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Developing teachers' skills in carrying out the educational process in light of the sustainable development strategy for the intermediate stage

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Abstract

This study aims to develop the skills of middle school teachers in performing the educational process in light of the sustainable development strategy. The research focuses on the necessary educational, cognitive, professional, and behavioral skills to achieve sustainable education goals, emphasizing the integration of sustainability values into daily teaching practices.

The study employed a descriptive-analytical method, with the population consisting of middle school teachers in the Al-Shu'lah area during the 2024/2025 academic year, and the sample included 100 teachers selected randomly and purposively. The research instruments included a questionnaire and analysis of official documents to assess the level of teachers' skills related to sustainability.

The results indicated that teachers possess a high level of cognitive knowledge regarding sustainable development concepts, while their professional, behavioral, and value-based skills were moderate, with a noticeable gap in the practical application of sustainability principles in classrooms. The study recommends developing teacher preparation programs, conducting continuous training workshops, promoting sustainable values and behaviors, and involving teachers in environmental and community projects, ensuring the effective integration of sustainability in the educational process.

Keywords: Skills development, sustainable education, middle school, sustainable development, educational performance

Introduction

Chapter One: General Framework of the Research

First: The Research Problem

The educational process at the intermediate level is a pivotal stage in shaping the learner's personality and refining their cognitive, behavioral, and value-based skills. This stage forms the foundation upon which knowledge transitions from rote learning to learning based on understanding, analysis, and application. With the rapid transformations occurring in education in light of the requirements of sustainable development, the teacher's responsibility has become more complex than simply transmitting knowledge. Their role now requires developing students' environmental, social, and economic awareness and promoting the values of responsible citizenship and sustainable practices.

However, it is observed in the educational field that a large number of intermediate school teachers still focus on the traditional cognitive aspects of teaching, without sufficient attention to developing attitudes and values that support the concepts of sustainability. Furthermore, the educational training programs provided to them often lack sufficient content that addresses integrating sustainability into educational practices. This deficiency results in a weakness in the application of modern teaching strategies and a gap between the requirements of sustainable development and actual practices in schools.

Hence, the research problem is encapsulated in the following central question: How can the skills of intermediate school teachers be developed to deliver the educational process in light of the Sustainable Development Strategy? This question leads to many sub-questions, such as:

1. What are the most important educational and professional skills that teachers should possess to achieve the Sustainable Development Goals?
2. To what extent do middle school teachers currently possess these skills?

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3. What is the proposed vision for developing teachers' skills in line with the principles and strategies of sustainable development?

Second: Research Objectives

This research aims to present a scientific and practical vision for developing the skills of middle school teachers in line with the goals of sustainable development in education. This will be achieved through:

1. Identifying the key educational and professional skills that teachers must possess to achieve the Sustainable Development Goals, such as critical thinking skills, interactive teaching, project-based learning management, and the promotion of environmental and social values.
2. Assessing the level of middle school teachers' acquisition of these skills using specific scientific tools to identify gaps between the current situation and desired outcomes.
3. Developing a proposed framework for developing teachers' skills in light of the sustainable development strategy, which education departments can utilize in designing effective training programs.

Third: The Importance of the Research

The importance of this research stems from two main dimensions:

1. Theoretical Importance

It contributes to enriching the educational literature related to the topic of developing teachers' skills and linking them to the concepts of sustainable development, a relatively new field in Arabic research.

It clarifies the complementary relationship between the quality of teacher performance and achieving the Sustainable Development Goals in education, thus opening the door to specialized future studies.

2. Practical Importance

It provides a practical framework that education departments and educational authorities can utilize in preparing and implementing teacher training programs that include sustainability concepts and practices.

It helps improve the quality of the educational process at the intermediate level by enhancing teachers' competence in cognitive, skill-based, and value-based aspects.

