

PHYSICS AND ITS RELATIONSHIP TO SENSE OF SELF AND SOCIAL INTELLIGENCE AMONG FIFTH-GRADE STUDENTS PREPARATION

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Abstract

Self-awareness is a complex process that involves a person's awareness of himself and his understanding of his thoughts, feelings, and personal characteristics; this feeling goes beyond mere external perception, to include a deep understanding of who a person is, and how he interacts with and is affected by his surroundings. This ability to be self-aware is one of the main pillars in the development of the individual, as it enables him to evaluate his thoughts and behaviors and work to improve aspects of his personal and social life.

Keywords: Sense of self, social intelligence and their relationship to physics achievement.

Introduction

Developing a sense of self contributes to self-confidence and the ability to adapt to challenges, and helps to build healthy relationships with others through a better understanding of personal needs and self-limits. Because this feeling is related to many psychological and social factors, psychological research has been interested in studying the extent to which it affects the lives of individuals, especially mental health, professional success, and general well-being.

Deprivation of the tenderness of parents in adolescence is important because its impact is serious on the adolescent and his psyche and causes him several psychological and social problems, since the adolescent is a member of a family and part of a society, he is a social organism by nature that deals with others around him through positive or negative relationships at times and the fact that the orphan adolescent suffers from psychological problems, including low self-confidence, low self-esteem (Kawashi, 2015, p. 8)

The student's sense of need for knowledge and his awareness of himself are real indicators of his mental health. They contribute to his development and may lead him towards excellence and creativity, thus making him feel happier in his life as a result of the success he achieves. Therefore, we find that the subject of the sense of self.

Many studies and research have been conducted that dealt with the effectiveness of the sense of self and its relationship to many variables. The results of the study of (Abshir, Hajar and Hanish, Hamida, 2023), and the study of (Farhan, Abbas, 2020), and a study (Sahloul, 2005)

that self-awareness and educational achievement are related to self-efficacy. It was found that individuals who have a high level of sense of self have high educational achievement.

Social intelligence is the ability to understand and manage personal emotions and the emotions of others effectively. This type of intelligence is an essential element in building positive relationships and achieving personal and professional success, as it enables individuals to deal with different challenges and situations in a balanced manner. The importance of social intelligence is that it is a scalable skill, which means that people can improve it over time through continuous learning and training.

Social intelligence includes several elements, most notably self-awareness, social control, self-motivation, empathy for others, and social communication skills. By developing these skills, the individual can enhance his ability to make decisions more wisely and effectively and build strong relationships based on mutual understanding and trust. In the modern era, where the need for effective communication is increasing in diverse work environments, social intelligence has become a critical component of success, and a key driver of psychosocial well-being.

❖ **Research problem:**

Investing in the human capabilities of students has become a necessity advocated by all specialists as the human mind is the most profitable investment in preserving the environment and protecting and developing its resources. Hence, the slogans of teaching the student how to learn and how to think have become the most popular (Al-Bawi and Salim 2017, 67).

The idea that the acquisition of knowledge is linked to achievement has led researchers to address poor academic achievement by linking education to the life of the learner, taking into account the psychological state of the learner, forming positive attitudes towards education, and taking into account his circumstances, as well as conducting scientific studies based on scientific frameworks and theories to improve academic achievement for the better (Alyan, 2006; 106-108).

Because the academic performance of students is evaluated only from the knowledge of their level of achievement, it can be considered a basic criterion for determining the academic level of students, and the evaluation of quantitative and qualitative educational output (Al-Bawi and Karim, 2022:83).

The specialized literature stated that the student's need for a sense of self drives them to build a personality characterized by acceptance by others, which is a reason for the student's sense of what he offers through his position relative to others and his attempt to put himself in the front positions among his peers, and enhances his social intelligence. Therefore, the problem of research seems to be that it addressed an important segment of society, and an important aspect in the lives of individuals, as students are exposed to many pressures, and problems that require them to solve, whether psychological, social, or academic, that improve their abilities in different situations to face the pressures and difficulties of life, as well as the school's endeavor to develop social intelligence skills to integrate the student's personality and make him capable of building healthy relationships with fellow students to practice group activities and thus engage in society properly.

Hence, the problem of research is revealing the relationship between the achievement of fifth-grade students in physics and their sense of self and social intelligence.

Therefore, we can identify the research problem in the following main question:

What does the achievement of physics have to do with the sense of self and social intelligence among fifth-grade students?

