

## THE EFFECT OF INTOSTEL MODEL IN DEVELOPING METACOGNITIVE SKILLS FOR SECOND-GRADE INTERMEDIATE STUDENTS IN SUBJECT OF SOCIAL STUDIES

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### Abstract

The current research aims to know (the effect of the Intostel model in developing metacognitive skills for second-grade students in the Intermediate school in social sciences) by verifying the validity of the following null hypotheses: -

1. There is no statistically significant difference at the level (0.05) between the average scores of the experimental group students who studied social studies according to the steps of the Intostel model and the average scores of the control group students who studied social studies according to the usual method in the metacognitive skills scale.
2. There is no statistically significant difference at the level (0.05) between the mean scores of the experimental group students who study social studies according to the Intostel model in the pre and post-application of the metacognitive skills scale.
3. There is no statistically significant difference at the level (0.05) between the mean scores of the students of the control group who study the social subject according to the usual method in the pre and post-application of the metacognitive skills scale.

The researchers applied the experimental design with partial control in the experimental and control groups and the pre and post-tests. The number of sample students was (64) students, with (32) in the experimental group and (32) students in the control group. They were chosen from Nasiriyah Directorate of Education-DhiQar Governorate. As the researchers conducted an equivalence between the two research groups in the chronological age variable calculated in months and the pre-test scores for the metacognition skills scale. The researcher studied the first two chapters of the book of the second intermediate class of the social subject. Then the researchers formulated the behavioral objectives of the historical subjects of the subject and they reached (104) behavioral objectives and built a measure of metacognitive skills in history subject for the second intermediate grade students, and its paragraphs reached (30) items. The researcher applied measure of metacognitive skills to a sample of students after collecting data for the students of the two research groups. After that, the researcher processed the data statistically in the spss program, version 19. At the end of the experiment, the researcher obtained results that can be summarized as follows: It is the superiority of the experimental group students who studied with the Intostel model over the students of the control group who studied by the traditional method used in the metacognition skills scale, while in the second hypothesis, the superiority was in favor of the experimental group in the post-scale of metacognitive skills in the social subject, but for the third hypothesis, there was no difference between the pre and post-tests for metacognitive skills in the social subject. Consequently of the results of this study, the researchers recommend that the Intostel model should be used in teaching social studies to second-intermediate students because it has an impact on developing metacognitive

skills for students. Finally, the researcher suggests conducting another similar study on the impact of the Intostel model on other branches of social sciences, such as the history of ancient civilizations and the history of Europe and America.

**Keywords:** Intostel model, skills, social studies.

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## **Chapter One:**

### **First: Research Problem**

Today, the world is witnessing rapid development in teaching methods, methods and various means. As the traditional means are no longer able to keep pace with progress, which has made them lose the ability to contribute to development effectively. In the field of knowledge, there is something new every day and social materials are part of this knowledge. Therefore, its teaching should not remain dependent on traditional teaching methods, as there must be a serious start in this field (Al-Bakr, 2002, p. 51). In addition to that, the history subject still suffers from problems when taught as a result of the nature of this subject and the changes that have occurred and gone through in terms of their causes and consequences (Al-Amin, 1983, p. 16).

However, in our schools in recent decades, a certain style of teaching has prevailed that depends on declamation, memorization and retrieval. Maybe one of the reasons for the emergence of this pattern, in general, is the methods and styles of teaching, as this led to the consolidation of the usual methods of teaching in our schools. Therefore this led to a significant drop in the level of education for students (Al-Samarrai, 2012, p. 11). Many students find it difficult to understand historical events and the reason is due to the content and organization of the historical material, which depends on containing a lot of information without focusing on the main points, which carries the minds of students beyond their capacity (Al-

Awadi, 1986, p. 20). By informing the researcher of the available studies that indicated a weakness in the teaching of history, especially descriptive studies such as the study (Al-Dulaimi 2001) and (Dara 2007).

In addition to the fact that the researcher is a teacher and has served more than 10 years in the field of teaching, he noticed this weakness from as well as during the interviews conducted by the researcher during his work with teachers of history, who numbered more than (30) teachers. He was concluded that most of the methods used in teaching social subjects are the traditional method for second-grade students. Moreover, traditional methods do not urge students to raise scientific questions and metacognitive skills, contrary to what the modern teaching process called for, which made the student the focus of the educational process and this encourages students how to develop skills. The researcher believes that the reasons for the poor development of metacognitive skills are due to teaching methods, so the researcher felt the need to conduct this research and formulate it with the following question: Is there an effect of the Intostel model in developing metacognitive skills for Intermediate school students in the subject of social sciences?

### **Second: The importance of research**

Scientific progress is the most important manifestation of changes, and the fruit of the efforts of many thinkers and the continuation of work to release the latent competencies of individuals (Nawfal and

Awad, 2010, p. 24). For this reason, education had great responsibilities in preparing individuals and providing them with what helps them to keep pace with this scientific progress and to follow its approach and adapt to it. In addition, the education function is to develop the capabilities of the individual, refine his tendencies, refine his nature, provide him with skills that benefit him in his life, provide the mind with modern ideas and information, and the transmission of cultural heritage between generations (Mahdi et al., 1993, p. 96).

Since the school is an educational institution created by the community to serve it, it derives its philosophy from the philosophy of the community to which it belongs. Hence, it builds its curricula and formulates its educational methods so as to achieve success in its message (Ibrahim, 2005, p. 39).