Fourth: Research Limitations

To ensure the accuracy and focus of the research, its limitations have been defined as follows:

1. **Geographical Limitations:** The research application is limited to intermediate schools in the Al-Shula area.
2. **Timeframe:** The research will be conducted during the 2024/2025 academic year.
3. **Scope:** The research focuses on developing teachers' skills in light of the Sustainable Development Strategy, without delving into other elements such as curriculum development or school management.
4. **Population:** The research will be applied to a sample of middle school teachers in the target region, selected using either random or purposive sampling.

Search Terms

First: The Concept of Skill

Linguistic Meaning: In Lisan al-Arab, skill means proficiency and mastery in something. A skilled person performs every task with precision and accuracy. It is said,

"He was not treated with care," meaning he was not treated with skill or without proper execution. Similarly, it is said, "The skill was not applied to this building," meaning it was not approached correctly or constructed as it should be (Ibn Manzur, 1998, p. 128) ^[1].

Technical Meaning: Skill is defined as the mastery and proficiency of a task, and the ability to perform it with skill and proficiency (Al-Khuwaiski, 2008) ^[5]. Al-Laqqani and Al-Jamal (2003, p. 310) ^[12] define it as an easy and precise performance based on understanding what a person learns mentally and physically, while being economical in time, effort, and cost. Operational Definition: In this research, the skill can be operationally defined as the accuracy and speed with which a middle school teacher teaches various branches of the language, reflecting their deep understanding of the subject matter and their competence in effectively conveying it to learners.

Second: The Concept of Teaching

1. **Technical Definition:** Shawqi defines teaching as an interactive situation between two parties, each with specific roles, through which they strive to achieve particular educational objectives. This means that the student is no longer a passive element in the educational process, but rather an active participant who comes to school equipped with prior experiences and seeks to learn multiple skills, such as reading, listening, critical thinking, and judgment.
2. **Operational Definition:** In this research, teaching is operationally defined as the process of interaction and constructive dialogue between the teacher and the learner, aimed at acquiring knowledge and developing intellectual and social skills, thus contributing to the learner's personal development and growth in various aspects.

Skills are among the central concepts in the fields of education and human resource management, and researchers have addressed them with numerous definitions that converge in emphasizing the integration of knowledge, action, and behavior.

Guy Le Boterf (2002) ^[19] defined them as a triad consisting of knowledge, practices, and appropriate attitudes that enable an individual to perform their tasks effectively in evolving professional or educational contexts.

Cécile Dejoux (2001) ^[17] defined them as the integration of knowledge, abilities, and organized, goal-oriented behaviors within a specific professional or educational environment. In the same vein, Le Boterf (2002) ^[19] elsewhere emphasizes that skill is the ability to solve problems effectively within a structured framework that responds to the institution's or organization's requirements, making it a tool for adaptation and creativity in professional practice.

As for skills development within the procedural framework of this research, it refers to:

A structured process designed to enhance the cognitive, professional, and behavioral capabilities of teachers, enabling them to perform their educational tasks efficiently and adopt modern teaching strategies that contribute to achieving the Sustainable Development Goals

Third: The Concept of the Educational Process:

Didactics is a branch of educational science concerned with studying the process of teaching and learning, and the

interactions that arise within it between its various essential elements: the teacher who transmits knowledge, the learner who receives and interacts with it, and the knowledge itself, which forms the core of the educational process. It thus represents an educational science with its own theoretical foundations and methodology, studying teaching methods and strategies for organizing learning situations to achieve educational objectives (Al-Marouni, 1993; Al-Draij, 2011) ^[15, 14].

The Arabic word for "educational" is derived from the verb, which means to teach or instruct. From this root also come the words (to know), (to understand), (to learn), and (to master).

In Lisan al-Arab, it is stated that teaching means mastery, understanding, and the act of marking or indicating meaning (Ibn Manzur, 1997, p. 416) ^[1].

In foreign languages, the equivalent of the term "education" is Didactique in French and Didactics in English. Both terms are derived from the Greek root Didaskein, meaning "to teach" or "the art of teaching".