❖ **Research Objectives:**

This research aims at identifying:

- 1.The level of achievement in physics among fifth-grade students.
- 2.The level of sense of self among fifth graders is scientific.
- 3.The level of social intelligence among fifth graders is scientific.
- 4.The relationship of fifth-grade students' scientific achievement of physics to their sense of self.
- 5.The relationship of the fifth-grade students' scientific achievement of physics to their social intelligence.
- 6.The relationship between sense of self and social intelligence among fifth-grade students.

❖ **Research hypotheses:**

To verify the objectives (4,5,6), the following hypotheses were developed

- 1- There is no statistically significant correlation at the level of 0.05 between the achievement of physics and the sense of self among fifth-grade scientific students.
- 2- There is no statistically significant correlation at the level of 0.05 between the achievement of physics and social intelligence among fifth-grade scientific students.
- 3- There is no statistically significant correlation at the level of 0.05 between a sense of self and social intelligence among fifth-grade students.

❖ **The research limits:**

- 1- Objective limits: They are determined using a self-esteem scale, an achievement test, and a social intelligence scale.
- 2- Human Limits: A sample of fifth-grade students for the academic year 2024-2025
- 3- Time limits: The research was applied in the first semester of the year 2024-2025
- 4-Spatial boundaries: The research was applied in some middle and high schools in the Fallujah district.

❖ **Terms Definition:**

Academic background

Al-Laqani and Al-Jamel (1999, p.58) define it as "the extent to which students understand what they have gained from certain experiences through courses of study and is measured by the degree to which students obtain in the achievement tests prepared for this purpose."

Hassan Shehata, et al. (2003, 89) defined it as "the amount of information, knowledge or skills obtained by the student, expressed in grades in the test prepared in a way that the specified levels can be measured."

Procedurally, the researcher defines it as the amount of grade obtained by the fifth-grade student in the achievement test in the physics course prepared by the researcher for this research.

- Self-feeling:

Buss (1980, P5) defines it as the trait that refers to the tendency of the individual to the inner aspects of himself, and not shared by the selves of others.

Webster (1981, P22) defines mental perceptions of one's self.

It is the student's focus on his thoughts and feelings, his interest in the opinions of others, and his feelings of distress and tension when interacting with others.

The researcher agrees with the definition (Webster, 1981, 22) and defines it procedurally as "the set of mental perceptions of the fifth scientific student about himself measured by the total score of his answer on the paragraphs of the self-esteem scale.

Social Intelligence :

Hassan Shehata, et al. (2003,189) defined it as the ability to understand people, men, women, girls, and boys. This means that social intelligence deals with interactions with humans, such as the ability to make judgments in social situations, the ability to know the psychological state of surrounding individuals and deal fruitfully with them, the ability to observe and benefit from human behavior, the ability to remember names and faces, and the like.

Goleman (1995) defines it as "the ability to recognize our own and others' feelings, motivate ourselves, and manage our emotions well in our relationships."

Mohamed Taha (2006,234) defined it as "the ability to recognize the intentions, feelings, and motivations of others.

The researcher defines it procedurally as "the ability of the fifth scientific student to determine his feelings towards others through the total score of his answer to the paragraphs of the social intelligence scale.

Theoretical Background:

The researcher will review some theoretical information and previous studies on agency research variables:

1. Sense of self

Since ancient times, man has tried to explain his behavior and the behavior of others around him, relying on his beliefs, ideas, natural phenomena, and others.

Researchers have confirmed that the sense of self is formed and develops through the stages of life that the individual lives and exercises his experiences in it, and that self-awareness begins slowly when the individual interacts with his environment ⁽¹⁾, and that he becomes

⁽¹⁾ Sawalha, Muhammad, and Ahmed Youssef Qawasmeh; Differences in self-concept among a sample of children of working and non-working mothers in Jordan. C 1 No. 6: Journal of Educational Research, 1994, p. 80.

stable and stable since late childhood, and that progress in development leads to an increase in stability, and the individual's concept of himself becomes more resistant to change⁽²⁾.

The sense of self consists of different dimensions and domains, and we list below the dimensions of the sense of self as defined by the Tennessee Self-Concept Scale⁽³⁾.

1- The body self: It is the one in which the individual establishes his point of view about his body, health condition, external physical appearance, skill, or gender.

