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Effectiveness of a Training Program Based on the Developmental Theory of Intelligence to Improve Learning Motivation Among Secondary School Students

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Abstract

The current research aims to investigate the effectiveness of a training program based on the developmental theory of intelligence in enhancing the desire to learn among secondary school students. The study utilized an experimental research design due to its suitability for the nature of the research. The researcher prepared the study tools and assessed their validity and reliability. The research sample consisted of 60 female students who were randomly divided into an experimental group and a control group, each comprising 30 students. The results indicated the effectiveness of the program in improving the desire to learn among secondary school students. The researcher also provided recommendations and suggestions based on the research findings.

Keywords: *Effectiveness, training program, developmental theory, intelligence, desire to learn, secondary school*

Introduction

The desire for learning is a prerequisite for the learning process, and it is the most important condition because it forms the foundation for success and effective leadership. It is what seeks to create opportunities for both teachers and students to expand their horizons and acquire experiences that stimulate innovation and creativity. Despite the huge amounts spent on building schools and equipping classrooms, it will not be effective without a strong desire for learning among the students. Weak learning motivation among students can lead to a lack of enthusiasm and positivity necessary for academic work. Studies have shown that this problem exists among students, manifested in procrastination, laziness, lack of effort, low perseverance, lack of interest, and a lack of enthusiasm in various situations that would otherwise spark the interest of others (Carman, et al., 2017, p. 98; Al-Rubaat, 2022)

Through monitoring educational institutions, it can be said that there is a decline in students' enthusiasm and motivation for learning, which is clearly reflected in their inability to achieve the desired level of learning. A lack of motivation is one of the main problems facing learners. Additionally, students may not embrace new ideas, struggle to adapt to changing circumstances, and their reactions are often predictable and lacking in creativity. Therefore, there is a need for a study aimed at improving and enhancing students' desire for learning (Ahmed et al., 2022).

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Students' desire for learning is influenced by their beliefs about the nature of intelligence, whether it is fixed and unchangeable or whether it can be improved through learning and effort. Therefore, an effectiveness program based on the developmental theory has been adopted to potentially impact educational outcomes for students, including academic achievement, by combining perseverance, self-efficacy, and a growth mindset to enhance the performance of students with average and low academic achievement

Therefore, the effectiveness of a program based on the developmental theory of intelligence was adopted to potentially impact educational outcomes, including academic achievement, by promoting perseverance, self-efficacy, and a growth mindset to enhance the performance of students with average and below-average achievements. Based on the above, the research problem is to answer the following question: Is the program based on the developmental theory of intelligence effective in improving the desire to learn among secondary school students?

Researchers unanimously agree that the desire for learning is a crucial factor in students' academic performance at school and individuals' professional lives. The study by Jocelyn revealed a statistically significant relationship between the use of assessment methods and students' desire for learning. The importance of the desire for learning lies in its positive correlation with academic achievement, student engagement, and self-monitoring of learning strategies (Dompnier, et al., 2009; Fahrurrozi, 2022).

The desire for learning is at the heart of the educational process, and it is the distinguishing feature of successful learning in all learning environments. It impacts students' motivation for learning, activates learning, fosters participation among learners, and enhances learning outcomes. This interaction between students and teachers inside the classroom plays a significant role in students' overall engagement in learning. Previous studies have shown a link between the desire for learning and learning new vocabulary in the English language, as well as its influence on achieving high grades and increasing self-monitoring of the desire for learning (Gottfried, et al., 2005, p. 214; Sutoyo, 2023).

The significance of the desire for learning for learners lies in its ability to enhance learning efficiency, increase enthusiasm, and foster positive participation in the learning environment. It also improves scientific curiosity and students' love for exploring knowledge, leading to increased positive attitudes towards learning and academic subjects, while reducing resistance behaviors towards teachers. Moreover, it develops basic thinking skills, higher-order thinking skills, and creative thinking skills. The key to success in life lies in the love for learning and the desire to pursue it. From this perspective, the passion for learning is an inherent trait that humans begin their lives with, to surpass the ignorance and limitations of childhood. This passion may grow in some and diminish in others. Those with heightened desire and passion for learning will develop their minds, set goals, overcome weaknesses, reinforce strengths, and achieve success and excellence. Conversely, those with weakened desire and love for learning may halt their learning, cease their development, limit their chances of success, and settle for laziness.