It is clear to us through the modern curriculum that the activities and study materials that were useful to students in the past not necessarily all useful at the present time, while what is useful from these activities and study materials at the present time may not all be useful in the future. Therefore, the process of taking care of the school curriculum is a very important step because it represents the main pillar and general framework of the educational process in all its dimensions (Ali, 2011, p. 19). Social subjects are characterized by the fact that their general subject is focused mainly on the study of man and human relations from its various dimensions in its past and present in its local, national, and global context and is not limited to that only but goes beyond that to an investigation of the conditions and factors that would develop those human relations (Al-Amin and others, 1997, p. 6). The lesson of studying social

subjects is not based on what the students are aware of facts, names, numbers, and dates, but rather the extent of the impact that these subjects leave on themselves and what they create in them of sound national and social trends and the extent of their interest in preparing a citizen who is able to play his role in the environment in which he lives and to work good for himself, his community and nation (Al-Titi, 2002, p. 15). On the other hand, the ability of the teacher to manage the class and organize experiences greatly affects the effectiveness of the lesson and the transfer of information to students, as well as the ability of the teacher to use teaching methods and various learning strategies helps in his knowledge of the appropriate teaching conditions for the application (Mareian and Al-Hilah, 2002, p. 25). In addition to that, the role of the teacher is important for helping students to think, generate ideas, organize experiences, and help them to reach different sources of knowledge (Cropley, 2002, p. 32).

The main objective of developing metacognitive skills is to teach students the skills by training them to think independently, direct themselves away from the teacher's indoctrination as much as possible, as well as give up a sense of inability as they become more aware of what they are doing. Furthermore, they become able to control their thinking and reflect on their actions when they want to reach a well-supported outcome. Also, they are distinguished as flexible and persistent in solving problems, using their mental skills, and have developed mental abilities (Nawfal and Saaifan, 2011, pp. 270-271).

The selection of the study sample is very important, which is the second intermediate class as the students realize their personal components, or they develop their

self-confidence, it is an appropriate stage for teaching the Intostel model. As described by (Jean Piaget), this is the stage of abstract operations, which is from the eleventh year onwards, in which the individual can practice abstract thinking, use logical thinking, analyze hypotheses and establish them, and reach conclusions, generalizations, and inferences (Melhem, 2006, p. 250).

So, through the researcher's work in the field of teaching social studies for more than (10) years, he decided to conduct this research on metacognitive skills for this sample of research as a field for conducting the experiment that is important for student participation in the field of scientific life. Based on what was previously mentioned, the importance of the current research can be summarized as follows:

- 1- The importance of the social subject for the second intermediate grade, as its contents enlighten students with facts and concepts that contribute to understanding Islamic history.
- 2- The importance of the Intostel model is that it contributes to the generation and development of new ideas for the better.
- 3- Confirmation of modern educational trends of the importance and necessity of developing metacognitive skills through study subjects, especially for second-grade intermediate students.
- 4- The importance of the intermediate stage in the upbringing of students and preparing them for life and to proceed on to other educational stages.
- 5- This study may benefit those in charge of planning and developing curricula and teaching methods in terms of the feasibility of applying the Intostel model.
- 6- This is the first local study according to the researcher's opinion and knowledge, which referred to the development of metacognitive

skills in social studies for second-grade intermediate students through the Intostel model (to the knowledge of the researcher).

### **Third: Research Objective and Hypotheses**

The current research aims to know (the effect of the Intostel model in developing metacognitive skills for Intermediate school students in the subject of social studies) by verifying the validity of the following null hypotheses:

- 1- There is no statistically significant difference at the level (0.05) between the average scores of the experimental group students who studied social studies according to the steps of the Intostel model and the average scores of the control group students who study social studies according to the usual method used in the metacognitive skills scale.
- 2- There is no statistically significant difference at the level (0.05) between the mean scores of the experimental group students who study social studies according to the Intostel model in the pre and post-application of the Metacognitive Skills Scale.
- 3- There is no statistically significant difference at the level (0.05) between the mean scores of the students of the control group who study the social subject according to the usual method in the pre and post-application of the metacognitive skills scale.

### **Fourth: Research Limits**

The current study is determined by the following:-

- 1- Human boundaries: This study was applied to second-grade intermediate students.
- 2- Spatial boundaries: the study was limited to one of the governmental intermediate or secondary day schools in DhiQar Governorate for Boys affiliated to the General Directorate of Education in DhiQar.

3- Time limits: This study was applied in the second semester (the second course) of the academic year (2019-2020).

4- Scientific boundaries: The first two chapters of the Sociology book.

### **Fifth: Definitions of Study Terms**

#### **1- The Effect**

- a) A Language: (The rest of the thing and the plurals are traces and effects, and I came out in its trace, i.e. after it, and its effects followed its trail). (IbnManzur, 1999, vol. 1, p. 17).
- b) Idiomatically: It is the result of a desirable or undesirable change that occurs in the learner as a result of the learning process. (Shehata and Al-Najjar, 2003, p. 22).
- c) Procedural definition: It is the amount of change that occurs in the scores of the experimental group of students in metacognitive skills in the subject of social studies.

