

Identifying Students' Learning Styles to Boost EFL Learning Experience: A Case Study

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Abstract:

Research on learning styles reveals that individuals vary greatly in the way they learn a foreign language. Some are analytically oriented and others are globally oriented. Learners are also more visual, auditory or tactile. The primary purpose of this study was to identify first year Middle school pupils' learning styles and stimulate further thinking on the extent to which our understanding of learning styles can be applied to teacher training. The study also explored the different instructing techniques a teacher should apply in order to ensure an adequate accommodation of these styles and bring about positive changes in ways of learning English. The instruments used in conducting the study on a subject population of 40 pupils were the Barsch Learning Style Inventory (BLSI) and the Brain Dominance Inventory (BDI). The study resulted in the following findings: (1) All the learning styles modalities targeted by the two instruments manifested themselves in the selected population.(2) The BDI revealed that the majority of the population under study had left brain dominance.(3) Statistical analysis of the data revealed that the preferred learning style, as measured by the BLSI, was visual. Auditory and tactile were second and third respectively.

Keywords: learning styles; teacher training; instructing techniques; EFL class

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1.Introduction

Today, the world experiences an extraordinary outpouring of scientific work: on the mind and the brain, on the thinking and learning process , and on neural processes that occur during thought and learning. New theories of learning have led to very different approaches to the design of curricula and teaching assessment. Forty years ago, very little attention was paid to the work of cognitive scientists whose findings were far removed from classrooms. Today, researchers in the cognitive field are spending more time working with the teaching , refining their theories in real classrooms and finding efficient ways to apply them. The story that can be told today about the learning process is far richer than ever before. It promised to evolve dramatically in the next generation thanks to the following important events :

- a- Cognitive psychology has enriched the understanding of the principles of knowledge organization that underlie people's abilities to learn and solve problems in a wide variety of areas , including social studies , literature and sciences.
- b- Findings about learning and transfer have uncovered many principles for structuring learning experiences .This has enabled people to use what they have learned in new settings.
- c- Research in social psychology have shown that all learning takes place in settings with particular and social norms .These new settings influence learning and transfer in very powerful ways.
- d- Neuroscience in its turn has invaded the learning field with the evidence it gave for many principles of learning emerging from lab research. It has shown how learning influences the structure of the brain and along with it , its functional organization.
- e- Emerging technologies are developing new opportunities to enhance learning that were unimaginable a few years ago.

These are but some of many studies which have opened the door wider to a new learning guided within a scientific framework. Moreover, always in the context of new research findings, a strong emphasis has been put on individualized teaching - on the learner. It has been noticed that we can use methods and teach until “doom's day” but reach no good results unless we take into consideration the learners' preferred channels of acquiring knowledge. Being aware of these channels and traits , referred to as learning preferences or **learning styles**, aid educators in the planning of the teaching operation and individualized instruction. This creates an environment conducive to efficient learning and helps students reach their full potential.

Still, for all the talk about **learning** amongst **Algerian policy makers and practitioners**, we believe there is a surprising lack of attention to what it entails. Theories of learning do not figure strongly in professional education programs for teachers. **The learning process is regarded as if it is unproblematic and that it can be taken for granted.** Isn't it high time to reverse this idea?

New Learning and Educational Goals

Twenty first century's educational goals are very different from the ones of earlier times. As challenges and expectations have changed quite dramatically, so have educational goals. Consider the following movement of the schooling goals:

In the early 1800's instruction in writing focused but on the mechanics of noting down religiously what was dictated by the teacher, and transforming oral messages into written ones. During the last half of the 19th century, school children were asked to compose their own written texts. Still, children were trained but to closely imitate very simple text form. In the 1930's the idea of training students to express themselves in writing emerged. The other skills underwent almost the same experience.

