Cognitive independence of kindergarten students

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Abstract---The current research aims to identify the cognitive independence of kindergarten students. Where the researcher prepared a scale to measure cognitive independence, where the measure of cognitive independence in its final form consisted of (60) items, and this scale was applied to a sample of (400) female students from the Kindergarten Department at the College of Basic Education at Al-Mustansiriya University, which were chosen randomly. Verification of the scale's validity and stability by extracting the validity by the method of apparent validity and construction validity.

Keywords---cognitive independence, kindergarten students.

Research problem

Attention to human wealth has become one of the inevitable necessities for the progress and advancement of modern societies, as each society seeks to direct its human resources in the best direction, and invest the energies of its children in the best possible investment. Among the elements of society, there are distinguished individuals with unique characteristics that are evident in their higher levels of performance than that of their ordinary peers (Hamad, 2018: 1). The study of cognitive methods that distinguish individuals in their interactions in different life situations is a reliable basis with a large degree of accuracy and prediction of performance patterns and behavior of individuals in life situations and in the interpretation of many aspects of personality (Belaid, 2015: 19).

Witkin looks at the cognitive style as a factor or dimension that overlaps with several areas of personality, whether the cognitive domain, including the processes of cognition, thinking, remembering and solving problems, or what is related to the emotional domain, and what it includes of personality traits such as

self-esteem, self-efficacy, and self-concept (Anwar Al-Sharqawi, 1995). Low cognitive independence is one of the problems that they may face and affect their behavior during the learning process and in determining their abilities to keep pace with the scientific developments that occur at the present time, hence the problem of the current research in answering the following question: Is there cognitive independence among the students of the kindergarten department. From the foregoing, the problem of the current research is summarized by answering the following question: Is there cognitive independence for the kindergarten students?

The importance of the research

The concept of cognitive independence gains its importance from being a developmental task that helps individuals manage their lives and enables them to make positive decisions, and when individuals feel that they are independent, they will be more motivated and integrated with the world around them. Self-reliance in adolescence, which leads individuals to make important decisions in adulthood in a smooth manner, it is necessary to support the cognitive independence of adolescents and young people, and encouraging them to work independently leads to positive results on the individual as studies confirm the impact of cognitive independence on his general intelligence, and his ability to Open-mindedness and analysis (Brandley, 2008: 12). Beckert (2005) explains the reason why cognitive independence and self-evaluation are important because it facilitates making decisions about an individual's life. He defines it as the individual's ability to think for himself (Beckert, 2005: 324).

From the foregoing, the researcher can determine the importance of her research by the following points:

1) The current research deals with concepts related to the cognitive structure of kindergarten students, and social and cognitive forces that can push them to adapt.
2) The current research includes tools for measuring variables related to the developmental aspects of female students that can be used in surveys and developmental studies.
3) The current research deals with the cognitive aspects of the concept of independence, as most of the previous research focused on the emotional and behavioral aspect of independence, and even the research that dealt with independence from a cognitive point of view, it dealt with independence as a cognitive method in the perspective of dependence and independence from the cognitive domain.
4) The results of the current research present a realistic picture of the nature of the sources of identity among the students of the Kindergarten Department at the university in light of the intellectual, political and media openness witnessed by the Iraqi society after the events of 2003, with its positive and negative aspects.

Research Objectives: The current research aims to identify the cognitive independence of the kindergarten students.

Research limits: The current research is limited to the students of the Kindergarten Department in the College of Basic Education at Al-Mustansiriya University for the academic year 2021-2022.

Define terms

Cognitive Autonomy, defined by:

- ❖ Beckert (2007): The individual's ability to think for himself and judge himself by himself, and it includes five dimensions: decision-making, evaluative thinking, expression of opinion, balancing opinions, and self-evaluation (Beckert, 2007: 579-581).
- ❖ Sternberg (1999): The ability to think, feel, make decisions, and act alone. The growth of independence is certainly a critical component of becoming independent, but autonomy means more than just acting independently (Steinberg, 1999: 276).
- ❖ Theoretical definition: The researcher adopted the definition of (Beckert, 2007) as a theoretical definition, because his theory will be relied on in building a measure of cognitive independence.

The researcher defines procedural cognitive independence as the total score that the student obtains from her answers to all the items of the scale.