Research Hypotheses

1. There is no statistically significant difference at the 0.05 level of significance between the mean scores of female students in the experimental group on the pretest and posttest measures to improve the desire for learning among high school students.
2. There is no statistically significant difference at the 0.05 level of significance between the mean scores of female students in the control group on the pretest and posttest measures to improve the desire for learning among high school students.

3. There is no statistically significant difference at the 0.05 level of significance between the mean scores of female students in the experimental group and the mean scores of female students in the control group on the posttest measure to improve the desire for learning among high school students.

The terms are defined:

1. Effectiveness: The extent of the impact that an experimental intervention, considered an independent variable, can produce on one of the dependent variables.
2. Training Program: A structured and organized activity provided to learners to develop and enhance their skill and knowledge levels.
3. Growth Theories of Intelligence: These theories represent individuals' beliefs about the nature of their intelligence as flexible and subject to change and development through learning, effort, and perseverance when faced with obstacles and challenges (Dweck, 2006, p. 9).
4. Desire to Learn: A multifaceted concept that encompasses perseverance, commitment to tasks, the willingness to learn, and motivations for success (Friedman-Nimz & Skyba, 2009, p. 44).

Literature Review

The Developmental Theory of Intelligence

Explicit theories of intelligence differ from implicit theories of intelligence. Explicit theories refer to a set of structures and conceptions established by psychologists and experts in the field of psychology, based on research results and empirical studies gathered through standardized scientific tools. On the other hand, implicit theories of intelligence refer to the structures and conceptions existing in individuals' minds regarding the nature of intelligence, which may not necessarily have a clear definition for them (Sternberg, 1985, pp. 607-608; Mussarrat, 2022).

The main difference among proponents of implicit theories concerning the nature of intelligence, whether genetic or developmental, lies in the approaches directed towards stability of ability versus improvement of ability. Psychological studies have recently renewed their interest in examining the possibility of improving students' intelligence, determining the extent to which it can occur, or whether intelligence remains fixed since birth. These studies aimed to identify the degree to which students' beliefs and perceptions about their intelligence and capabilities, as well as their beliefs about the world around them, contribute to their academic and professional success. The studies indicated that it is possible to develop the brain through appropriate challenges and stimuli, and what students believe about their intelligence has been shown to have a stronger correlation with academic performance than the intelligence scores already measured.

Despite individual differences in talents, abilities, interests, and temperaments, it is possible for anyone to change and develop through practice and experience (Dweck, 2006, p. 65; Tampubolon, 2023).

Various studies have explored the concept of mindset, which refers to a specific way of thinking that includes an individual's orientation and opinions about something. Carol Dweck (2006) is known for formulating the terms "growth mindset" and "fixed mindset." Her theory emerged from a cognitive-social perspective, assuming that thinking processes play a significant role in human motivation, performance, and influence (Merriam, Caffarella, & Baumgartner, 2007; Mohammad et al., 2022).

According to this theory, students with a growth mindset demonstrate higher motivation within the school setting and achieve better grades and evaluations compared to students with a fixed mindset. The growth mindset includes the student's efforts and attempts to develop, improve, and enhance their skills and abilities despite challenges and difficulties. Dweck (2008, p. 5) stated that approximately 40% of students have a growth mindset, 40% have a fixed mindset, while the remaining 20% are not classified. These percentages are relatively high, and there is a need to reduce the fixed mindset to the greatest extent possible. Therefore, there is a need to instill a growth mindset in our children early on so that they can believe that everyone is capable of success (Ritchie & Lee, 2018, p. 31; Octora et al., 2022).

Similarly, Dweck (2006) pointed out that every individual is born with a desire to learn, but this desire quickly diminishes due to the fixed mindset. When children acquire the ability to assess themselves, they become fearful of not being perceived as intelligent. As a result, some students avoid challenges and reject learning opportunities. The growth mindset, on the other hand, refers to the belief that students can nurture and develop their qualities and capabilities through practice. It emphasizes that intelligence can be enhanced with more effort and perseverance when faced with obstacles and challenges. The student's choice of mindset determines whether they see success as being born with intelligence or as expanding their learning and self-development. This choice profoundly affects students' behaviors. Those with a growth mindset believe that they can develop their intelligence and abilities and are more willing to take risks compared to those with a fixed mindset, who believe that their intelligence is static (Mangels, Butterfield, Lamb, Good & Dweck, 2006; Jun et al., 2022).