Concerning the learner, the story is as follows:

The early 1900's saw a new challenge, a challenge of providing mass education. Many, at that time, thought of this challenge as analogous to mass production in factories. To structure efficient classrooms, school administrators made use of what they believed the scientific organizations of factories. Hence, pupils were regarded as raw material – teachers as technical workers. Teachers' job was limited to carrying out directives from their superiors. Curricula, design, instruction and assessment in schools were fully dominated by the factory model. Today, students are considered as humans in its fullest sense. They need to understand the current state of their knowledge and to build on it, improve it and make decisions when facing uncertainty. Studying subjects are not for the subject's sake, but to serve in real life. For example, learning a language should help students to use it in real life situations. Doing mathematics should help the learner to solve problems, and prove. Doing History should help construct and evaluate the past to better know the future. The quote, **“Those who do not remember the past are condemned to repeat it”** has become a reality we must take into account. In this respect, our primary aim is to get those responsible for the education process go hand in hand with these new goals. To know that one learns more effectively when information is presented in a manner congruent with one's favored method of acquiring and processing information. To

understand that assessing the pupils' learning styles enables the teacher to modify his teaching style and accommodate his pupils'.

2.Literature Review

The idea of the term "learning style" was first recognised as early as 334 BC when Aristotle started thinking that children had individual differences. He believed that, "each child possessed specific talents and skills" (Reiff,J.C& National Education Association, W. D., 1992). Since then, the concept of learning styles has not stopped evolving.

Researchers developed a great number of ideas on how pupils learn. These ideas contributed to the birth of different theories that treated the numerous types of learning styles a human being can possess. The most recent of these theories is Howard Gardner's Multiple intelligences theory which assumes that humans possess at least nine intelligences or learning styles.

Teaching without taking account these learning styles has caused the failure of thousands of smart learners simply because the teaching strategies did not match with these learners' preferred channels of learning. Examples of those great figures who were considered stupid include Albert Einstein, Thomas Edison Winston Churchill and many others. "Albert Einstein was a day dreamer. He was often chided by his teachers in and was accused of destroying class discipline by his stupid questions. Teachers told him he would never amount to anything, that he would be better out of school. Winston Churchill did poorly at school. He talked with a stutter and a lisp. But he succeeded in becoming one of the greatest leaders of the twentieth century. Thomas Edison was considered as addled for asking so many questions in class. His teacher beat him with a heavy leather trap because of such behavior. These people can never be said to be stupid. The quote **"if the pupil is bad, the teacher is worst"** can perfectly be applied on them . Their learning preferences were simply ignored at school. They had learning styles that were not suited to their teachers' styles.

In this respect, Lorna Ridgeway (1973) quoted:

**"Many failure attributed to the child is in fact a failure
in the curriculum , the method or the teacher"**

Unfortunately that mismatch continues today for thousandfs of students and it may be the main cause of school failure all around the world. It is high time for a teacher to know the learning styles of his students and his own way of instructing.

2.1.What is a Learning Style? Definitions

Joanna Haswell (2017) defines learning styles as a term which conveys the idea that “each student learns in his or her own way” . Actually, thanks to this preferential way, students can acquire knowledge, retain it and apply it in the learning experience Keefe (1979), quoted in Rod Ellis(2000) , defines a learning style as :

“The cognitive, affective, and physiological behaviors that serve as relatively stable indicators of how learners perceive, interact with and respond to the learning environment... Learning style is a consistent way of functioning that reflects underlying causes of behavior”.