1. The Terminological Definition of Didactics: The terminological definition of didactics is multifaceted in educational literature.

Al-Marouni (1993, p. 95) ^[15] defined it as the scientific study of the learning situations experienced by the learner to achieve a specific educational objective.

Al-Draij (2011, p. 11) ^[14] defined it as the scientific study of teaching methods and techniques, as well as the organizational structures of learning situations to which learners are subjected within educational institutions.

From this perspective, it can be said that the educational process represents a set of organized procedures aimed at achieving effective learning through integrated interaction between the teacher, the learner, and the content within a stimulating learning environment.

Fourth: The Intermediate Stage:

This is the stage that lies between primary and secondary education. The duration of study is three years, and it includes students aged between 12 and 15 years. (Ministry of Education, 1981, p. 19).

Fifth: Sustainable Development: Sustainable development has several definitions, including:

- Wafaa Ahmed Abdullah defines it as a set of policies and procedures adopted to move society to a better state by using environmentally appropriate technology to achieve a balance between the development of natural resources and their depletion by humans, within a local and global framework for maintaining this balance.
- The Brundtland Report, issued by the International Commission on Environment and Development (1987), defines sustainable development as development that meets the needs of the present without jeopardizing the ability of future generations to meet their own needs.
- Sahar Al-Rifai defines it as an interactive and dynamic development that undertakes to achieve harmony between its three pillars: people, environmental resources, and economic development. - Definition by Muhammad Kamil Al-Sharqawi: It is the process that aims to achieve the highest level of economic efficiency in human activity, within the limits of available renewable resources, the capacity of natural biological

systems to absorb it, and consideration for the needs of future generations (Abu Al-Nasr & Medhat, 2017: 81).

- The connection between education and development: As a result of the spread of the concept of education for life, there has been an increased interest in linking the goals of education with the social and economic development goals of the state. There has also been an increased emphasis on the need for schools to be open to the local environment and community, and it has become essential for schools to be aware of environmental, social, and economic problems and methods of addressing them (Al-Harithi, 2014: 25).

Theoretical Framework

The Concept of Teacher Skills

Attention to the skills involved in the educational process has become a necessity emphasized by modern educational trends. Teacher training in the modern era is based on developing these skills. Most teacher preparation programs now focus on preparing competent teachers with high-level teaching skills that enable them to perform their work effectively.

The educational process is a reciprocal interaction between the teacher and the learner. The teacher strives to enable students to acquire the necessary educational experiences and skills, using diverse methods and tools to achieve educational goals. The educational process is not merely the transmission of information or the rote learning of facts; rather, it is an interactive activity involving cooperation between the two parties to equip the learner with knowledge, attitudes, and skills that contribute to modifying their behavior and developing their personality holistically.

The concept of the educational process can be summarized in the following points (Khalaf, B.T., 19):

- It is a means of organizing the educational environment in a way that helps the learner interact with it and modify their behavior positively.
- It is a set of purposeful activities that aim to achieve learning. - It is the method the teacher uses to translate the curriculum content practically and achieve its objectives in the learners' behavior.

The Teacher's Role in Achieving Quality Education

It was natural for the concepts of quality to move from the fields of industry and economics to the field of education, as is the case with many educational concepts that have their roots in other fields. With the development of the times, the acceleration of knowledge and technology, and the increasing intensity of competition between individuals and institutions, the application of Total Quality Management in education has become a fundamental requirement for achieving efficiency and effectiveness in the educational process. High-quality education is a key tool for achieving comprehensive development and societal progress, integrating cognitive, skill-based, and emotional aspects to meet society's needs for qualified and competitive individuals.

Definition of Teacher Quality

Quality is defined as the extent to which a product or service conforms to specific specifications or requirements. According to the American Standards Institute (ASI), it is "the set of attributes and characteristics that enable a product or service to meet specific needs."