As evident from the above, what a student believes about themselves has a significant impact on their behavior, academic achievement, and success. Each student formulates and defines a framework of meanings and beliefs through which they understand and interact with the world. Despite individual differences in talents, abilities, and skills among students, each student can improve and develop their capabilities if they adopt a growth mindset. They view failure as an opportunity for improvement and learning, in contrast to students with a fixed mindset.

The components of mindset are the primary drivers in dealing with all situations, and their importance increases when situations involve challenges, obstacles, and problems. Mindset is considered the backbone of success and excellence. A combination of perseverance, self-efficacy, and a focus on mastery makes high-achieving students stand out. Moreover, this combination can also uplift students with average and low achievement levels.

The components of mindset include

1- Grit: Grit refers to the courage and mental strength that allows a person to persist in doing something difficult or unpleasant. It is a term used to describe the level of a student's dedication to long-term goals and involves working diligently towards challenges and maintaining effort and interest over the years despite facing setbacks (Duckworth, Peterson & Kelly, 2007). Grit also indicates the inclination to sustain interest and effort toward long-term goals and includes a mix of passion, interest, and conviction (Jensen, 2007).

Students with higher levels of grit engage more in practice and adhere to their commitments. Researchers conducted interviews with individuals who excelled in their fields and found that their determination and perseverance were instrumental in their success. Students who can persevere when faced with difficult tasks are more likely to achieve academic success than students who believe that intelligence is fixed and avoid challenging tasks (Levinson, 2012).

2- Self-Efficacy: Self-efficacy refers to a student's belief and confidence in their ability to succeed (Tranquillo, 2015). It indicates a student's capacity to produce significant effects, and those with high self-efficacy feel capable of bringing about change. Students with high self-efficacy are confident in their abilities when facing challenging tasks, viewing them as opportunities for growth rather than as ways to avoid such situations (Bandura, 1989, p. 1179).

3- Mastery Orientation: Mastery orientation refers to a student's inclination to improve oneself and involves choosing mastery goals and more challenging goals. Mastery goals are focused on understanding skills or content. Students with a growth mindset tend to prioritize mastery goals, which are based on the desire to learn and increase their competence. In contrast, students with a fixed mindset focus more on performance goals, seeking to demonstrate higher competence compared to their peers (Mrazek, 2020; Alkhafagy et al., 2023).

It is evident from the above that students' mindset, perseverance, and self-efficacy have a significant impact on their approach to learning, academic performance, and motivation. Students with a growth mindset tend to exert more effort, embrace challenges, and view setbacks as opportunities for improvement. They are more likely to adopt deep learning strategies, leading to improved learning outcomes and higher academic achievement. Encouraging a growth mindset in students can be beneficial in reducing learning anxiety and enhancing their learning motivation and performance (Hatcher, 2018; Frank, 2018).

The Desire for Learning

Peterson and Seligman (2004) assert that the concept of the desire for learning has been discussed in connection with other concepts rather than as an independent concept itself. It has been part of various measures or expressions in tools such as interest, inclinations, and motivation assessments. However, today it has become an independent term. Despite the familiarity and clarity of the term "desire for learning," its theoretical foundation requires effort and precision in researching learning theories and motivational theories, which form a general framework for studying positive emotions, personality traits, needs, and desires. Many terms and concepts are related to and synonymous with the concept of the desire for learning, such as "flow," "motivation," "enthusiasm," "perseverance," "curiosity," "love of exploration," "pleasure in learning," "passion for learning," and others (Peterson & Seligman, 2004, p. 173).

Plato explains the relationship between love, learning, and knowledge, as evident in his three famous dialogues: "Symposium" and "Republic." Through these discussions, he emphasizes two crucial points:

1. The love relationship between the learner and the teacher impacts the learning process.
2. If the learner is intellectually and emotionally convinced of the value of knowledge, their love and desire to seek it will increase, positively influencing the effectiveness of learning.

Aristotle, in his *Metaphysics*, asserts from the very first sentence that all humans have a natural desire for knowledge. According to him, this desire is natural and begins with merely showing interest. Hearing a sound or seeing a crowd drives a person to want to know what is happening, forming the basis of human cognitive curiosity. Centuries later, St. Augustine considered the desire for learning as a kind of scientific curiosity and one of the instinctive motivations essential to humans, along with sensory desires and the desire for knowledge and learning (Al-Jaji et al., 2019, p. 34).