Cognitive independence

The origin of the word autonomy is derived from the Latin word (autos), which means self, and the word (Nomos), which means rule, and therefore most practical definitions of independence are an attempt to clarify the ability of the individual to govern himself by himself (Beckert, 2007: 579). The word independence in the psychological concept means multiple forms, and it may be generalized to include self-reliance in the sense of (independence), which is the ability to make decisions independently of others, and both (Cisia and Sternberg, 1991) called it self-reliance, which is the individual's belief in his ability to control In the course of his life and his feelings without social support from others in it (Sessa & Steinberg, 1991: 36).

Beckert's model of cognitive independence

Beckert (2005) argues that there are aspects of cognitive independence that can be identified separately from behavioral independence and emotional independence such as: making informed and independent decisions, expressing appropriate opinion, weighing the influence of others on thinking, considering consequences, self-evaluation practices and through his research On the subject of independence, he presented the term cognitive independence as a more comprehensive alternative to the terms behavioral and emotional independence or as a complement to them because he was convinced that they include cognitive elements, and that they are insufficient to express the cognitive aspects of the concept of independence (Beckert, 2005: 13-14).

Previous studies

Previous studies have shown the existence of cognitive independence among adolescents and university students to varying degrees depending on the variable of gender, school stage, social environment, family, method of education, the student's relationship with his parents, as well as his relationship with his colleagues and the degree of expression of opinion in situations that require a student's position.

The research tool is an objective and codified way to measure a sample of behavior, and the choice of the tool is of great importance in identifying the characteristic to be measured (Anastausi, 1976:15), for the purpose of achieving the research objectives, the researcher prepared a cognitive independence scale where the items of the scale were viewed and rearranged to suit the research And the current sample, and after reviewing some studies that dealt with cognitive independence and according to the opinions of experts, the areas of this scale were rearranged to fit the purpose of the scale, as it now consists of five areas.

Psychometric Indicators of the Cognitive Independence Scale, Indicators of Validity and Constancy:

Validity

Validity is related to what the scale measures, i.e. is the scale true by measuring the characteristic that it wants to measure? (Anastasi and Urban, 1997: 148) since honesty is one of the important characteristics in the field of psychometrics, as the honest scale measures what is set up in order to measure it well (Stanley and Hoking, 1974: 101). Apparent honesty is the general aspect of the scale, and it indicates the apparent ability of the scale for what it was developed for, and through the link between the paragraphs with the variable to be measured, and that the content of the scale agrees with its purpose (Anstasi & Urbina, 1997: 148).

After the cognitive independence scale was prepared and its paragraphs were formulated in its initial form of (60) paragraphs, the researcher presented the scale in its initial form to a group of experts and arbitrators in the Department of Kindergarten and Educational Psychology, to judge the validity of its paragraphs in measurement and verification, and to express their opinions and observations for the purpose of correction and evaluation. The paragraphs and their validity and mentioned what they deem appropriate to make any amendment to the paragraphs of the scale that need to be modified, and after all the experts reviewed the paragraphs of the scale and gave their opinions, the researcher analyzed the opinions based on the percentage indicator and the paragraphs that obtained an agreement percentage (80%) were kept) and above, as indicated by previous studies, as this percentage is evidence of the acceptance of the paragraph (Al-Kubaisi, 2010: 265).

In the light of the experts' opinions on the cognitive independence scale, all items were retained, and all the procedures carried out by the researcher are among the methods used to reach what is known as apparent honesty, which is one of the

psychometric indicators that are used to identify the extent of the test's ability to measure the trait that was prepared from order to measure it.

Stability

Stability refers to the consistency of the scores collected from the individuals themselves when the test is re-applied to them in another attempt or other variable conditions, or when individuals are tested with equal or equal items (Anstasi & Urbina, 1997:84), the researcher has performed the reliability procedures as follows:

1) Retest method The reliability coefficient is calculated in this way through the correlation between the scores of a group of female students on the scale after applying it twice and with an interval between the first and second applications (Awda, 1998, 42).
   In order to find out the stability in the current study, the researcher applied the cognitive independence measure to a sample of (40) female students who were chosen randomly. After (14) days, the application was re-applied to the same sample, then the correlation coefficient of the relationship between the first and second applications was calculated, using the Pearson correlation coefficient, as the reliability coefficient extracted in this way was (0.845). It is an acceptable stability coefficient.
2) Cronbach's alpha coefficient of internal consistency: This method depends on consistency in the individual's performance from one paragraph to another. Cronbach derived a general picture of the stability coefficient equation and called it the alpha Cronbach coefficient of internal consistency. He also showed that this coefficient refers to the internal characteristic of the test, which arises from The statistical relationship between the items, as this characteristic indicates that the test is homogeneous, and this means that all items measure one general variable (Travers, 1969: 150) and this method depends on the consistency of the individual's performance from one item to another (Thorndike and Higgin, 79: 1989) to determine the extent of consistency The individual's performance from one paragraph to another, the researcher used the Facronbach equation on a sample of large stability (40), as the value of the stability coefficient calculated according to this method was (0.908), which is an acceptable stability coefficient

Table (1) The reliability coefficient of the cognitive independence scale by the re-test and Facronbach method

stability coefficient		the scale
Facronbach coefficient	exam repetition	Cognitive independence
0.908	0.845	

Statistical analysis of the items of the cognitive independence scale

Ebel indicates that the goal of paragraph analysis is to keep the good paragraphs in the scale (Ebel, 1972: 392). The items that fit the objectives and logical

foundations for which the tool was built, so the item analysis is an integral part of both test reliability and validity (Freeman, 1962: 112-113). They obtained it in the scale. To achieve this, the researcher followed the following steps:

1) Correcting the students' answers on the scale and determining the total score that each student got
2) Arranging the total scores in descending order from the highest score to the lowest score for the scale as a whole.
3) Determining (27%) of the forms with the highest scores (108) and called the upper group, and (27%) of the forms with the lowest scores, which number (108) and called the lower group.
4) Application of the T-test for two independent samples to test the significance of the difference between the average scores of the upper and lower groups. The calculated T-value was considered an indicator to distinguish each paragraph by comparing it with the tabular T-value of (1.96).

Relationship of the degree of the paragraph with the total degree of the scale

The validity of the paragraphs is an indication of their ability to measure the concept measured by the test or scale (Abdul Rahman, 1998: 206), through its connection with an external or internal test, and in the absence of an external test, the total score of the test is better Reliable internal test (Anastasi, 1976: 211), and for the purpose of calculating the correlation of the paragraph's degree with the total score of the scale, the researcher used the Pearson correlation coefficient, where it was found that the value of the critical correlation coefficient at the level of significance (0.05) and the degree of freedom (398) equals (0.098).), and that all the values of the correlation coefficient between the degree of each paragraph and the total score of the scale were statistically significant when compared with the critical value of the correlation coefficient of (0.098).

After the researcher applied the cognitive independence scale to the research sample of (400) students, the results of the statistical analysis showed that the arithmetic mean of the sample members on the scale amounted to (221,250) degrees and a standard deviation of (29,607), and when comparing the arithmetic mean of the sample with the hypothetical average of (180) degrees. At the level of significance (0.05) and the degree of freedom (399), which means that there are statistically significant differences between the mean scores of the sample and the hypothetical mean of the scale, and this difference is in favor of the mean scores of the sample, and Table (2) shows that:

Table (2) The results of the T-test to know the cognitive independence of the kindergarten students

Indication level 0.05	T value		Freedom Degree	hypothetical mean	Standard deviation	SMA	Sample volume	variable
	Tabular	Calculated						
Significant	1,96	27,864	399	180	29,607	221,250	400	Cognitive independence

Accordingly, it becomes clear to us that the calculated t-value of (27,864) is greater than the tabular t-value of (1.96), which indicates the existence of statistically significant differences between the mean scores of the sample and the hypothetical mean of the scale, and this difference is in favor of the mean scores of the sample. Kindergarten students are distinguished by their cognitive independence.

Recommendations

1) Attention should be paid to the process of educational guidance and counseling for female students in order to consolidate their cognitive independence, and to gain insight into the true extent of their abilities, capabilities, tendencies and trends, which encourages them to carry out activities that increase a sense of competence and awareness of independence, which helps to enhance their cognitive independence.
2) Encouraging female students to exercise freedom of expression in a democratic atmosphere and to develop thinking and independence, provided that they take into account modern curricula and teaching methods.

Suggestions

Based on the foregoing and the results shown to us, the researcher suggests the following:

1) Conducting a similar study to the current research on different samples, such as kindergarten teachers.
2) Conducting a study of the relationship of cognitive independence with other variables such as (bearing responsibility, social comparison, quality of life)

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