2- Moral Self: Describing the self from the point of view of the moral frame of reference, moral values, relationship with God, the individual's sense of existence in terms of being a bad or good person, or the individual's satisfaction with or lack of religion.

3- Personal Self: This dimension reflects the person's sense of his value (self-worth) the extent of his sense of competence or validity of his status as an individual, and his evaluation of his personality away from his body or his relationship with others.

4- Family Self: This dimension reflects the individual's sense of validity, value, and ability as a member of a family, and this is a reflection of the individual's self-awareness by referring to those close to him and those around him.

It is also the idea of the individual as a member of the family, the extent of his adaptation to it, and his belonging to it.

5. The social self: It is another dimension of the self and its relationship with others, but in a more general way, and reflects the sense of validity and value of the individual in his interactions with others in general.

6- Self-criticism: This dimension reflects the individual's ability to perceive weaknesses in himself.

7-The real self: It is the one in which the individual describes himself as realistic, what is he as he sees himself?

8- Self-acceptance: It is the one in which the individual describes his feelings about himself that he is aware of, and in general this dimension reflects the level of self-satisfaction.

9- Cognitive Self: The individual's awareness of his behavior or how he behaves.

2-Educational attainment:

Academic achievement is one of the most common concepts not only in the study, but in all productive, cognitive and agricultural circles, but it is one of the most important and most used scientific circles in the field of education, because it has an important aspect as the compulsory way to choose the type of study that the individual will undertake, the social status that he will achieve, his outlook for himself, his sense of success and his level of ambition.

Educational attainment has received many and varied definitions by psychologists and educationalists. Allam (2000, 33) defined it as "the amount of acquisition that the learner

(2) Swain, M. Richard; Psychopathology. Translated by Ahmed Abdel Aziz, Cairo: Dar Al-Nahda Al-Arabiya, 1979, p. 365

(3) Muhammad Hassan Allawi, Muhammad Nasr al-Din Radwan; psychological and skill tests. Cairo: Arab Thought House, 4th edition, 1987, p. 633.

obtains from the information, knowledge or skills expressed in test scores that determine his level of success in a subject or educational field."

Al Masood (2005, 2) defined it as "a set of knowledge, information, abilities and skills that are acquired within the school".

Education:

There are several characteristics of educational attainment:

- 1- Educational attainment is characterized as the content of the curriculum of a particular subject or group, each of which has its knowledge.
- 2- Educational attainment is usually shown by answers to written or oral quarterly tests.
- 3- Educational achievement is concerned with the achievement of the majority of ordinary students.
- 4- It is based on the use of standardized collective tests, methods, and standards in the issuance of evaluative judgments. (Abshir, Hajar, Hanish, Hamida, 2023, 220).

The importance of academic achievement:

Educational achievement is of great importance in the educational process as it is one of the most important learning outcomes that learners seek. Educational achievement is one of the general areas that have received the attention of parents and educators as one of the educational goals that seek to provide the individual with science and knowledge that develops his perceptions and gives way to the personal field to grow properly. It also satisfies the psychological needs that students seek and does not satisfy this need, as it leads to a sense of frustration that produces disturbances in the school system. Its importance also lies in the educational process as it measures the efficiency of the educational process and its efficiency in developing the various skills and abilities available in society, which also brings the individual to a good level that instills confidence in himself.

Factors Affecting Academic Achievement

(Abshir, Hajar and Hanish, Hamida, 2023, p.221), (Sahloul 2005) mentioned several factors that affect the student's educational achievement, which are as follows:

Factors related to the individual (subjective):

- a. Intelligence: It is one of the important subjective factors in educational achievement that some educators consider a test of achievement or excellence.
- b. Physical characteristics: Physical factors and the individual's hearing and visual impairments that hinder communication often result in bullying from others and thus create hatred and aversion to school.
- c. Psychological and emotional traits: Poor self-confidence, fear, anxiety, shyness, and psychological disorders hurt achievement and cause introversion, rebellion, and anger.

Factors related to the environment

- a. Teaching methods: If the teaching methods of dialogue and discussion are appropriate and the classroom prevails in an atmosphere of tolerance and democracy, and an integrated

atmosphere between the teacher and the learner, the result is positive and good at the level of educational achievement of the student.

b. Parental guidance and educational level: Parental attitudes have a great impact on the superiority and success of their parents, and the educational level of parents has the same impact; the better the educational level, the better the children's achievement.

c. The economic and social level of the family: The economic level of the family encourages the individual to seek education by providing the means of learning, as well as the social situation affects the educational level of the student.