Therefore, the concept of the desire for learning is related to the concept of internal and external motivations and incentives. Internal motivations target aspects such as interest,

enjoyment, and curiosity, while external motivations focus on external factors like approval from others or receiving rewards. However, in our discussion about the relationship between motivation and the desire for learning, we specifically refer to the aspects connected to internal motivations.

Many learners immerse themselves in activities that fulfill their love for exploration and cultivate a desire to acquire knowledge and experiences. These desires often arise from internal factors and intrinsic motivations.

The nature of the desire to learn

Initially, the desire to learn is associated with academic achievement, and students do not necessarily need their teachers' approval to have this desire. It depends on their willingness to acquire knowledge and skills they seek to satisfy this desire. The desire to learn is also linked to the pursuit of excellence, seeking to improve efficiency by acquiring new knowledge and skills. Additionally, the desire to learn can be associated with performance goals, striving to prove competence compared to others. Desire is considered a necessary condition for effective learning. The stronger and more intense an individual's desire and willingness to learn, the more likely they are to invest effort in their educational endeavors and stimulate their mental activity to benefit from their surrounding experiences (Abu Nasr, 2008, p.57).

Doppelt and Schun (2008) emphasize that the desire to learn is crucial for classroom discussions. If a person does not want to learn, no one will engage with them in that regard. To engage in a task, one needs the desire and motivation to learn. Without this desire, the motivation to perform the task will be lacking.

Therefore, motivating learners to learn is closely related to the execution of academic tasks and activities. Motivation and desire are essential and influential factors in educational situations. The success of learning depends on whether learners are motivated or not. Desire drives learners to achieve their learning goals (Filgona et al., 2020, p.16).

It has been observed that learners suddenly become attentive during discussions of events that trigger strong emotions and feelings within them. Emotions cannot be separated from the learning process. Brain research supports the idea of reducing tension in the classroom environment and activating positive emotional experiences to enhance learning opportunities. This is especially important in light of the increasing incidents of violence in schools over the past years, which instills fear and anxiety in students and distracts them from the learning process. Such incidents require communities to take responsibility for creating a suitable educational climate and motivating the desire to learn, in addition to instilling values and fostering emotional intelligence (Hardiman, 2013, p.67).

Hence, for deep and effective learning to occur, it is important for it to be preceded by desire, inclination, and motivation. We notice that both the mind and heart contribute to the process of learning, and this approach is called "Warrior Training." It involves recognizing the courage required to discover inclinations and desires for learning, which necessitates effort to open the heart and integrate it with the capabilities and potential of the mind (Pond, 2014, p.98).

Most schools operate based on the principles of rewards and punishments or use the stimulus-response method, behavior modification, or strict disciplinary approaches. This model, which has its roots in the 19th century, believes that human behavior is a result of environmental factors. However, research indicates that individuals who have a desire to learn do not solely rely on classrooms and teachers. They seek answers to their questions, and their minds are

always curious about how? Why? When? They have an innate desire to satisfy their inner curiosity for learning and knowledge.

Specifically, theories of functional behavior assessment (FBA) primarily focus on environmental factors and external incentives, while other theories reject the model entirely based on its simplistic portrayal of human behavior and motives. Among those experts who developed the cognitive control theory emphasizing internal control is William Glasser, who proposed the Choice Theory Internal. This theory comes from the cognitive model, and Glasser is a prominent figure in cognitive psychology. To discuss the nature of motives and their impact on individuals, Solo suggested engaging in the theory of self-assessment of behavior. He explained and described internal self-assessment and its nature in improving leadership skills and overall performance, to demonstrate the relationship between self-assessment motives. He emphasized that we constantly seek to fulfill the needs that motivate us.

According to William Powers, the developer of the theory of cognitive control, which is one of the early theories expressing internal control, humans control their actions, and the only way to force them to act as desired is through threats, intimidation, or through overwhelming physical force. Even this is considered a temporary solution, and educational studies (Waugh, 2002, p.16) indicate a set of important facts, which are as follows:

1. The First Truth: Students do not need rewards to learn.
2. The Second Truth: No matter how old individuals are, external rewards are less effective than internal motivation in promoting effective learning.
3. The Third Truth: Offering rewards for learning weakens intrinsic motivation and the internal desire to learn.