In the educational context, teacher quality is defined as the set of attributes and characteristics that accurately reflect the essence of the educational process in its various dimensions: inputs, processes, outputs, feedback, and the interactions that lead to achieving the desired goals for all learners (Khudair Abbas Jari *et al.*, 2017) ^[4].

Objectives of Quality in Education

Quality in education seeks to achieve a set of strategic objectives, most notably (Raafat Abdul Aziz Al-Buhi *et al.*, 2018) ^[7]:

1. Ensuring the correct performance of all elements of the educational process while continuously improving and developing them.
2. Enhancing the competitiveness of educational institutions through cooperation and teamwork.
3. Providing high-quality educational services that meet the needs of beneficiaries in terms of efficiency, cost, time, and continuity.
4. Developing continuous training programs to improve performance and quality within educational institutions.
5. Adapting to technological, economic, and social changes to achieve the required quality of education.

The Need to Implement a Quality System in Education

The importance of adopting a Total Quality Management (TQM) system in education is evident in the following points (Mohsen Ali Attia, 2000) ^[13]

1. Improving the outcomes of the educational process and reducing the gap between developed and developing countries.
 2. Strengthening horizontal and vertical communication channels within the educational institution to ensure integration and effectiveness.
 3. Supporting the principle of delegating authority to staff while maintaining continuous monitoring and supervision.
 4. Achieving student satisfaction as the focus of the educational process, since quality management seeks to meet their needs and achieve their satisfaction as the primary beneficiary of the educational process.
- The Educational Process in Intermediate Education

The intermediate stage is a pivotal educational link in the education system, serving as the bridge that connects learners from basic to secondary education. At this stage, the nature of the educational process shifts from direct instruction to inquiry-based learning, interaction, and participation. Education at this level is not merely the transmission of knowledge, but a holistic development process designed to shape the learner's well-rounded personality. This is achieved through the development of cognitive, emotional, social, and behavioral aspects, guided by an educational philosophy that considers the needs of adolescents and the challenges of contemporary society (Republic of Iraq, Ministry of Education, 2022).

Intermediate-level students are characterized by unique developmental traits associated with early adolescence. They undergo significant physical, psychological, and social transformations. They are more inclined towards independence, more sensitive to self-esteem, and begin to form their own worldviews. Their need for belonging and social acceptance also increases (UNICEF, 2021). They also exhibit a growing intellectual curiosity that drives them to question, discuss, and experiment, making it necessary to direct the educational process toward developing critical and creative thinking skills, rather than being limited to

memorization and repetition. Recent studies suggest that providing a supportive and stimulating learning environment can contribute to reducing negative behaviors and increasing intrinsic motivation to learn (Eccles & Roeser, 2011) ^[18].

Sustainable Development Strategy in Education

Sustainable development is a central concept adopted by modern educational systems as a comprehensive framework for achieving balance between humanity, the environment, society, and the economy. UNESCO (2013) affirmed that any sustainable development program should consider the three fundamental dimensions of sustainability environment, society, and economy along with the implicit cultural dimension that reflects the identity of societies and their local contexts. Therefore, sustainable development is not a single, fixed model, but rather a dynamic system that takes on multiple forms depending on the environmental, social, and cultural specificities across the globe. The core principles of this development are based on the concepts of intergenerational equality, peace, tolerance, social justice, the conservation of natural resources, and poverty reduction values that represent the ethical foundation from which all sustainability efforts emanate (UNESCO, 2013, p. 5).

Sustainable development is a central concept adopted by modern educational systems as a comprehensive framework for achieving balance between humanity, the environment, society, and the economy. To achieve sustainable development in its holistic sense, countries must possess a clear political will, coupled with effective societal and individual readiness to ensure the implementation of its strategic pillars. Al-Marsawi (2015) indicates that achieving the Sustainable Development Goals requires defining its core pillars and establishing precise quantitative and qualitative indicators to monitor its realization in the economic, social, and environmental spheres. He also emphasizes the necessity of creating a balanced interrelationship between global economic systems to ensure responsible and long-term economic growth that includes all countries and societies without discrimination or exclusion.