The researcher believes that educational achievement means the amount of knowledge that the student acquires in the educational process. Achievement is an educational term called the results that the student obtains in school, and appropriate environmental factors must be provided by the family through the school for the level of achievement to reach a high level.

Social Intelligence :

Garden (1995) defined social intelligence as "the individual's ability to perceive social relations, understand people, interact with them, and behave well in social facilities, leading to social harmony.

Areas of Social(Interactive) Intelligence:

His simple level is reflected in the individual's ability to distinguish between the individuals around him, know and accept their nature, make communication relations with them, and simulate the voices and expressions of others, while his complex level is represented in the individual's ability to form distinct relationships with others, understand and accept multiple points of view, adopt mechanisms of participation and social interaction, belonging and participation in social activities and public relations. The level of mastery is represented in reading the motives, intentions, and beliefs of other people, understanding their actions, dealing with them according to knowledge, resolving conflicts, creating consensus within the group, and effectively influencing social life. Indications indicate that the frontal lobes are responsible for this intelligence, and one of its most important areas is:

–The ability to guide human relationships through the skill of knowing others, self-control, including the skill of organization, and the skill of the talent for negotiating solutions. Accordingly, attention to personal manifestations has a certain status, as well as social roles according to different cultural contexts.

–The ability to recognize the feelings of others through two components, the first: social analysis and discovering the feelings of others with a kind of penetrating intuition, and the second: interpersonal relationships and positive effective communication with others (Al-Faqihi, 2012, 97-119).

Characteristics of people with social intelligence:

Both Ambosaidi and Balushi (2011, 104) and Hussein (2005, 35) confirmed that one of the most important features

Social Intelligence :

–Enjoy social interaction with others.

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- Leadership.
 - Advise friends who have issues.
 - Intelligence in the street and the region.
 - Affiliation with other clubs, committees, or organizations.
 - Enjoy non-formal teaching to other children.
 - The love of friendship and others seek to accompany it.
 - Has a good sense of empathy and concern for others.
 - Knowing motives and feelings and influencing others.
 - Sensitivity to tone of voice and facial expressions.
 - Translating gestures, and distinguishing gestures realistically

The researcher believes that social intelligence can be developed among students through teamwork, team spirit, develop communication and social communication skills, and enjoy social interaction with others.

The Importance of Social Intelligence

Abdullatif (2023,4) pointed out that social intelligence is no less important than scientific intelligence, but that the need for social intelligence is important everywhere in the world:

- Differentiating between harmful and beneficial. A person may not be hypocritical, but he lacks social intelligence. If a friend complains about his boss and mentions his problem, the stupid person may rush socially with courtesy, and good intention increases his anger against his boss.
- When looking at the conditions of people and making judgments, we must know the nature of human beings and the nature of intertwined social relations.

Social Intelligence:

Al-Aasar and Kafafi (2000) mentioned some behaviors of social intelligence, namely:

- Knowledge of behavioral units.
- Knowledge of behavioral organizations.
- Knowledge of behavioral connotations.

❖ Previous Studies:

The researcher did not find a previous study that dealt with the relationship of academic achievement with a sense of self and social intelligence among students, so she will review some studies that dealt with each of the research variables.

- Study (Abshir and Hanish, 2023): This study aimed to identify the level of self-efficacy in a sample of female students of education and psychology at the Faculty of Education, Misrata University, and to identify the nature of the relationship between self-efficacy and academic achievement in the research sample, and the researchers used the descriptive approach, and the research sample consists of (62) students and the research tool was applied in the questionnaire of self-efficacy and its relationship to the level of achievement, and the research reached a high level of self-efficacy among the students of the Department of Education and

Psychology, and there is a correlation between self-efficacy and the level of academic achievement.

- Sahloul Study (2005): The study aimed to identify the self-efficacy and motivation of academic achievement and their impact on the academic achievement of secondary students in Sana'a City. The researcher used the descriptive and correlational approach. The research sample consisted of (1025) students from the second secondary literary grade. The sample was randomly selected. The researcher used two tools, namely the self-efficacy scale and the achievement motivation test. The study found a statistically significant difference at the level of (0.05) in the student's academic level and the level of motivation for the benefit of self-motivated and high academic achievement.