William Glasser, the originator of the Choice Theory and a globally recognized pioneer in the field of internal control psychology, points out that external events have a strong connection with what we choose to do or learn. However, external events do not cause our behavior; they only provide information. What we choose to do with that information is up to us. The theory of internal control, in general, and the Choice Theory, in particular, offer a precise model for understanding human behavior. They help us understand the truth that humans are active agents and not passive recipients. We learn that our actions originate from within us, and we are not determined by external incidents or incentives. Internal control psychology refutes the external control theory, which mistakenly considered it a logical model for understanding human behavior. When we apply the ideas of internal control psychology, we will find classrooms and schools that align with the truth that humans are internally driven towards external goals. We know that the challenge does not lie in how to force students to learn but in creating lessons and classroom environments that focus on and attract students' intrinsic and internal motivation. By doing so, we can effectively increase student engagement in the learning process.

Glasser (1990) has clarified that pleasure is the natural result of learning. The relationship between pleasure and learning is of particular importance in schools, and classrooms devoid of joy do not inspire students to engage in high-level academic work consistently. Skillful teachers create enjoyable and joyful classrooms that encourage academic excellence on a regular basis (Welsh, 2013, p.34).

Roggeveen (2014: 212) pointed out four factors for instilling a desire for learning in students:

1. Well-designed curriculum: The curriculum should have clear objectives, a defined timeline, and innovative teaching methods to present the course content effectively.

2. Use of diverse tools and techniques: Different tools and techniques should be utilized to align with students' learning styles, promoting better integration within the classroom.
3. Incorporation of various applications in the classroom: Including diverse applications in the classroom motivates students to take responsibility and encourages them to delve into analysis, interpretation, and inference.
4. Providing numerous illustrative examples: Offering various illustrative examples to students and engaging in close communication and connection with them through discussions and dialogues before and after the lesson.

By implementing these factors, educators can create a learning environment that fosters students' intrinsic motivation, enthusiasm, and active engagement in their academic pursuits. When students find the curriculum interesting, relevant, and tailored to their learning needs, they are more likely to develop a genuine desire to learn and excel in their studies. The use of varied teaching techniques and classroom applications helps accommodate diverse learning preferences and enhances students' understanding and retention of the subject matter. Moreover, regular interactions with students, providing ample opportunities for discussion and feedback, and establishing a positive teacher-student relationship can further contribute to a positive and stimulating learning atmosphere, which, in turn, nurtures a strong desire for learning among students.

The teacher is a fundamental factor in influencing students' level of desire to learn. Their proximity to students, their connection with them, and engaging in discussions with them, along with the amount and quality of parental care they provide, and their concern for students, all play a significant role in increasing students' motivation and desire to learn. On the other hand, the opposite is also true. If students have a teacher who lacks competence and academic expertise, treats them unfairly, fails to instill a sense of value for the subject matter in their minds, and does not have a positive impact on them or embarrasses them in some educational situations, then their desire to learn may be diminished.

In summary, the teacher's behavior, attitude, and competence are crucial factors that can either enhance or hinder students' motivation and desire to learn. A caring, competent, and supportive teacher who fosters a positive and encouraging learning environment can significantly increase students' intrinsic motivation and enthusiasm for learning. On the contrary, an unqualified, unsupportive, and unfair teacher can lead to a lack of interest and motivation among students. Therefore, the teacher's role and their ability to establish a positive teacher-student relationship are essential for creating a conducive learning environment that promotes students' desire for learning.

Research Methods

The experimental approach is considered one of the best scientific methods, as it involves the key elements of the scientific method. It begins with observing facts, formulating hypotheses, and conducting experiments to verify the validity of these hypotheses. In this approach, the researcher seeks to control the factors that may influence the experiment and observes the extent of the independent variable's impact on the individuals in the experimental group. Properly controlling experimental procedures is of great importance in experimental research so that we can attribute the differences between the experimental and control groups solely to the effect of the independent variable.

To implement the program, it is necessary to choose an appropriate school. Therefore, the researcher conducted several visits to schools that appeared in the random sample to assess the

conditions that facilitate conducting the experiment. The chosen school was "Al-Harthah Girls' Secondary School," and the research sample consisted of 60 female students.