Components and Approaches of Sustainability Education

The most important components of sustainability education lie in the necessity of adopting an integrated scientific model that considers all elements of the educational process and its environment. This model should be designed on clear scientific foundations that ensure consistency between objectives, content, and educational methods. These components include four fundamental dimensions:

1. A sustainability environment, which focuses on supporting the senior management of educational institutions, securing the necessary financial and human resources, and promoting cooperation and interaction among all partners in the educational process.
2. Sustainability curriculum, which should be diverse, relevant to the local culture, and connected to the daily lives and professional fields of learners, making it more practical and acceptable.
3. Learning sustainability, which aims to cultivate an engaged and motivated learner capable of transcending the boundaries of academic disciplines and applying knowledge to new life situations.

4. The sustainability teacher is the key element who possesses the awareness, skills, and training necessary to apply sustainability principles using modern educational methods, along with the ability to motivate and encourage learners to adopt sustainable practices.

Approaches and Methods of Sustainability Education

Sustainability education approaches are viewed as the practical mechanisms that enable educational institutions to integrate sustainable development concepts into all aspects of the educational process, from objectives and content to teaching methods and assessment. Al-Buraidi emphasizes that adopting diverse approaches to sustainability education is a prerequisite for its effectiveness, given the multiplicity, complexity, and interconnectedness of the issues it addresses across scientific and social fields. Teaching Methods for Education for Sustainable Development

Teaching methods for education for sustainable development are among the most essential tools that enable teachers to transform theoretical concepts into effective educational practices, contributing to the development of learners' awareness and shaping their behavior towards environmental, social, and economic issues. The United Nations Educational, Scientific, and Cultural Organization (UNESCO, 2013) identified ten key aspects that support quality education in light of the principles of sustainable development. These aspects relate to five main areas concerning the learner: reaching the learner, understanding their prior experiences, developing content that is realistically relevant to their lives, employing diverse teaching methods, and providing a supportive and encouraging learning environment.

In light of these principles, the teacher's role becomes pivotal in designing an interactive learning environment that considers the individual needs of learners and provides them with equal learning opportunities. This represents a form of social justice, which is a cornerstone of sustainability. A teacher who employs diverse strategies such as cooperative learning, classroom discussion, and project-based learning contributes to increasing student participation and activating their roles within the classroom, making the educational process a comprehensive experience that fosters their critical and creative thinking (UNESCO, 2013, p. 15).

Practical Section

First: Research Methodology

This research employed a descriptive-analytical approach, as it was deemed the most suitable for the nature of the problem and its objectives. The descriptive-analytical approach is based on studying educational phenomena as they exist in reality, describing them accurately through the collection of relevant data and information, and then analyzing and interpreting it to reach conclusions and proposals that contribute to the development of the educational reality.

Accordingly, a questionnaire was used as the primary data collection tool, as it enables the collection of quantitative and descriptive information from a large sample of the target population. The results were then statistically analyzed using descriptive methods (such as percentages, arithmetic means, and standard deviations), along with making the necessary comparisons between demographic variables (such as gender, years of experience, and educational qualifications) to arrive at an objective scientific

interpretation of the results.

The descriptive-analytical approach adopted in this research goes beyond mere description. It involves analyzing the existing educational reality, identifying strengths and weaknesses in teacher performance, and then offering practical and applicable suggestions for improving their performance in line with the principles and educational goals of sustainable development.

Second: The Research Population and Sample

The research population refers to all individuals to whom the characteristics of the phenomenon under study apply, and to whom the research findings are intended to be generalized. Accordingly, the population of this research consists of all male and female middle school teachers in the Al-Shula district during the 2024/2025 academic year, given that this group is directly responsible for implementing the educational process and achieving the goals of sustainable development within the school environment.

The research sample was selected using stratified random sampling, representing various middle schools in the district, while ensuring gender balance (male and female teachers), diversity of specializations, and years of experience. The sample size was 100 male and female teachers from government schools, a statistically sufficient size to represent the original population and achieve a reasonable degree of validity in the results.