#### **2- Model**

a) A Language:

Model: By adding the hamza to the attribute of the thing, i.e. a form that takes the form of the thing's form in order to know from it its condition. (Al-Zubaidi, 2004, vol. 6, pg. 250).

b) Idiomatically: Qatami and Qatami is defined the model as a plan that can be used to organize the work of the teacher and his skills from different educational and teaching materials and experiences. (Qatami and Qatami, 1998, p. 29).

c) Procedural definition: The model is defined as a set of educational steps that aim to organize the lesson and its educational positions so that students learn the scientific content of Arabic and Islamic history in order to achieve the educational aim in the classroom.

#### **3- Intostel**

Intostel:

Ali and Al-Mashhadani defined it as one of the important educational models that explain learning methods, as this model contains three orientations that are related to different motives. It results in certain learning approaches that the individual uses in different learning situations during the learning process and It leads to different levels of understanding. The most important orientations that result in the different approaches to learning are (the orientation toward personal meaning and resulting in the deep entrance, the orientation toward productivity and resulting in the superficial approach, and the orientation toward achievement and resulting in the strategic approach) (Ali and Al-Mashhadani, 2014, pg. 46).

Procedural definition: It is a teaching model that includes three educational steps and aims to activate learning methods in scientific problems related to history classes for second-grade intermediate students.

#### **4- Development**

a) Linguistically: Grew, grows, grown and God has grown it, increased in its growth, and I have grown the person in lineage, that is, I raised him (Al-Farahidi, 2003, vol. 4, p. 170).

b) Idiomatically some of the writers and researchers defined development terms as follows:

Al-Hiti and Hamid defined development as that it is: The change that is intended to transform social life from one condition to a better one, and development takes place in a deliberate way directed to bring about specific changes in different social life (Al-Hiti and Hamid, 1985, p. 12). Zayer and Dakhil defined development as that it is: The development



and progress of the learner as a result of his exposure to effective educational variables (Zayer and Dakhil, 2012, p. 157).

c) Procedural definition of development: It is the noticeable progress and development that occurred in the degrees of metacognitive skills for the students of the experimental group, compared with degrees of the students of the control group.

## 5- Skill

a) A Language:

Skill: a skill, then he is skilled, a person's dowry in something, i.e. perfected it, and he is skilled with it, if I master it deftly, and the plural of the word skill is skills, and the skilled: the clever in every action.

b) Idiomatically: Al-Hashimi and Al-Dulaimi defined it as the performance that the individual performs quickly, easily and accurately, whether that performance is physical or mental while saving time, effort, and costs (Al-Hashimi and Al-Dulaimi, 2009, p. 23).

c) Procedural definition of skill: it is the learner's ability to progress easily and accurately with the time saving for students of the research sample in the subject of Arab and Islamic history.

## 6- Metacognitive

a) Idiomatically: Metacognition was known by some researchers as follows:

**Nawfal and Saaifan**, it is a process of realizing the different types of mental skills that we will use and planning how we will do and reflecting on how we will orient ourselves during the implementation of this planning. (Nawfal and Saaifan, 2011, p. 267).

**Al-Afoun and Abdel-Sahib** defined metacognitive that it is as: Control processes that control mental processes in terms of

planning for their use, how to implement and monitor them, and evaluate their various results (Al-Afoun, Muntaha, 2012, p. 193).

b) Procedural definition of metacognition: It is a higher mental process that includes a set of skills for the students of the research sample and includes the skill (planning, monitoring and evaluation).

## 7- Intermediate stage

It is the school stage that follows the primary stage in Iraq, the study period is three years, its function is to prepare for scientific life, and it includes the grade (first, intermediate, second, and third). (Republic of Iraq - Ministry of Education, 1990, p. 5).

## 8- Social Subjects

a) Al-Sakhawi defined the subject of social studies that it is an art in which he examines the facts of time in terms of specification and timing everywhere in the world (Al-Sakhawi, 1963, p. 17)

b) Procedural definition: It is the scientific content of knowledge, information, terminology and concepts that are included in the first and second chapters of the social book to be taught by the Ministry of Education for students of the second grade average for the academic year 2019-2020.

## Chapter Two

### Theoretical aspects and previous studies

#### The First Axis: Theoretical aspects

Every researcher must be aware of the theoretical aspects to which the independent variable or independent variables refer to determine the foundations on which it was built, whether these aspects are theoretical or theories he relied on, educational approaches, strategies, or general methods of education. Undoubtedly, the Intostle model has its

theoretical roots in the constructivist theory, which is one of the cognitive learning theories that encourage active participation and effective interaction between teachers and learners. Moreover, it is a theory that focuses on activities and requires discussion and debate among learners, it also focuses on classroom activities that encourage learning. (Barghout, 2008, p. 19).

#### ❖ Principles of Constructivist Theory

The constructivist theory is based on several basic principles, the most important ones are mentioned below:

- 1- Previous learner's knowing in light of his previous experience.
- 2- Learning does not happen unless there is a change in the individual's cognitive environment.
- 3- Learning occurs best when the educated individual faces a problem of a learning task.
- 4- The learner does not build his knowledge in isolation from others, but rather from social negotiation and contact with others.
- 5- The occurrence of the conceptual growth of the student from displaying and responding to multiple points of view and sharing it with others, thus reaching the building of his knowledge (Al-Najdi et al., 2005, p. 305).