The equivalence between the experimental and control groups

The researcher ensured the equivalence of the two research groups and provided the opportunity for the independent variable to precisely affect the dependent variable. The independent variable is undoubtedly a variable that can impact the dependent variable. To control for independent variables, a random procedure is followed at each step as much as possible. Thus, the researcher took great care to achieve equivalence between the research groups in the following variables:

- 1- Chronological age (in years)
- 2- Intelligence level test.
- 3- Educational attainment of the parents.
- 4- Monthly family income.
- 5- Living with parents.

To obtain the required information above, the researcher prepared an information questionnaire distributed to the students (both the experimental and control groups) before starting the experiment. Then, the information obtained from the school records for each student was compared with the assistance of the educational counselor at the mentioned school to ensure the accuracy of the information.

The Learning Desire Scale

The researcher developed a scale suitable for the nature of the current study's sample (secondary school students) and appropriate for the Iraqi environment. The initial version of the scale consists of 35 items formulated in a positive format, distributed across three domains. The first domain includes 12 items, the second domain includes 11 items, and the third domain includes 12 items. Each item is paired with three alternatives (Always, Often, Rarely), with weights assigned during scoring (3, 2, 1).

The scale items were presented to a group of experts specialized in educational, psychological, and counseling sciences, totaling 18 experts. Based on their opinions, all items were retained as they achieved an agreement rate of 80% or higher. The reliability of the scale was established using the test-retest method. The researcher applied the scale to a sample of 50 female students randomly selected from the Directorate of Education in Al-Rusafa Second. The researcher chose the Al-Bushra Secondary School for this purpose. Then, the researcher re-applied the scale to the same group after a 15-day interval from the first application.

Using the Pearson correlation coefficient for the application scores, the reliability coefficient was found to be 0.85, indicating good stability of the scale.

The procedures for building the training program

The researcher adopted the system approach or system approach in constructing the training program, which is defined as: "Organized, interconnected, and interactive steps that lead to the development of educational materials to achieve specific objectives and target a particular type of learners based on theoretical concepts and principles." It consists of four main components, which are: inputs, processes, outputs, and evaluation.

Organizing the content of the training program

Based on the training objectives for each session of the training program, the content has been specified to align with these objectives. Table (1) illustrates the content of the training program sessions:

Table.1 Content of the Experimental Program Sessions

The Topic	Objectives	The Training Methodology
Introduction	<ol style="list-style-type: none"> 1- The researcher and the students get to know each other. 2- Foster an atmosphere of affinity between the researcher and the students. 3- Introduce the students to the general objective of the program. 4- Familiarize the students with the rules and instructions of the program. 	Introductions
Beliefs about Intelligence	<ol style="list-style-type: none"> 1- Students understand the concept of beliefs about intelligence. 2- Students differentiate between different beliefs about intelligence (fixed mindset - growth mindset). 3- Students provide examples of beliefs about intelligence (fixed mindset - growth mindset). 	Discussion and Dialogue - Brainstorming
The Concept of Developmental Theory of Intelligence	<ol style="list-style-type: none"> 1- Students strive to achieve the objectives. 2- Students understand the concept of developmental theory and comprehend that intelligence is a flexible construct that can be improved. 	Lecture - Discussion and Dialogue - Reinforcement
Improving Self-Esteem	<ol style="list-style-type: none"> 1- Students become familiar with the steps to improve self-esteem. 2- Students apply the steps to improve self-esteem in their daily life situations. 	Discussion and Dialogue - Self-talk - Reinforcement
Positive and Negative Self-Talk	<ol style="list-style-type: none"> 1- Students become aware of their negative self-talk and thoughts in life situations and problems they encounter. 2- Students learn how to replace negative self-talk with positive self-talk. 3- Students practice positive self-talk skills. 4- Students learn to enhance self-confidence. 	Focus Strategy - Discussion and Dialogue
Replacing Negative Thoughts with Positive Thoughts	<ol style="list-style-type: none"> 1- Students practice replacing negative thoughts with positive thoughts. 2- Students become familiar with the steps of formulating positive thoughts and learn to modify negative thoughts. 	Lecture - Discussion and Dialogue - Reinforcement
Flexible Thinking Style	<ol style="list-style-type: none"> 1- Students learn the flexible thinking style. 2- Apply this style practically. 	Discussion and Dialogue - Self-talk
How Thoughts Affect Learning Desire	<ol style="list-style-type: none"> 1. Participating students become familiar with the concept of thinking and how thoughts form. 2. Increase students' awareness of the impact of thoughts on individuals' attitudes, emotions, and behavior. 	Discussion and Dialogue - Reinforcement
Learning Desire	<ol style="list-style-type: none"> 1- Students learn the concept of learning desire. 2- Recognize the importance of learning desire. 3- Investigate answers to difficult questions. 	Dialogue and Discussion - Brainstorming