2.2. Learning Styles Models

2.2.1.VARK Model

In 1992, the learning styles theorist Neil D. Fleming and Coleen E. Mills used the term VARK to describe four learning modalities a learner possesses. These are: visual, auditory, reading/writing and kinaesthetic. The University of Kansas (2019), in a presentation titled Different Learning Styles You Should Know: The VARK Model, explained these modalities as follows:

a-Visual learning

Students who are visual prefer “to use images, graphics, colours and maps to communicate ideas and thoughts”. These learners need to see information so that they can assimilate it. They learn through seeing.

b-Auditory Learners

Auditory (or aural) learners learn by hearing. They are most successful when they hear information presented to them verbally. Educators often erroneously believe that these students are passive and less engaged in class. Actually they appear passive in class because they focus on hearing to maintain their auditory attention.

c-Reading/Writing Learners

Students who are good at the reading/writing modality often show a strong learning inclination towards the written word. These learners prefer written information presented in class whatever the means and the form.

d-Kinaesthetic Learners

Kinaesthetic learners are action oriented, “participatory learners” who are often physically active in the learning operation. They achieve their full potential when engaged in physical activities. Literature often refers to them as tactile learners.

2.2.2.VAK learning styles

According to Fiona Macmillan (2018) VAK learning styles constitutes a model of learning designed by Walter Burke Barbe and later developed by Neil Fleming. This model divides learners into three categories:

a. Visual learners: acquire knowledge by sight. “They absorb information primarily by seeing it”, or by visualising it. They learn better when they use colour coordination, mind maps and flashcards. However, they might find difficulties with verbal instructions.

b. Auditory learners: acquire knowledge by sound.” They absorb information primarily by hearing it. They prefer verbal instructions and are sensitive to rhythm, pitch and tone of voice.

c. Kinesthetic learners: acquire knowledge by moving. These learners absorb information primarily through movement. They are often excellent at hands-on activities and enjoy expressing themselves physically.

2.2.3. The Myers- Briggs Type Indicator

This model classifies students according to their preferences and suggests that learners may be:

a-Extroverts or introverts

Extroverts are those who try things out and often focus on the outer world of people. Introverts think things through and focus on the inner world of ideas.

b-Sensors or intuitors

Sensors are practical , detail oriented .They focus on facts and on procedures. Intuitors are imaginative , concept oriented .They focus on meaning and possibilities.

c-Thinkers or feelers

Thinkers tend to make decisions based on logic and rules. They are skeptical. Feelers base their decisions on personal and humanistic considerations. They are appreciative.

d-Judgers or perceivers

Judgers seek closure even with incomplete data and often set and follow agendas .The perceivers resist closure to obtain more data. They often adapt to changing circumstances.

2.2.4.The Brain Dominance Model

Brain theory research asserts that information is processed differently by the two hemispheres of the human being. The left hemisphere has the verbal, sequential and analytical abilities. The right hemisphere has the global , holistic and visual functions .Kinsella (1996) argued that a stronger verbal/analytical faculties may excel with the traditional teaching model such as listening to lectures , reading textbooks and doing writing assignments. The right brain shows strength for creativity and problem solving. Thus , teaching methods need to be varied to help pupils develop the use of both hemispheres and encourage them at the same time, to perceive information analytically and in a relational way. This might be illustrated in the following tables :

Table 1. Brain dominance and Material Presentation

Left hemisphere	Right hemisphere
-Presenting materials that are practical .-Giving structured lectures with systematic instructions. -Providing linear , sequential processing of input. -Using words to define or describe terms, rules or concepts. -Focusing on differences with detailed information. -Drawing conclusions based on reasons and facts	-Presenting materials of personal , factual and social context. -Giving lectures with varied visual illustrations. -Providing opportunities for multisensory learning (auditory , visual and tactile) -Focusing on similarities and overall information. -Integrating component parts and organizing them into a whole.

Table 2. Class Related Activities

Left hemisphere	Right hemisphere
-Offering logical problem solving activities with objective exercise format. E.g. true/false; multiple choice QQ ; matching. Giving task oriented analytical exercises. -Allowing pupils to work indepen- dently or with a compatible peer.	-Offering intuitive problem solving activities with open - ended format. E.g. short answers , writing a paragraph, essays. -Grouping students to work collaboratively .(group or pair work.)

In another study carried out by Evelyn C. Davis (1994) the left brain learner and the right brain learner were described as follows :

- The left brain learner is often called linear or analytical. Linear because he likes to process information line by line. Analytical, because he likes to look logically at details and facts.

