the sample, to establish a parsimonious set of factors.

Using SPSS software, Exploratory Factor Analysis reduced the wisdom construct into a clearer factor structure (Hair, Anderson, Tatham & Black, 1998) and identified items with common variance (Rossiter, 2002). Prior to conducting EFA, Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett test of sphericity were performed. For the factor analysis of wisdom related items, Kaiser-Meyer-Olkin measure value fell in the acceptable range (above 0.50) with a value of 0.7366. The observed significance level of Bartlett's test result was 0.000.

Following Bearden, Hardesty & Rose (2001) suggestion, the statistical criteria that were taken into consideration for item retention in this stage were corrected item-to-total correlations above 0.35 and factor loadings above 05 (0.4 was acceptable in this study, De Vellis 2003). Based on the above criteria, all of the 41 items were retained for EFA together using the principle component analysis followed by Varimax rotation method. Table 1 shows the result of item to total statistics.

Table 1: Corrected Item-Total Statistics

<i>Item</i>	<i>Scale Mean if Item Deleted</i>	<i>Scale Variance if Item Deleted</i>	<i>Corrected Item-Total Correlation</i>	<i>Cronbach's Alpha if Item Deleted</i>
item1	150.41	231.272	.246	.835
item2	149.42	235.440	.314	.833
item3	150.18	228.300	.392	.831
item4	150.20	226.007	.452	.829
item5	150.14	228.851	.394	.831
item6	150.45	227.314	.367	.831
item7	150.11	228.296	.458	.829
item8	150.16	227.405	.408	.830
item9	150.08	226.964	.446	.829
item10	150.21	227.466	.437	.829
item11	149.89	232.214	.296	.833
item12	149.88	235.872	.226	.835
item13	149.76	232.950	.349	.832
item14	149.95	225.506	.501	.828
item15	150.23	229.148	.365	.831
item16	150.11	229.555	.362	.831
item17	149.91	226.128	.529	.828
item18	150.23	227.243	.414	.830
item19	150.21	234.366	.188	.836
item20	150.03	226.372	.447	.829
item21	150.09	241.217	.446	.828
item22	150.68	232.481	.193	.836
item23	151.03	236.952	.080	.840
item24	151.29	231.591	.248	.835
item25	151.14	231.542	.225	.836
item26	151.05	234.069	.190	.835
item27	149.85	230.469	.375	.831
item28	151.45	234.640	.192	.836
item29	149.91	230.341	.401	.831
item30	151.33	229.240	.344	.832
item31	150.15	233.759	.240	.834
item32	150.15	233.326	.218	.835
item33	150.15	229.937	.319	.832
item34	150.11	231.137	.353	.832
item35	151.96	250.034	.353	.832
item36	150.05	232.826	.255	.834
item37	150.15	230.919	.353	.832
item38	149.85	230.947	.382	.831
item39	149.85	229.570	.440	.830
item40	150.02	229.301	.354	.832
item41	149.85	225.262	.517	.827

The idea of rotation is to redefine the factor loadings to obtain simple structure, where each factor should have indicators with strong loadings and each indicator should load strongly on only one factor. Orthogonal rotation is used when factors are assumed to be or unknown to be uncorrelated (Gorsuch, 1983; Thompson, 2004). For the wisdom scale, the underlying factors are expected to be uncorrelated, and hence, orthogonal rotation is preferred.

The first factor captures the items of Emotional Stability. The second factor captures Psychological Resilience, and the third is Persuasion skills, and the fourth is Problem solving skills. Factor loadings less 0.40 were dropped. Thus, 6 items from the original 41 scale items were dropped resulting in a 45-items scale.