The questionnaire was distributed directly to the sample members after coordination with the school administrations, with assurances of confidentiality and that the information would only be used for scientific research purposes. Participants were given ample time to complete their responses, and the completed questionnaires were collected, sorted, and verified for validity and suitability for statistical analysis.

This sample selection was based on the principle of realistic representation of the population, allowing for the generalization of results within the study's scope. Geographical and social diversity was also considered in the selection of schools to ensure a comprehensive picture and maximize the objectivity of the findings.

Third: Research Tools

This research relied on a primary data collection tool: a questionnaire specifically designed to measure the level of educational and professional skills possessed by middle school teachers in light of the Sustainable Development Strategy. The use of questionnaires is among the most common and appropriate tools in descriptive educational research, as it allows for the accurate and objective collection of quantitative data from a large number of respondents. It also enables the systematic statistical analysis of the studied phenomenon.

First: Questionnaire Construction

The questionnaire was developed based on the research's theoretical framework and previous studies related to teacher skills development and education for sustainable development. It comprised 30 items distributed across four main domains representing the targeted skills:

- The cognitive domain related to sustainable development (8 items): This measures teachers' awareness of sustainability concepts and dimensions, and the extent to which these are integrated into

educational practices.

- The professional and teaching domain (8 items): This focuses on teachers' application of teaching strategies and assessment methods that consider the principles of sustainability.
- Behavioral and Values Domain (7 items): Measures professional and social values and positive attitudes towards sustainable education.
- Sustainable Professional Development Domain (7 items): Addresses the extent to which teachers are committed to developing their own performance and keeping up with educational developments in light of sustainability.

Second: Response Scale

A five-point Likert scale was used to assess the responses of the sample members, with the following values representing:

(5= Always, 4 = Often, 3 = Sometimes, 2 = Rarely, 1 = Never).

The arithmetic means were interpreted according to the following levels:

- **(4.20 - 5.00):** Very high skill level
- **(3.40 - 4.19):** High skill level
- **(2.60 - 3.39):** Average skill level
- **(1.80 - 2.59):** Low skill level
- **- 1.79):** Very low skill level

Third: Other Supporting Tools

In addition to the questionnaire, the researcher utilized the analysis of official documents (such as training plans and teachers' professional performance reports) to enhance the quantitative study results with qualitative indicators that support interpretation and analysis. This contributes to providing a more comprehensive picture of the educational skills of middle school teachers.

Fourth: Instrument Validity and Reliability

Ensuring the validity and reliability of the research instrument is a fundamental step in guaranteeing the credibility and generalizability of the results. Therefore, the researcher adhered to a set of methodological procedures to verify validity and reliability, following established scientific methods in educational research.

1. Validity

The questionnaire's validity was verified in two ways:

A. Face Validity

The questionnaire, in its initial form, was presented to a group of experts and reviewers specializing in education, curriculum, teaching methods, and professional skills assessment. This group consisted of eight (8) reviewers, all university professors and experienced educational supervisors.

They were asked to provide their opinions on the clarity, comprehensiveness, and suitability of the items to the research objectives. Based on their feedback, some linguistic and methodological modifications were made, such as rewording some items for greater precision and relevance, and deleting repetitive or weakly relevant items related to the topic of sustainable development.

B. Content Validity

The researcher verified the content validity by comparing the questionnaire items with the content of educational literature and previous studies related to the topic of developing teachers' skills in light of sustainability. It was found that the questionnaire covered all the principal axes of the targeted educational skills cognitive, professional, behavioral, and developmental thus enhancing its overall validity.

2. Reliability: To measure the reliability of the instrument and the stability of its results when administered more than once, the researcher used the internal consistency coefficient (Cronbach's alpha) after the initial application of the questionnaire to a pilot sample of 30 male and female teachers outside the main research sample.