#### ❖ Advantages of the constructivist theory

The constructivist theory has several advantages, most notably the following:

- 1- Constructivism considers the student as an active learner who builds knowledge, understanding and activity, in addition he interacts with the teacher and other students and exchanges different points of view with them.
- 2- In the constructivist theory, the learner is based on collective participation, as He builds his understanding and the meaning through mental activity.

- 3- Constructivism view to the teacher as a supervisor and facilitator of the teaching process (Qatami, 2013, p. 348).

#### ❖ Entwistle model

In 1981, researcher Entwistle established his model in the United Kingdom, and he built it on the basis of the relationship between learning methods and its results. he designed the Entwistle model on the basis that there are trends associated with several motives that lead to learning methods used by the learner in different learning situations, as a result it leads to several levels of understanding. These trends are:

- 1- Orientation towards meaning, that is, the educated individual tends during learning to form a special personal meaning for what he learns.
- 2- Orientation towards the reproduction of knowledge, that is, the learner repeats the educational content in the manner he deems appropriate.
- 3- Orientation towards achievement, that is, the learner's tendency to develop skills and achievement, which appears in the grades that the learner obtains (Attieh, 2016, pp. 79-98).

Based on the previously orientations of learners towards learning, learning according to this model shows the existence of three learning styles according to what the learners prefer, and these styles are:

#### 1- Deep learning style

Learners, according to this style, are characterized by their strong desire to search for meaning and not directly submit to information. Rather, they are distinguished by thinking and scrutinizing the information before accepting it, while trying to link the new learning and the experiences they previously had with their ability to link and

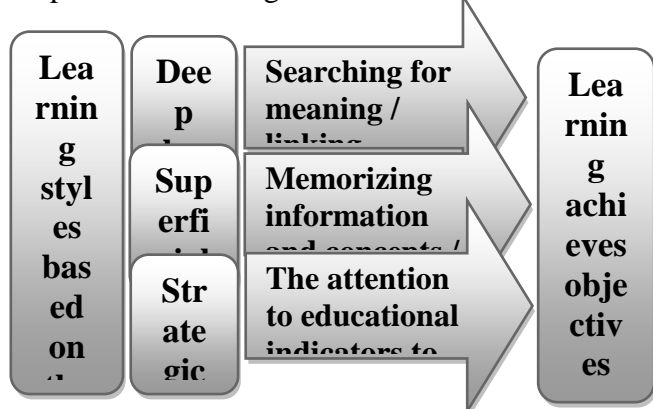
integrate ideas with them to reach the evidence and proofs about the new information.

## 2- Superficial learning style

Learners are distinguished according to this style that they are interested in the process of memorizing the information that is related to the process of performing the final exams, as the learners depend according to this style on clear instructions and logical ways to access and learn information. Thus this leads to the process of memorizing the educational content and the facts, concepts, and information it contains and remembering them well.

## 3- Strategic learning style

Learners depend on this style, especially those who often have a negative attitude towards study, meaning that success is the purpose of their learning. As a result, learners according to this model always try to obtain hints or signals from teachers about educational situations to reach the desired learning for them (Attieh, 2016, p. 48) (Ali and Al-Mashhadani, 2014, p. 100). Figure (1) describes the general model of the learning process according to the Intostel model:



**Scheme (1):** illustrating learning according to the Intostel model from the work of the researcher.

### ❖ Metacognition skills

The scientist (Sternberg) classified metacognitive skills into the skill (planning, monitoring, and evaluation), which are as follows:

**First: Planning:** It is represented in the individual's ability to set and define specific aims that he seeks to achieve from the learning process and this includes preparing a specific and clear action plan that includes appropriate learning strategies. In addition to that the process of organizing time and identifying learning resources, all in order to achieve the aims that he sought to achieve. Planning also means the ability to suggest lesson objectives, allocate time and choose appropriate strategies, and it is a means of organizing in a logical manner the elements related to the topic.

Planning is the starting point in any work, and planning has become an evolving and continuous process. Planning includes the following sub-skills:

- Determining the objective and feeling the existence of a problem and determining its nature.
- Test the execution strategy and its skills.
- Arrange the sequence of steps or processes.
- Determining the methods of facing difficulties and errors.
- Prediction of desired or expected results. (Al-Salami, 2012, p. 29)

**Second: Monitoring:** It means the individual's awareness of the learning strategies which he uses and his ability to use alternative strategies to correct understanding and performance errors. It also means the ability to summarize, write notes, link new information with previous information, and visualize real applications. Monitoring also refers to the processes and strategies that the learner uses to monitor and follow up the implementation of the pre-prepared plan to achieve the cognitive objectives. Monitoring includes the following sub-skills:



- Stay on target in the focus of attention.
- Maintain the sequence of processes or steps.
- Knowing when to achieve the sub-objective.
- Knowing when to must be a move to the next processes.
- Discover obstacles and errors.
- Knowing how to overcome obstacles and get rid of errors (Al-Rimawi, 2006, pg. 327).

**Third - Evaluation:** It means the ability of the individual to review what he has learned and judge the extent to which aims are efficiently achieved, the ability to analyze performance, and effective strategies after learning has occurred. The ability of the learner to set a standard for his performance, to notice and evaluate his mistakes in order to improve the learning process. It is also represented in the ability of the individual to examine and test his performance and responses in a careful manner and includes the following sub-skills:-

- Evaluation of the extent to which the objectives have been achieved.
- Judging the accuracy and adequacy of the results.
- Evaluate the suitability of the methods used.
- Evaluate how to handle obstacles and errors.
- Evaluate the effectiveness of the plan and its implementation. (Al-Asadi, 2013. p. 77).