- Al-Mekhlafi Study (2010): The study sought to identify the effectiveness of the academic self and its relationship to some of the personality traits of students. A field study was conducted on a sample of Sana'a University students. The researcher used the descriptive and correlational approach. The research sample reached (110) students from scientific disciplines, (70) students from literary disciplines, and the application of the academic self-efficacy scale and the clinical analysis scale was conducted. One of the most important results of the research was the existence of a statistically significant correlation between the effectiveness of the academic self and some personality traits, and the existence of differences between the averages and the degree of the sample members in the academic self-efficacy scale for the benefit of scientific disciplines.

- Abdul Latif's study (2023): The study aimed to know the relationship of social intelligence to psychological compatibility among students of the Faculty of Arts and Sciences – Al-Marj. The researcher used the descriptive and correlational approach. The research sample reached (100) students, and the social intelligence scale and the psychological compatibility scale were used. The results showed a statistical relationship between social intelligence and psychological compatibility, and the lack of statistical significance between the average level of males and females in psychological compatibility.

It is clear from previous studies that they dealt with the variable of self-efficacy and its relationship with other variables. They also dealt with the study of the variable of social intelligence and its relationship to psychological compatibility. Here is a study that dealt with the effectiveness of the self with academic achievement. This is what the current research meets with previous studies and benefits from the theoretical framework and the measurement work, which enriched the information for the current research. However, the current research differs from previous studies in dealing with the achievement of physics and its relationship to a sense of self and social intelligence among the research sample, who are fifth-grade scientific students.

❖ **Research Methodology**

To achieve the research objectives and hypotheses, the following was done:

1-Research Design

The researcher used the descriptive approach with the two survey styles and correlational relationships to suit her to solve the current research problem.

2-Research Sample

The current research community was represented by all fifth-grade students in Fallujah Boys District High School and Preparatory School for the academic year 2024-2025.

The research sample, consisted of students in the fifth scientific year at Abu Jaafar Al-Mansour Preparatory School, Fallujah Preparatory School, and Noor Al-Alam Preparatory School for the academic year 2024-2025. The sample number was (256) students who answered the achievement test and the three measures of self-feeling and social intelligence. The preparatory stage is the fifth scientific grade for the academic year 2024-2025.

3- Determining the subject

The subject was identified in the vocabulary of the first three chapters of the physics book for the fifth scientific year scheduled for the academic year 2024-2025.

4-Prepare research instruments

To achieve the objectives of the research, three tools were required to measure the achievement of physics, sense of self, and social intelligence. They were prepared as follows:

A- Physics Achievement Test:

One of the requirements of the current research is to build a test to measure the achievement of students in the research sample of physics.

Based on the number of hours of teaching the subject theoretically, the cognitive behavioral goals of the subject, the cognitive field and the six levels of Bloom (remembering, understanding, applying, analyzing, constructing and evaluating) Appendix (1), a two-dimensional test map was prepared after the mental processes represented by the number and type of behavioral goals, and after the academic content represented by the number of pages of the book, the test map, and after agreeing with the subject teachers that the test includes (5) questions, a question containing (20) objective paragraphs of the type of multiple choice with (4) alternatives, one of which represents the correct answer, and (4) essay questions of the type of short questions (definitions, explanation, comparison, and physical issues), and the scores were distributed by a score of (1,0) for the substantive paragraphs, either the essay questions, the scores were distributed to the question paragraphs according to importance and in consultation with the subject teachers

The validity of the test was confirmed by presenting it to the committee of experts from physicists and methods of teaching it Appendix(2), and everyone agreed on the validity of the paragraphs after making some linguistic amendments, and thus the apparent validity of the test was confirmed.

Through the results of the survey application on (40) students from the research community and not from his sample, the excellence coefficients for the objective paragraphs were calculated, and it was found that they ranged from (0.36-0.51), and the article paragraphs (0.32-0.59) Appendix (3), as the paragraph whose discriminatory force is (0.20) and above is considered an acceptable paragraph (Al-Dhaher et al.,1999, 130).

Using the two equations of difficulty of the paragraphs, the coefficients of difficulty of the objective paragraphs ranged between (0.25-0.68), and the fictional paragraphs between (0.33-0.70) Appendix (3).

Difficulty coefficients are acceptable, as (Bloom et al.,1983;107) stated that "the paragraphs vary in their difficulty if their difficulty coefficient ranges between (20% -80%)" (Bloom et al.,1983; 107).

As for the effectiveness of the false alternatives to the objective test paragraphs, they were all negative and within the acceptable ratios, Appendix (4).