- The right brain preference individual is called a global learner because he sees the big picture ,the overview, and processes information as a whole.

- The left-brain learner is usually more logical , organized and disciplined. He likes to look at details, and makes decisions by facts.

- The right-brain learner likes things to be informal and spontaneous, is usually

creative, and tends to make many decisions based on intuition and feelings.

- Persons with the left-brain preference usually find theoretical details important and immediately interesting, while those who prefer the right-brain functions find theory interesting only after the how to do is mastered.

- Left-brain learners can apply new information quickly, and usually prefer to work alone.

- Right-brain learners need longer to assimilate material and often prefer to work with others.

- Individuals with left-brain preference tend to be more time-oriented and competitive, while

those with right-brain preference are usually more event-oriented and generally less

competitive.

In the language learning field , it should be mentioned that there are skills which require analytical sequential and left brain processing. Other skills involve right brain dominance ,to note guessing and associating.However , it

is not astonishing at all to see good language learners with either left- brain or right-brain dominance who achieve a high degree of fluency and accuracy. This happens because such learners use both brain skills according to the type of activity at hand.

2.3.Key Findings

Learners , whatever their age and level, preferentially take in and process information in different ways: by seeing and hearing, reflecting and acting, reasoning logically and intuitively, analyzing and visualizing. Teaching methods also vary from one teacher to another. Some instructors lecture, others demonstrate or lead students to self-discovery; some emphasize memory and others understanding. When mismatches exist between learning styles of most students in a class and the teaching method of the instructor, the students may become bored and inattentive in class, do poorly on tests, get discouraged about the courses, and themselves. This may lead to their dropping out of school. Teachers ,when confronted by low test grades, unresponsive classes, and dropouts, often become overly critical of their students .They think that the pupils are “stupid” , unwilling to cooperate and ‘not made for school’. This has never been correct . Teachers should know and remember that students will doubtlessly perk up when they are taught the way they learn best. Learning to spot their general processing style (global or analytical),and their preferred modalities (tactile, auditory, visual) is the first step towards a more efficient teaching /learning environment.

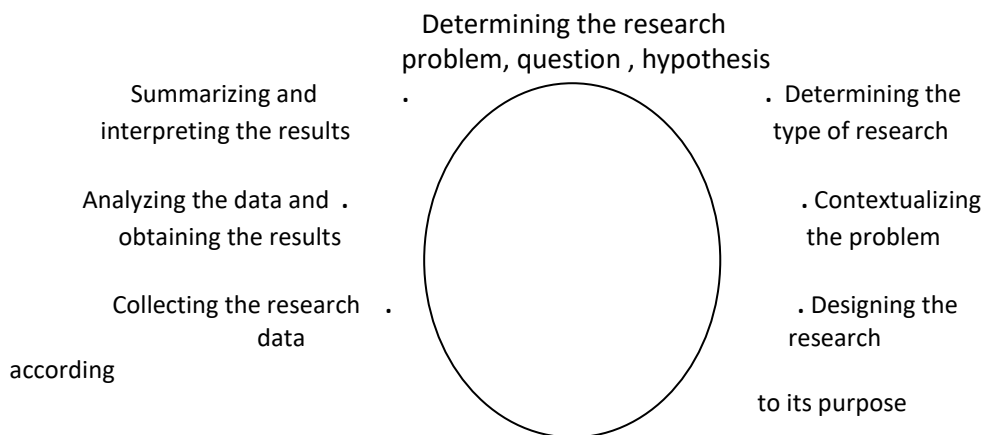
3.Methodology

3.1. Methodology Design

A research work is “an ongoing activity which is never totally completed because each piece of research raises additional questions for more research.” (Herbert W. Seliger&Elana Shohamy ,2000).This reveals the cyclical aspect of any research work. It is generally displayed in the form of a circle and should include several different events necessary for the completion of a study.