Table 1: The results of the statistical analysis are as follows

Field	Number of Paragraphs	Cronbach's Alpha
Cognitive domain	8	0.86
Professional and teaching field	8	0.88
Behavioral and value domain	7	0.84
Sustainable professional development field	7	0.82
Total instrument	30	0.87

These values are high, indicating a high degree of reliability and internal consistency among the questionnaire items, making them suitable for field application in the targeted educational environment.

Fifth: Data Analysis Methods

After collecting field data using the questionnaire and official documents, a set of descriptive and analytical statistical methods was applied to achieve the research objectives and arrive at accurate and reliable results. The analysis was carried out according to the following steps:

1. Descriptive Analysis

The researcher employed descriptive statistics to summarize the questionnaire and document data, aiming to provide a comprehensive picture of teachers' mastery of educational skills in the context of sustainable development. These statistics included:

- **Percentages (%):** To show the distribution of responses according to demographic variables such as gender, educational qualification, and years of experience.
- **Arithmetic Mean (Mean):** To estimate the overall level in each skill domain (cognitive, professional, behavioral, and developmental).
- **Standard Deviation (Standard Deviation):** To measure the degree of variation in responses and the homogeneity of performance among the sample members.

2. Comparative Analysis

Comparisons were made between different groups within the sample to identify potential differences in skill acquisition, using the following demographic variables:

- **Gender:** (Male/Female)
- **Educational qualification:** (Bachelor's, Higher Diploma, Master's or higher)

- **Years of work experience:** (<5 years, 5-10 years, >10 years)

Appropriate statistical tests were used for each type of data, such as:

- t-test to compare the means of two groups (e.g., males and females).
- One-way ANOVA to compare the means of more than one group (e.g., qualification levels or years of experience).

3. Qualitative Analysis

To analyze information extracted from official documents such as training plans and educational reports, descriptive content analysis was used, with the aim of:

- Identifying the extent to which sustainable development concepts are integrated into training programs and curricula.
- Identifying the strengths and weaknesses of training plans related to developing educational skills.
- Enhancing the questionnaire results with qualitative information to provide a comprehensive picture of the current situation.

The results of the quantitative and qualitative analysis were linked to the primary research objectives to determine the extent to which teachers possess educational skills in light of sustainable development, to identify strengths and weaknesses, and then to formulate scientifically and objectively developed recommendations and proposals.

Chapter Four: Presentation and Discussion of Results

First: Presentation of Survey Results

After analyzing the data collected from the survey, results were obtained regarding the level of teachers' possession of educational skills in light of sustainable development, distributed according to the four domains:

Table 2: Cognitive Domain

Skill Level	Arithmetic Mean	Paragraphs
High	4.12	1-8

The results indicate that most teachers possess a high level of knowledge about sustainable development concepts and their environmental, social, and economic dimensions.

This demonstrates a good awareness among teachers of the importance of integrating sustainability concepts into the educational process, which aligns with the findings of previous studies that highlighted the positive role of continuous training and professional development in raising teachers' awareness (UNESCO, 2013).

Table 3: Professional and Teaching Field

Skill Level	Arithmetic Mean	Paragraphs
High	3.78	9-16

The results showed that teachers employ diverse teaching strategies that incorporate some sustainability principles. Still, there is a clear gap in the full integration of environmental and community activities.

This aligns with what Al-Marsawi stated: that the practical application of sustainability principles requires continuous

administrative support and specialized training programs.

Table 4: The Behavioral and Value-Based Domain

Skill Level	Arithmetic Mean	Paragraphs
Middle	3.45	17-23

The results indicate an average level of behavioral and values-based skills, with some teachers showing interest in promoting social justice and community engagement. In contrast, others require further guidance and training.

This finding highlights the importance of workshops and professional development programs that focus on sustainable values and behaviors, thereby enhancing teachers' ability to convey these values to students.