The stability of the test was also calculated using the Fakronbach equation and was equal to (0.826), which is a good stability coefficient.

Thus, the test in its final form consists of (5) questions with a total score ranging from (0-100) and a hypothetical average (50), Appendix (5)

B- Sense of Self Scale

After reviewing the literature, research, and previous studies, the researcher decided to adopt the measure of sense of self-prepared by (Abdul Karim Jaradat and Nasr Al-Ali 2010) and codified it on the Iraqi environment (Al-Awadi and Ayed 2012).

The scale in its codified version of the Iraqi environment consists of (23) paragraphs, and the paragraphs are divided into three dimensions, where the first dimension, which is the feeling of the special self, consists of 10 paragraphs with the sequence (4-6-8-10-18-19-21-23) for the positive paragraphs, and the sequence (3-14) for the negative paragraphs, while the second dimension, which is the feeling of the general self, may consist of seven paragraphs, with the sequence(2-5-7-13-15-16-22), and the third dimension, which is social anxiety, contained six paragraphs and the sequence (1-9-11-12-17-20).

Each paragraph has five graded answers according to the five-point Likert scale, which is (apply very high, apply high, apply medium, apply low, apply very low), and graded (5,4,3,2,1) respectively for positive paragraphs and (1,2,3,4,5) for negative paragraphs.

To ensure the validity of the scale for use on the research sample, the researcher carried out the following procedures:

1-Validity of Scale Paragraphs

The paragraphs of the original scale were presented to a group of specialists in teaching methods and psychology⁴ to consult them on the possibility of applying the paragraphs of the scale to the research sample and their mental and linguistic suitability. All experts agreed on the appropriateness of the linguistic formula of the research sample and its suitability for their mental age.

To ascertain the psychometric characteristics of the scale, it was applied to a survey sample of (50) students of the research community and not those of its sample, after obtaining the fundamentalist approvals from their schools and in cooperation with the physics teachers in those schools, and through the survey application, the researcher reached:

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Prof. Dr. HannaN Hassan Al-Mashhadani, University of Baghdad – College of Education for Girls

Prof. Magda Ibrahim Al-Bawi, University of Baghdad – Faculty of Education for Pure Sciences - Ibn Al-Haytham

Prof. Dr.Hadi Kattfan Al-Shoun, Al-Qadisiyah University – Faculty of Education .

Prof. Dr.Huda Karim Hassan, Mustansiriyah University - Faculty of Education .

1-The clarity of the paragraphs the ease of answering the research sample on the paragraphs, and the average time taken to answer the paragraphs of the scale was (20) minutes only.

2-Validity of the Self-Emotion Scale⁴

The statistical validity of a measure was confirmed by finding:

A – The relationship of each paragraph to the total score of the scale

The correlation coefficient of the paragraph score with the total score of the scale was calculated using the Pearson correlation coefficient. The coefficients ranged between (0,654-0,86) and were all statistically significant at the level of 0.05, Appendix (6)

B- Relationship of the degree of the paragraph to the total degree of the field, and it turned out that the correlation coefficients between the degree of each paragraph and the total degree of the field to which it belongs range between (0.60-0.81), all of which are significant, as in Appendix (7).

C- Relationship of the total score of the field with the total score of the scale, and it turned out that the three correlation coefficients are (0.61-0.70-0.83), all of which are significant, as in Appendix (7).

- Stability of the Self-Emotion Scale

To calculate the stability of the scale, the researcher used the Cronbach alpha equation, and it was found that the value of the calculated stability coefficient is equal to (0.81), and this is evidence that the scale has high stability if it is reapplied more than once.

After verifying the validity and stability of the scale, it is ready to be applied. It consists of 23 grades ranging from (23 - 115) with a hypothetical average of (57.5), Appendix (8).

The scale was converted to an electronic test by the Cockleform application, and the link to the electronic scale was sent to the research sample with the help of physics teachers in their schools.

3- Social Intelligence Scale

After reviewing previous research and studies and reviewing the measures and tests of intelligence in general and social intelligence in particular and determining its components, the researcher decided to build a measure of social intelligence for her research

The initial version of the scale consisted of (45) paragraphs describing behavior and practices related to aspects of social intelligence, and alternatives to the answer were developed according to the Likert scale, which are (they apply to a large degree, apply to a medium degree, do not apply to me) and scores were given (0,1,2) for positive paragraphs, and(2,1,0) for negative paragraphs.