The Topic	Objectives	The Training Methodology
Self-Determinants of Learning Desire	<ol style="list-style-type: none"> 1- Students strive to develop their abilities. 2- Believe in the concept of lifelong learning. 3- Enjoy reviewing their lessons. 4- Benefit from the experiences and successes of others. 	Dialogue and Discussion - Brainstorming - Reinforcement
Educational Determinants of Learning Desire	<ol style="list-style-type: none"> 1. Students benefit from the experiences and successes of others. 2. Students discuss with their peers' topics related to their studies. 	Dialogue and Discussion - Brainstorming
Social Determinants of Learning Desire	<ol style="list-style-type: none"> 1. Students have a desire for learning. 2. Students focus attentively in class. 3. Students prepare for lessons before starting them. 	Dialogue and Discussion - Brainstorming - Reinforcement
Enjoying Learning	That students appreciate the importance of making the educational situation significant and engaging.	Dialogue and Discussion
Concept of School Inclusion	<ol style="list-style-type: none"> 1. Students understand the concept of school inclusion. 2. Students explain the importance of school inclusion. 3. Students infer the characteristics of school inclusion. 	Lecture - Discussion and Dialogue
Emotional Inclusion	<ol style="list-style-type: none"> 1. Students understand the concept of emotional inclusion. 2. Students emotionally integrate within the classroom. 3. Students enjoy performing assigned tasks. 	Lecture - Discussion and Dialogue - Reinforcement
Behavioral Inclusion	<ol style="list-style-type: none"> 1. Students become familiar with the concept of behavioral inclusion. 2. Students behave inclusively in their school. 3. Students mention the importance of behavioral inclusion. 4. Students mention the characteristics of behaviorally inclusive students. 	Discussion and Dialogue - Reinforcement - Modeling
Closing Session	<ol style="list-style-type: none"> 1. Students mention the fundamental skills of the program presented to them. 2. Students evaluate the program. 3. Application of the post-measurement of the school inclusion and the desire for learning scales. 4. Verify the effectiveness of a training program based on the developmental theory of intelligence to improve school inclusion and the desire for learning among secondary school students. 	Questions and Answers

The statistical methods used in this research include the following:

- A- Chi-Square.
- B- Pearson Correlation Coefficient.
- C- T-test.

Results

The first objective of the study is to investigate the effectiveness of a training program based on the developmental theory of intelligence in enhancing the desire to learn among secondary school students. To achieve this objective, the following null hypotheses were formulated:

1- There is no statistically significant difference at the 0.05 level of significance between the mean scores of the experimental group students in the pre-test and post-test measurements regarding the improvement in the desire to learn among secondary school students. To test this hypothesis, the paired t-test was used for two correlated samples to assess the difference in the desire to learn. The mean score of the experimental group students in the post-test measurement was found to be 73.83, while the mean score in the pre-test measurement was 56.53. The calculated t-value was 5.037, which is greater than the tabulated t-value of 2.045 at a significance level of 0.05 and with degrees of freedom (29). Therefore, there is a significant difference in favor of the post-test measurement, as shown in Table (2).

Table.2 The results of the paired t-test for the scores of the experimental group in the pre-test and post-test of the desire for learning scale

Group	Measure	Number	Mean	Difference in Means	Standard Deviation	Degrees of Freedom	The t-value		level of significance
							calculated t-value	table t-value	
Experimental	Posttest	30	73.83	17.300	13.149	29	5.037	2.045	Posttest
	Pretest		56.53						

The null hypothesis is rejected, and this result is attributed to the fact that the program has effectively enhanced the students' desire for learning in its various sessions. There is no statistically significant difference at the 0.05 level of significance between the mean scores of the control group in the pre-test and post-test regarding the improvement in the students' desire for learning in the secondary stage. To test this hypothesis, a paired t-test was used for two correlated samples to assess the difference in the desire for learning. The calculated t-value (0.20) is lower than the tabulated t-value (2.045) at a 0.05 level of significance with 29 degrees of freedom, indicating that there is no significant difference between the pre-test and post-test measurements, as shown in Table (3).