Table 2: Rotated Component Matrix

<i>Item</i>	<i>Item Loadings</i>				<i>Crorbach's Alpha of factors</i>	<i>% Variance Explained by factors</i>
	<i>Factor 1</i>	<i>Factor 2</i>	<i>Factor 3</i>	<i>Factor 4</i>		
I control myself and my desires in all situations.	.603				0.81	10.47
I tolerate discussion and argument with others without being nervous.	.595					
I feel nervous when I wait for the results of my exams.	.586					
I regain balance after experiencing a traumatic situation by my colleagues.	.580					
I can control my emotions when others hurt my feelings.	.564					
I feel inner calm and reassuring.	.561					
I am characterized by emotional stability in dealing with my university colleagues.	.554					
I feel happy when I face challenging situations.	.530					
I get excited when my colleagues criticize me.	.459					
I have the ability to control my emotions when exposed to difficult situations.	.432					
When I solve any problem, I see it in all aspects.						
I cite facts when convincing my colleagues of an idea.						
I have the ability to easily turn ideas and solutions into action.						
I tend to have humor with my colleagues even in the most difficult of circumstances.		.642			0.78	9.71
I am having difficulty adjusting my behavior to others.		.548				
I adapt to life problems.		.534				
I have the flexibility to deal with the difficulties I face.		.532				
Make a good impression on others.		.519				
Dealing with difficult life situations makes me feel strong.		.500				
I have the ability to make new friends easily.		.471				
I rebel against the customs and traditions prevailing in society.		.467				
Accept the opinions of others without fanaticism.		.465				
I excuse my colleagues if they make a mistake in my right.		.436				
I have the ability to persuade others of positive dialogue.						
I use the attack to control the minds of my colleagues.			.671		0.79	8.26
My ability to persuade is weak in front of others.			.669			
I have the ability to negotiate positions to find a good solution.			.646			
I imagine that I have an influential position in society.			.640			
I feel that others trust my opinions.			.631			
I choose the right time to persuade others of an idea.			.612			
Make sure to choose words that are appropriate for the feelings of others.			.494			
I consider myself a convincing person.						
I analyze the causes underlying any problem I encounter.				.611	0.77	7.79
I consult with others to collect different solutions to my problem.				.596		
I have the ability to face difficult situations according to an advance plan.				.591		
I choose the best solution to my problem without hesitation.				.568		
I help my colleagues find solutions to their problems.				.515		
I think about the results of solutions in the long run.				.512		
I am thinking logically to find a solution to my problem.				.481		
I make sure to postpone the solution to any problem I face.				.432		
I get excited when I encounter a problem that hinders me from thinking.						

As the wisdom scale is multidimensional, Cronbach's Alpha was assessed for each dimension (Hair, et al., 1998). The corresponding Cronbach's Alpha of these factors are all at an acceptable level of ranging between 0.75 and 0.81, whereas Cronbach's Alpha of the wisdom scale is 0.84 indicating high reliability. Table 2 shows the detailed grouping of the items, corresponding loadings on wisdom scale, Cronbach's Alpha of each factor, percentage variance explained by each factors.

Factor1: Emotional Stability

Ten items load on this factor. They correlate strongly, and they have a Cronbach's Alpha of 0.81. This 9-item factor explains 10.47% of the variance, and is the strongest of the four factors in terms of contribution to the formation of the of wisdom scale. These items have a common conceptual thread among them, which relates the student's ability to control his emotions, deal flexibly and narrate with different emotional situations, and make the individual more happy, calm, self-confident, and stable for the mood.

Factor2: Psychological Resilience

Ten items are included in this factor. They correlate strongly, and they have a Cronbach's Alpha of 0.78. This 7-item factor explains 9.71% of the variance.. These items have a common conceptual thread among them, which relates to the student's ability to face the pressures he is exposed to, control his emotions, his ability to solve problems, adapt to customs and traditions in society, and openness to others.

Factor3: Persuasion Skills

Eight items are included in this factor. They correlate strongly, and they have a Cronbach's Alpha of 0.77. This 8-item factor explains 7.79% of the variance. These items have a common conceptual thread among them, which relates to) the student's ability to deal with the problems and situations of daily life to reach his goal, where the student sets a set of solutions and chooses the best ones according to scientific and logical steps.

Factor4: Problem Solving Skills

Seven items are included in this factor. They correlate strongly, and they have a Cronbach's Alpha of 0.79. This 7-item factor explains 8.26% of the variance. These items have a common conceptual thread among them, which relates to the student's ability to influence the opinions of his colleagues, and the ability to change their thoughts and attitudes, the process of influence and persuasion depends on the experience and personality of the persuasive individual

Reliability and Validity Tests

As Hinkin (1995) noted, reliability is a pre-condition for validity. For reliability, the internal consistency of these constructs was established through its Cronbach's alpha. Cronbach's alpha measures the degree in which the responses are consistent across items within a single measure. A guideline of what is acceptable is: reliability coefficients around .90 are "excellent", values around .80 are "very good", and values around .70 are "adequate" (Kline, 2005). Reliability of each dimension was estimated by calculating Cronbach's alpha value. The Cronbach's alpha values for all dimensions ranged from 0.77 to 0.81. Cronbach's alpha of the wisdom scale is shown to be 0.84, which shows high reliability.

IV. CONCLUSION

The aim of this study was to prepare and examine the psychometric characteristics of the wisdom scale for university students in Gaza, and the results of the study concluded that the scale has validity and high reliability for the study sample

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