### **The Second Axis: Previous studies**

#### **❖ Study of (Al-Sabati, 2002)**

This study was conducted at King Faisal University, Jordan and aimed to identify (the differences in the learning styles of university students in the light of specialization and the

level of academic achievement) and the researcher followed the descriptive approach to achieve the objective of this study, as the study sample amounted to (119) students. Then the researcher chose university students and the research tool was Modified Learning Methods (Intostell) in 1994. The study period lasted a full semester. The result obtained was that there were no statistically significant differences for the superficial method between high and low academic achievements (Al-Sabati, 2002, S-Z).

#### **❖ • Study of (Al-Azawi2016)**

This study was conducted at the University of Diyala, and it aimed to know (the effect of using Intostel and Biggs models on expressive performance and the development of creative thinking among Intermediate school students), and the researcher followed the experimental method to achieve the aim of this study. The sample of this study was (67) students distributed as (22) students for the first experimental group, (22) students for the second experimental group, and (23) students for the control group. Then the researcher chose the second-grade average sample of the study, and the duration of the study took an entire semester. The result of the study was the superiority of the students of the two experimental research groups over the students of the control group in expressive performance and the development of creative thinking (Al-Azawi, 2016, D-R).

### **Benefiting from previous studies**

- Choosing the research methodology and procedures.
- Choosing the research community, its sample, and statistical methods.
- Choosing the appropriate experimental design to conduct his research.

- Obtaining the sources of his research problem and its importance.

### Chapter Three:

#### Research Methodology and Procedures

##### First- Research Methodology

The researcher followed the experimental method for its suitability in achieving the objectives of the current research.

##### Experimental design

It means careful planning of the hypothesis proofing process, and taking integrated measures for the experimentation process, by developing an experimental plan by which the researcher aims to achieve his hypotheses, or reject them. (Abdul Rahman, Zanganeh, 2007, pg. 477). As a result of what was mentioned above, the researcher depended on the experimental design with partial control in the experimental and control groups, and the pre and post-tests. Table (1) illustrates this.

**Table 1. Experimental design of the research**

Group	Independent variable	Dependent variable	Tool
Experimental	Intostel model	Develop metacognitive skills	A measure of metacognition skills
Control	-----		

##### Second - Research Population and its sample

The research community is a scientific and methodological term intended for everyone to whom the results of the research can be generalized, whether they are individuals, books, or schools. This is according to the subject area of the research problem (Al-Assaf, 1987, p. 91). Because the research community is Intermediate school students in DhiQar Governorate, the medium (generations for boys) affiliated to the Nasiriyah Education Department, General Directorate of Education in DhiQar Governorate were chosen at random to represent the field of an experiment by simple random withdrawal. Division (A) and its members (35) students were selected and the students who failed were (2) were excluded. After that, the number became (33) students to represent the experimental group whose students are exposed to the independent

variable (Intostel model). Division (B) was chosen and its individuals (34) students, then the students who failed, (1) student were excluded, and the total number of students became (33) students. They also represent the control group whose students studied social studies in the traditional way.

##### Groups Equivalence

Before starting the experiment, the researcher was keen to make statistical parity between the two research groups in some variables that I think to affect the accuracy and validity of the experiment. Therefore, the researcher identified the following variables:

##### 1. Chronological Age, in Months

The average age of the experimental group students was (189.51) months, and the average age of the control group students reached (190.88) months. When using the T-test for two independent samples of equal number, it became clear that the difference is not statistically significant at

the level of (0.05), and the Table (2) illustrates this.

Table (2) represents the results of the T-test for the chronological age of the students of the two research groups, calculated in months

Group	Number of sample individuals	Arithmetic mean	Standard deviation	Variance	Degree of freedom	T value		Statistical significance
						Calculated	Tabular	
Experimental	32	189.58	8.876	78.783	62	0.423	2.000	Non-statistical significance
Control	32	190.88	8.657	74.943				

## 2. The **tribal** measure for the two research groups in the metacognitive skills scale

The tribal scale of the metacognitive skills scale was applied to the two research groups on Sunday 4/2/2018. It was found that the average scores of the experimental group

were (57.67) degrees, and the average scores of the control group were (56.48) degrees. When using the T-test for two independent samples equal in number, it became clear that the difference is not statistically significant at the level (0.05), and Table (3) shows this.

Table (3) represents the results of the T-test for students of the two research groups in the tribal measure

Group	Number of sample individuals	Arithmetic mean	Standard deviation	Variance	Degree of freedom	T value		Statistical significance
						Calculated	Tabular	
Experimental	32	57.67	9.553	91.259	62	0.532	2.000	Non-statistical significance
Control	32	56.48	8.766	76.842				

### Third: Controlling some internal variables (non-experimental) :

The aim of the researcher is to adjust the internal variables. Internal variables mean that the variables are not included in the research design but affect its results. The aim of controlling the internal variables is to remove any effect of any variable other than the independent variable and thus reduce the variation of error (Melhem, 2000, p. 72).