To ensure the validity of the scale for use on the research sample, the researcher carried out the following procedures:

1-Validity of Scale Paragraphs

The paragraphs of the original scale were presented to a group of specialists in teaching methods and psychology ⁵ to consult them on the possibility of applying the paragraphs of the

⁴Prof.Dr. Fadel Habbar Jouda, University of Baghdad – Faculty of Education for Pure Sciences - Ibn Al-Haytham

scale to the research sample and their mental and linguistic suitability. All experts agreed on the appropriateness of the linguistic formula of the research sample and its suitability for their mental age after modifying some paragraphs linguistically. Five paragraphs were deleted because they carried the same idea as the other paragraphs.

To ascertain the psychometric characteristics of the scale, it was applied to a survey sample of (55) students from the research community and not from his sample. Through the survey application, the following were applied:

1- Detecting the clarity of the paragraphs the ease of answering them, and the average time taken to answer the paragraphs of the scale (33) minutes only.

2- Calculating the validity of a measure

The statistical validity of a scale was confirmed by finding the relationship of each paragraph to the total score of the scale

The correlation coefficient of the paragraph score to the total score of the scale was calculated using the Pearson correlation coefficient. The coefficients ranged between (0.60-0.81) and were all statistically significant at the level of 0.05, Appendix (9)

Scale reliability:

The Cronbach alpha equation was used to calculate the stability of the scale, and it was found that the value of the calculated stability coefficient is equal to (0.802), and this is evidence that the scale has high stability if it is reapplied more than once.

Thus, the scale is ready to be applied consisting of (40) paragraphs, and its degree ranges between (0-80) with a hypothetical average of (40) degrees, Appendix (10).

After verifying the validity and stability of the scale, it was converted into an electronic test by the Coggleform application, and the electronic test link was sent to the research sample.

❖ **Application of Final Research Tools:**

The search tools were applied as follows:

1-The achievement test was applied to the research sample in their presence in their schools and under the supervision of the researcher and the physics teachers after the students were informed of a comprehensive test of the subject.

2-The measures of self-esteem and social intelligence were applied to the research sample electronically after sending the electronic test link to the students through social media applications (Viber and WhatsApp) and with the help of the subject's teachers, and the time was left open for a full week before the link was closed, and the data was collected electronically.

❖ **Statistical methods used:**

The statistical bag Spss and the following statistical means were used:

1- Cronbach's alpha equation

Arithmetical mean (Maths.)

3- Coefficient of calculating the difficulty of the substantive and essay paragraphs

4- Equation for calculating the excellence of the substantive and essay paragraphs

5- Pearson's simple correlation coefficient equation.

6. Pearson correlation coefficient inference equation (Albayati 2008, 238)

❖ **Displaying results**

The current research aims to reveal the relationship between the students of the fifth scientific subject of physics with their sense of self and social intelligence.

After applying the achievement test for physics and my measure of sense of self and social intelligence to the research sample, correcting the answer sheets, and organizing the scores in lists after collecting them, the results were as follows:

1- **Answer to the first question:** Which states (What is the level of achievement of the students of the fifth scientific subject of physics?).

After correcting the papers of the student's answers to the research sample and collecting the grades, it became clear that the average achievement of the students of the research sample for physics is equal to (70 .275), which is a good level. This supports the researcher's view that the student's achievement in physics is not often high, because most physics teachers adopt traditional teaching methods that are negative for the learner, which have become limited to explanation, narration, and indoctrination on the part of the teacher, and reception and preservation on the part of the student, which may lead to poor thinking and creativity on the part of the learner, as well as the intensity of the curriculum.

2-**Answering the second question:** Which states: (What is the level of feeling of self among fifth-grade students is scientific.

The results of the students' average scores on the self-feeling scale obtained from the results of the Google Form application sent to them, as shown in Table (1)

Table (I) Results of Applying the Self-Emotion Scale

Variable	Hypothetical average	Calculated Average	Percentage	Grade
Total Sense of Self	57.5	59.26	51.6	Medium
The feeling of own self	25	36	71 %	Good
Public self	17.5	22	70 %	Good
Experiencing anxiety	15	16	55%	Medium

The results are shown in Table (1) that all the calculated averages are higher than the hypothetical averages of the scale and range from a medium to a good estimate.

3- **Answer to the third question:** Which states (What is the level of social intelligence among fifth-grade students is scientific.