Table.3 The results of the paired t-test for the scores of the control group in the pre-test and post-test of the desire for learning scale.

Group	Measure	Number	Mean	Difference in Means	Standard Deviation	Degrees of Freedom	The t-value		level of significance
							calculated t-value	table t-value	
control	Posttest	30	51.70	0.50	7.702	29	0.20	2.045	No significance
	Pretest		51.20						

Therefore, the null hypothesis is rejected, and this result is attributed to the fact that they were not exposed to the program. There is no statistically significant difference at the significance level (0.05) between the mean scores of the students in the experimental group and the mean scores of the students in the control group in the post-test for improving the desire for learning among secondary school students. To verify this hypothesis, an independent samples t-test was used to determine the difference in the desire for learning. The mean score of the students in the experimental group was (73.83) points, while the mean score of the students in the control group was (51.70) points. The calculated t-value was (7.955), which is greater than the tabulated t-value (2.021) at a significance level of (0.05) and with (58) degrees of freedom, indicating that there is a significant difference between the two groups, in favor of the experimental group, as shown in Table (4)

Table.4 Results of Independent Samples t-test for Posttest Scores of the Desire to Learn Scale.

Group	Number	Mean	Standard Deviation	Degrees of Freedom	The t-value		level of significance
					calculated t-value	table t-value	
Experimental	30	73.83	13.149	58	7.955	2.021	Experimental
control	30	51.70	7.702				

Discussion

The results related to the null hypotheses indicated that the experimental group, who underwent the training program, outperformed the control group, who did not receive the training program, in improving their learning desire. This superiority could be attributed to several reasons:

1. The training program was built on scientific principles and standards followed in designing and implementing training programs. The program considered the learners' needs and characteristics, and the researcher adopted a learning approach consisting of four stages (inputs, processes, outputs, and feedback). This organized and comprehensive approach contributed to the effectiveness of the program.
2. The methods and activities applied to the experimental group, including discussions and homework assignments, diversified their learning sources, leading to the improvement of their learning desire.
3. The clear presentation of general objectives and behavioral objectives at the beginning of each session facilitated the interaction of the students and provided them with a clear understanding of what was expected from them. This positively influenced the students' performance during the training program sessions.

Overall, the results suggest that the training program, with its organized approach, diversified learning sources, and clear objectives, positively impacted the students' learning desire in the experimental group compared to the control group, which did not undergo the training program.

Recommendations

- 1- Direct the efforts of educational officials in directorates of education towards organizing training programs and workshops aimed at enhancing students' learning desire in secondary schools.
- 2- Encourage teachers to utilize methods and approaches to improve students' learning desire.
- 3- Increase the number of training programs due to their significant importance in elevating positive thinking and social adaptation among secondary school students.
- 4- Expand training programs that aim to boost self-confidence and confidence in others to create a generation capable of appreciating their abilities and utilizing their skills for the benefit of themselves and society.
- 5- Develop a training program based on the developmental theory of intelligence and examine its impact on other variables such as motivation and self-efficacy.
- 6- Conduct an experimental study focusing on the effectiveness of a training program based on the developmental theory of intelligence in developing flexible thinking among secondary school students.

Conclusion

- 1- The previous results obtained in the current study clearly indicate that the program had a significant and effective impact on improving learning desire in the post-application assessment. The effect size of the program on the dependent variables was large, signifying the effectiveness of the training program for the experimental group.
- 2- There was a noticeable difference between the pre-test and post-test for the experimental group, favoring the post-test for the learning desire scale. This finding is evidence of the effectiveness of the training program.
- 3- A significant difference was observed between the post-test and the follow-up test, favoring the follow-up test. This indicates the continued effectiveness of the training program on the experimental sample even after a period of time.

These results underscore the success of the training program based on the developmental theory of intelligence in enhancing learning desire among secondary school students. The program's positive impact was evident in both the short-term and long-term assessments, highlighting its significance in promoting students' motivation and enthusiasm for learning.

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