There are two types of factors that may affect the safety of the experiment:-

a) External factors, including the following:

#### 1. Selection of the sample members:-

The sample should be properly representative of the original community using objective and scientific criteria to measure the required behavior to be studied (Al-Dulaimi, 2011, p. 98). The researcher tried to avoid, to the extent possible, the differences in the selection of the sample due to its impact on the results of the research by equivalence the two variables (Chronological age of students is calculated in months and Metacognition skills test)

## **2. Experience conditions and associated incidents**

Concomitant incidents are the potential events during the trial period that have an impact on the dependent variable as well as the impact of the independent variable (Al Zawbaie, 1981, p. 95). The experiment in the current research has not been exposed to emergency conditions that hinder its progress and affect the dependent variable as well as the effect of the independent variable, such as (infectious diseases - travel, etc.), and therefore did not occur during this period.

## **3. Experimental extinction:**

A shortage of members of the two search groups or one after the trial has begun and before the post-test will affect the dependent variable. (Al-Assaf, 1987, p. 310) The present research has not been exposed to such cases except for absences, which were almost equal in the two groups.

## **4. Processes related to maturity**

This factor includes all the biological, psychological, or mental variables that occur in the individual who undergoes the experiment, which affects the accuracy of the results of the study (Abbas, 2007, p. 176). This factor did not have any effect, because the duration of the experiment is equal for the two research groups which are started on Monday, 5/2/2018, and ended on Sunday, 6/5/2018.

## **5. Measuring tool**

The researcher must choose a standardized tool with the two research groups in order to ensure that the results are truthful, consistent and objective (Abbas, 2007, p. 77). Therefore, in this study, the researcher used a standardized tool to measure the dependent variable among the students of the two research groups, and the researcher built a measurement of the skills of the trainees of the

second intermediate grade in the subject of history, which is characterized by sincerity, consistency, and objectivity after the approval of the experts, appendix (1).

## **6. Physical conditions**

These are the external characteristics and indicators of the place where the experiment takes place, from lighting, ventilation, and noise, which influence the behavioral patterns studied or the variables of the research (Abdul Rahman and Zankana, 2007, p. 221).

## **B: Internal factors**

### **1. Experimenter**

The researcher himself studied the students of the two research groups, and this adds a degree of accuracy and objectivity to the results.

### **2. Subject**

The subject of the experiment was unified for the two experimental and controlled research groups in the first semester. The first two chapters were from the book of the Arab-Islamic history for the intermediate of the second grade which is scheduled to be taught for the academic year 2017-2018.

### **3. Duration of the experiment**

The duration of the experiment was equal, as it started on Monday, 5 February 2018, and ended on Sunday, 6 May 2018.

### **4. Distribution of ration**

This factor was controlled by the equal distribution of lessons between the experimental and control groups, as the researcher studied the two research groups at two lessons per group per week.

### **5. Educational aids**

The researcher used the same teaching methods for the two research groups when teaching the subject of Islamic history to the students of intermediate of the second grade in

an equal manner: blackboard, colored chalk, educational poster, and educational cards.

#### 6. School building

The researcher applied his experiment in aIntermediate school (Al-Ajyal Boys) in the area of Ur in the district of Al-Nasiriyah.

#### Fourth: The requirements of the research:

##### a) Determination of the scientific material:

During the experimental period, the researcher studied the first and second semesters of the history book which is taught for the first course of the academic year (2017-2018), which is scheduled by the Ministry of Education for the intermediate students of second-grade. **Table 1**, illustrated the academic content of the chapter for the 1<sup>st</sup> and 2<sup>nd</sup> semesters.

Table 1: Academic content of the first and second semesters of the history book for the intermediate students of second grade.

Chapter	Chapters Content	Number of content pages
<b>First</b>	Makkah Al-Mukarramah before Islam	<b>5-40</b>
	Islamic Call	
	Attempting to spread the Islamic Call outside Makkah Al-Mukarramah	
	Immigration to Medina (Yathrib)	
	Battle of Badr in 2 AH	
	Battle of Al-Ahzab (Al-Khandaq) 5 AH	
	Jews conspire against the	

	Muslim Arabs	
	Efforts of the Prophet Muhammad Peace be Upon Him in building the state	
<b>Second</b>	Islamic Arab State in the Era of the Rashidun Caliphs (peace be upon them) (11-41 A.H.)	<b>41-63</b>
	Imam Ali bin AbiTalib, peace be upon him, from the year 35-40 A.H	
	Arab Islamic conquests	
	Conquest of Iraq and the Qadisiyah incident, 15 A.D/637	
	Building state institutions	
	Maritime interest	

##### b) Setting behavioral goals

The behavioral objectives of the research were determined 104 objectives for three levels of Bloom's classification of the Knowledge domain (knowledge, understanding, application) for the first and second semesters of Islamic history.

##### c) Preparing teaching plans

Researcher prepared (12) models of teaching plans. For each group, six teaching plans were prepared. and presented two models to the experts, one for each plan. They received approval by more than (80%).

##### Fifth: A research tool

To verify the impact of the Intostel model in developing metacognitive skills for the



intermediate students of second-grade in history. The researcher relied on building a unified tool for both groups which is a measurement of the Metacognitive Skills.

#### **a) Metacognition Skills Scale**

The researcher relied on building the research tool for the metacognitive skills scale that the researcher built-in Appendix (3), after informed many scales, including (Hassoun, 2006), (Al-Hadidi 2012), (Al-Azawi 2013), and (Al-Alawi 2012) scale.