After unpacking the data obtained from the students' answers on Google Forms for a measure, the average social intelligence of the research sample was found to be 57,357, or a percentage equal to (71.3), which is a good level.

4-Answering the fourth question, which states (What is the relationship of the fifth-grade students' scientific achievement of physics to their sense of self, by verifying the first hypothesis, which states "There is no correlation at the level of significance 0.05 between the achievement of physics and the sense of self among fifth-grade students Scientific."

The results of using the Pearson correlation coefficient equation between the raw scores of the achievement test and the results of the sense of self scale according to its dimensions showed the values shown in Table (2).

Table (2) Evaluate the correlation coefficients between achievement and sense of self according to its dimensions

Relationship of variables	Correlation coefficient (Maths.)	T value	T value	Correlation significance at 0.05
Achieving a total sense of self	⁶ 15	378	1.960	morally
Collection in its own right	0.19	976	1.960	corporate
Collection in general	0.07	1.120	1.960	immaterial
Achievement by social anxiety	0.056*	.596	1.960	immaterial

It appears from Table (2) that the values of the correlation coefficients between the academic achievement of the research sample and the measure of sense of self as a whole and according to its dimensions are positive but weak.

To verify the first hypothesis, and using the results in the table above, it was found that the moral value of the correlation coefficient between the achievement of physics and the total sense of self is a function at the level of significance (0.05) and the degree of freedom (255), because the calculated T-value is equal to (2.378), which is greater than the table T-value of (1.960), thus rejecting the first zero hypothesis, which states that "there is no statistically significant correlation at the level of significance of 0.05 between the students of the fifth scientific subject of physics and the sense of self

5-Answering the fifth question, which states what is the relationship of the fifth-grade students' scientific achievement of physics to their social intelligence, by verifying the hypothesis that "there is no correlation at the level of significance 0.05 between the achievement of physics and social intelligence among fifth-grade students."

⁶ Correlation is significant at the 0.05 level (2-tailed) **,*

The results of using the Pearson correlation coefficient equation between the raw scores of the achievement test and the results of the debt thinking scale showed that the value of the correlation coefficient is equal to (0.255⁷), which is significant at the significance level of 0.05

Table (3) Correlation coefficient between achievement and social intelligence variables

Relationship of variables	Correlation coefficient (Maths.)	T value	T value	Correlation significance at 0.05
Achievement with social intelligence	*0.255	4:123)	1.960	Function

When calculating the T-value, it was found that it is equal to (4.123), which is greater than the tabular value (1.960) at the level of significance (0.05) and the degree of freedom (255), thus rejecting the second zero hypothesis, which means that there is a direct correlation between the achievement variable and the social intelligence variable.

6-Answering the sixth question, which states: (What is the relationship between the sense of self and social intelligence among fifth-grade students is scientific, by verifying the hypothesis that "there is no correlation at the level of significance 0.05 between the sense of self and social intelligence among fifth-grade students is scientific."

It was clear from the result of using the Pearson correlation coefficient equation between the scores of the Scales of Sense of Self and Social Intelligence that the value of the correlation coefficient is equal to (0.055) , which is not significant at the level of significance (0.05) and the degree of freedom (255), because the calculated T-value is equal to (0.862), which is less than the table T-value of (1.960) as in Table (7)

Table (3) The correlation coefficient between the two variables of sense of self and social intelligence

Relationship of variables	Correlation coefficient (Maths.)	T value	T value	Correlation significance at 0.05
Self-awareness of social intelligence	0.055 ***	0.862	1.960	Nonfunctional

Thus, the third null hypothesis is accepted, meaning that there is no direct correlation between the two variables of self-esteem and social intelligence in the research sample.

Recommendations:

- 1- Preparing some activities and exercises that help to develop a sense of self.
- 2- Activating the role of psychological support and counseling programs in schools.

⁷ Correlation is significant at the 0.01 level (2-tailed) **, **

- 3- Increase and activate classroom and extracurricular group activities to engage school students and encourage them to increase and develop their social intelligence.
- 4- Work to pay attention to activities and programs that develop the self-efficacy of students.

Suggestions:

- 1- Conducting research and studies on social intelligence and introducing it as a field independent of general intelligence.
- 2- Conducting a study on the concept of self and its relationship to some personality traits.
- 3- Conducting more research on the effectiveness of the sense of self at other stages of education, such as secondary education.

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