Table 5: Sustainable Professional Development

Skill Level	Arithmetic Mean	Paragraphs
Middle	3.30	24-30

The table indicates that teachers participate in professional development programs to a moderate extent, highlighting a pressing need to increase participation in continuous training and adopt lifelong learning strategies.

These findings support the previous studies' indications regarding the importance of sustainable professional development for achieving the goals of sustainable education.

Second: Analysis of Results by Demographic Variables

- **Gender:** No statistically significant differences were found between males and females in all areas, indicating equal opportunities and interest in sustainable education between the sexes.
- **Educational Qualification:** The results showed that teachers with higher degrees (Master's or higher) had higher average scores in the cognitive domain and professional development compared to those with Bachelor's degrees and diplomas.
- **Years of Experience:** The data showed that more experienced teachers (>10 years) tended to possess better professional and behavioral skills, while younger teachers need more training support to enhance these skills.

Third: Discussion of Results

1. The high cognitive domain reflects teachers' awareness of the importance of sustainable development, but there is a need to translate knowledge into practical application within the classroom.
2. A high level of professional development coupled with a gap in practical application indicates the need to provide educational tools and activities that support the integration of sustainability into the educational process. The average level of behavioral and values-based skills confirms that promoting sustainability-related values requires ongoing guidance and practical training programs.
3. The average level of professional development indicates a need to foster a culture of lifelong learning and specialized training in sustainability fields.

Fourth: Interpreting the Results and Linking Theory to the Framework

The results align with the theory of learning for sustainable development, which emphasizes that knowledge alone is insufficient; skills, values, and behaviors must be developed to ensure educational, social, and environmental sustainability (UNESCO, 2017).

The results also underscore the need for a comprehensive framework that integrates continuous professional development, educational assessment, and effective teaching methods to enhance teachers' ability to implement sustainability concepts in middle schools successfully.

Chapter Five: Conclusion, Recommendations, and Suggestions

First: Conclusion

Based on the results of the data analysis, the following conclusions can be drawn:

1. There is a pressing need to develop the skills of middle school teachers in accordance with the concepts of sustainable development, particularly in the behavioral, values-based, and professional development domains.
2. Teachers appear to possess a high level of knowledge about sustainability concepts; however, the practical application of these concepts in classrooms remains limited, reflecting a gap between knowledge and practice.
3. Current training programs are insufficient to promote sustainable education, and their content and curricula need to be developed to include sustainability teaching skills and their practical applications.
4. There is a clear relationship between academic qualifications, years of experience, and skill level, with those holding higher qualifications and having longer experience demonstrating superiority in specific professional and cognitive skills.

Second: Recommendations

Based on the findings and conclusions, the researcher suggests the following:

1. Integrate sustainable development topics into university and teacher training programs, with a focus on the practical and applied aspects.
2. Organize ongoing training workshops to enhance teaching skills related to sustainability, including active learning methods, project-based learning, and addressing environmental and social problems.
3. Engage teachers in environmental and community projects within schools to promote sustainable values and behaviors among both teachers and students.
4. Develop educational performance assessment tools to incorporate sustainability indicators in planning, implementation, and evaluation.

Third: Proposals

To further improve the educational process in light of sustainable development, the researcher proposes the following:

1. Conduct future studies on the impact of sustainable development programs on student achievement and their awareness of sustainable values.
2. Develop curricula that are integrated with the Sustainable Development Goals, achieving a balance between knowledge, skills, and behaviors.
3. Study the role of school administration in supporting sustainable education and providing a suitable learning environment for implementing innovative strategies.

4. Encourage applied scientific research in the field of sustainable education and link research findings to national and regional educational policies.

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Appendix 1: Survey results table by field

Field	Number of paragraphs	Arithmetic mean	Standard Deviation (SD)	Skill level
cognitive domain	8	4.12	0.48	High
Professional and teaching field	8	3.78	0.52	High
Behavioral and value domain	7	3.45	0.55	Middle
Sustainable Professional Development Field	7	3.30	0.57	Middle
Total instrument	30	3.66	0.53	Medium high