#### **b) Scale description**

The scale consists of (30) paragraphs representing various subskills distributed over three main skills. The researcher has identified three skills for the current research:

##### **1. Planning skill**

It includes awareness of specific strategies to achieve specific goals, sense of a problem, arranging of operations, identification of obstacles, identification of coping methods, and prediction of possible outcomes.

##### **2. Monitoring skill**

It means: Review the progress towards achieving the major and minor objectives, modifying behavior and focusing on the objective, knowing when the objective is achieved and knowing when to move to the next process.

##### **3. Evaluation skill**

It is to assess the progress of specific processes, assesses the achievement of objectives, judges the accuracy and adequacy of results, assesses the suitability of the methods used to achieve the objective, and assess the effectiveness of the plan and its implementation (Al-Salami, 2012, pp. 29-30).

#### **c) Correction method and degrees calculation**

For each test paragraph, the researcher has developed three alternatives for the answer. One indicates a thorough knowledge of the

paragraph topic and is given three degrees, the other indicates a superficial or incomplete knowledge of the paragraph topic and is given two degrees, the third indicates an incorrect knowledge of the paragraph topic and is given one grade.

Thus, the first alternative (always applicable to me), takes three degrees, the second alternative (sometimes applicable to me), takes two degrees, the third alternative (never applicable to me) takes one degree, and the student chooses from the paragraphs of the scale one of the alternatives.

#### **d) Virtual honesty**

A better way to extract virtual honesty is for a number of arbitrators and specialists to assess the extent of the paragraphs representing the quality to be measured. The researcher presented the metacognitive skills scale to several arbitrators, educators, psychologists, and methods of teaching history (Appendix 1). The arbitrators agreed that it could be used in the current research.

#### **e) Scale stability**

The researcher applied the measure to a sample of 30 students from the research community to find the correlation coefficient using the Pearson correlation coefficient and the split-half method. That is, one test is given at a time. After answering the test paragraphs, the individual paragraphs are separated and form one test, the even paragraphs are then separated into another test, the results of each of the odd and even paragraphs are extracted separately as if they were two separate tests, then the correlation coefficient between these two tests is calculated (Al-Dulaimi and Al-Mahdawi, 2005, p. 135). If the reliability coefficient is 0.82, it is considered a good correlation factor.

### Sixth: Statistical analysis of the scale paragraphs

The researcher performed a statistical analysis of the scaling paragraphs to find the power of discrimination of the scaling paragraphs through the T-test to find the relationship of

the total degree to the degree of each of the scaling paragraphs in internal consistency. The tabular (2,000) to compare them with the calculated T value, as shown in Table (2).

**Table 2: Power of discrimination of metacognitive skills paragraphs**

Paragraph	Upper group		Lower group		Calculated T-value	Statistical significance 0.05
	Arithmetic mean	Arithmetic mean	Arithmetic mean	Arithmetic mean		
1	2.88	0.978	2.01	0.921	5.418	function
2	2.96	0.861	2.11	0.871	7.169	function
3	2.78	0.793	2.209	0.678	6.878	function
4	2.55	0.662	1.93	0.587	5.188	function
5	2.76	0.610	1.91	0.617	7.709	function
6	2.61	0.587	2.13	0.983	3.807	function
7	2.11	0.556	1.53	0.513	6.824	function
8	2.43	0.640	1.70	0.553	12.087	function
9	2.32	0.887	1.81	0.677	5.501	function
10	2.40	0.675	1.69	0.570	6.172	function
11	2.69	0.692	1.82	0.787	9.333	function
12	2.71	0.699	1.89	0.680	13.964	function
13	2.63	0.901	1.55	0.874	9.840	function
14	2.03	0.872	1.13	0.781	8.734	function
15	2.45	0.783	1.44	0.871	10.412	function
16	1.99	0.532	1.05	0.583	11.533	function
17	2.86	0.871	1.07	0.677	13.435	function
18	2.91	0.763	2.12	0.600	5.35	function
19	1.96	0.845	1.05	0.581	6.888	function
20	1.88	0.921	1.03	0.772	7.589	function
21	1.71	0.676	1.09	0.701	3.006	function
22	1.95	0.555	1.17	0.879	10.161	function
23	2.01	0.526	1.22	0.511	14.390	function
24	1.74	0.578	1.04	0.732	11.727	function
25	2.86	0.595	1.99	0.700	5.667	function
26	1.56	0.432	1.12	0.483	9.233	function
27	2.06	0.832	1.34	0.697	8.731	function
28	2.56	0.663	2.29	0.640	6.45	function
29	1.99	0.872	1.19	0.538	5.21	function
30	1.97	0.556	1.14	0.638	10.327	function

**Table 3: Relationship of the degree of the paragraph to the overall degree of metacognitive skills paragraphs**

Paragraph	Correlation coefficient	Paragraph	Correlation coefficient
1	<b>0.34</b>	16	<b>0.33</b>
2	<b>0.29</b>	17	<b>0.35</b>
3	<b>0.36</b>	18	<b>0.39</b>
4	<b>0.47</b>	19	<b>0.51</b>
5	<b>0.31</b>	20	<b>0.39</b>
6	<b>0.32</b>	21	<b>0.34</b>
7	<b>0.32</b>	22	<b>0.43</b>
8	<b>0.45</b>	23	<b>0.31</b>
9	<b>0.41</b>	24	<b>0.40</b>
10	<b>0.36</b>	25	<b>0.31</b>
11	<b>0.49</b>	26	<b>0.039</b>
12	<b>0.42</b>	27	<b>0.47</b>
13	<b>0.35</b>	28	<b>0.48</b>
14	<b>0.47</b>	29	<b>0.53</b>
15	<b>0.51</b>	30	<b>0.38</b>

Note that, the relationship in the above table means the relationship of the degree of each of the scale paragraphs to the total degree of the scale.

#### **Seventh: Application of the experiment**

The researcher started applying his experiment to the students of the experimental and control research groups on Monday, 5 February 2019, by studying the first two chapters of the Social Science book for the intermediate students of second-grade, which is scheduled to be taught for the academic year 2019-2020, at two lessons per week for the experimental and control groups. The experiment ended on Sunday, 6 May 2018.

#### **Eighth: Statistical Methods**

The researcher used standardized statistical methods SPSS (version 19) to:

1. T-test of two independent and correlated samples:  
for equivalence between the experimental and control research groups, as well as to find out the statistical difference between the null

hypotheses between the experimental and control research groups.

2. Peronist correlation coefficient:  
The researcher used the Pearson correlation coefficient to find out the stability by the split-half method of the scale paragraphs as well as the correlation between the total scale degree and paragraph degree.
3. Percentage equation:  
The researcher used it to find the percentages of development.

#### **Chapter Four:**

Presentation and interpretation of results:-  
This chapter includes the presentation and interpretation of research findings, conclusions, recommendations, and suggestions.

#### **First main hypothesis:**

There is no statistically significant difference at the level (0.05) between the mean degree of the experimental group students who studied the history subject according to the steps of

the Intostel model and the mean degree of the control group students who studied the subject of Social Science according to the traditional

method which used in the metacognitive skills scale as displayed in Table 4.

**Table 4: Results of the dimensional scale of the students in the two research groups, the experimental and the control in the metacognitive skills scale.**

Group	Number of the sample	Arithmetic mean	Standard deviation	Variance	Degree of freedom	T-value		Significance at 0.05
						Tabular	Calculation	
Experimental	32	65.44	8.238	67.864	62	5.887	2.000	Statistical function
Control	32	56.75	8.629	74.459				

### Second main hypothesis

There is no statistically significant difference at the level (0.05) between the mean degree of the experimental group students pre and post-

scale degrees in the metacognition skills scale who studied social science according to the steps of the Intostel model as illustrated in Table 5.

**Table 5: Results of the T-test between pre and post-scale degrees for the experimental group students in metacognitive skills.**

Experimental group	percentages of development	Application	Total of degree	Difference between the two tests	Arithmetic mean of difference	Standard deviation of difference	Degree of freedom	T-value		Significance at 0.05
	015	Pre	1807	275	8.593	6.162	31	Tabular	Calculation	Statistical function
		Post	2082					7.634	2.000	

### Third main hypothesis

There is no statistically significant difference at the level (0.05) between the average degree of the control group students pre and post-

scale degrees in the metacognition skills scale who studied social science according to the steps of the traditional method as displayed in Table 6.

**Table 6: Results of the T-test between pre and post-scale degrees for the control group students in metacognitive skills.**

Control group	percentages of development	Application	Total of degree	Difference between the two tests	Arithmetic mean of difference	Standard deviation of difference	Degree of freedom	T-value		Significance at 0.05
	0.02	Pre	1792	32	0.750	3.793	31	Tabular	Calculation	Not statistically significant
		Post	1824					1.119	2.000	

When analyzing the result, the researcher found the agreement of the current study with

previous studies, such as the study (Al-Sabati' 2012, and Al-Azawi 2016), on the superiority of the students of the experimental group over the students of the control group.

### **Interpretation of results:-**

The researcher presented the results as follows:

1. The Intostel model makes students the focus of the educational process. This is what the researcher concluded through the experiment, which led to an increase in his desire to learn. This helped the students raise the level of metacognitive skills, and this was clear from the averages of the students in the experimental group.
2. The Intostel model increases students' learning of metacognitive skills, which leads to students getting excited about social science learning.
3. Intostel model helps students understand their different ideas and helps them to become more ready towards the subject and develop different scientific skills.

### **Conclusions**

- ✓ It is evident through the degrees of the metacognitive skills scale for the experimental group that growth has occurred increasingly more than the control group who studied the Social science of the intermediate students of second-grade.
- ✓ The use of the traditional teaching method does not develop the meta-cognitive skills of the intermediate students of second grade.

### **Recommendations**

From the results of the research, the researcher recommended the following:

- Reliance on the use of the Intostal model in the teaching of Social Science for the intermediate students of second-grade which

has an impact on the development of metacognitive skills.

- Work on the researcher's agreement with the Directorate of Preparation and Training to provide teachers and train them on the steps of the Intostel model in the subject of social science.

### **Suggestions**

From the research findings, the researcher suggests the following:

- ❖ Conducting another similar study on the impact of the Intostal model on other educational subjects such as the History of Europe, America.
- ❖ Conduct a further similar study on the impact of the Intostel model on other variables such as creative, innovative, and scientific thinking.

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