To illustrate this , we suggest the following figure from Herbert W. Seliger and Elana Shohamy (2000 :25) :

Figure 1. The Research Cycle



In an attempt to make our working procedure go along with the research cycle lines (see above), we proceeded as follows :

1 -When we first began our research study we had a purpose for doing it,our research problem: Identifying pupils' learning styles in English as a foreign language to help teachers improve learning efficiency .

2-We realized that any type of problems requires a different way of getting appropriate solutions. Since our study focuses on the qualities and characteristics that are unique to each student, we thought of applying a case study approach within a descriptive method.

3-The main topic of our work was contextualized within a large body of knowledge: the learning process, learning styles, learning English as a foreign language, first year Middle school pupils , etc.

4-The research study was designed according to its purpose : an analytic deductive research imposed itself. The validity , here, is more a question of the quality of the measuring instruments we had used ; if the inventory is made by experts, it will doubtlessly yield valid and reliable results.

5- Collecting Data

In any research work, collecting data requires procedures which elicit high quality information. Well-thought-out procedures will inevitably lead to valid research findings. In our context, the procedure we followed was :

a-The abstract variable which needed to be studied was “learning styles”.

b-In the first stage ,we had to operationalize the variable by identifying the specific traits or types which exemplify this variable : visual , auditory , tactile , left-brain, right-brain , bilateral. Any of these traits were considered as the data of study because they were elicited by means of a specific data collection device. Here, we applied two different inventories ; the Barsh Learning Style Inventory and the Brain Dominance Inventory.

6-Data Analysis

Data analysis refers to sifting, organizing, summarizing and synthesizing the data so as to arrive at the results and conclusions of the research.(Herbert W.Seliger&Elana Shohamy, 2000).

In our work , we did not have any choice as to the specific data analysis technique to use. The data we gathered lent itself to a specific data analysis technique which was the inventories along with the scoring instructions designed by specialists.

7-Summarising and Interpreting the Results

This step constitutes the last phase in any research work .In our study , the scoring instructions interpreted ,we believe, in a precise way , the results. Our task was but to summarize ,organize and display the findings in tables of descriptive statistics .Moreover , the report of results should generally be followed by recommendations and suggestions as to the “use , application and utility of the research results”.(Herbert W. Seliger &Elana Shohamy ,2000).

3.2. Statement of the Problem

One of the challenges in teaching is trying to meet the needs of a variety of pupils . In the Algerian context, a generic course is generally presented to the learners and a “one-size-fits-all” philosophy is imposed with little or no regard for pupils' learning styles or preferences. Such lack of regard for the individual's learning styles has caused the pupils' discomfort which in turn has hampered learning development.

Hence , the central problem of this study is to determine first year middle school pupils' learning styles and their preferences for ways to learn English as a foreign language:

a-What are these learning styles /preferences ?

b-How to identify theses learning styles ?

c-What are the factors which differentiate between these styles ?

d-How should instructing accommodate these styles ?

3.3. Hypotheses

- a- All learners have preferences for ways to learn called their individual learning styles.
- b-Each learning style requires different instructional techniques.

3.4. Background and Significance of the Study

a- To make teachers , inspectors and textbook writers understand that students learn a subject at different rates with strikingly different levels of completeness.

This is due to the students' learning styles.

b- This topic is almost neglected in the Algerian context .There is a lack of information about it ,t he thing which necessitates its study and mastery.

c- To make teachers and parents understand that what seems to be good for them

is not necessary good for their children. They should not blame the child if he cannot assimilate or understand something they have taught him. The main source of the problem is the parents/teachers themselves, and the way they teach .

3.5. Limitations of the Study

Since this study is based on collecting data by means of questionnaires (inventories),the validity of the findings will be influenced by factors such as :

- The adequate return of the questionnaires by the informants (respondents).
- The mood of the respondents while completing the inventories.

Note: the inventories we have selected **are not meant** to be used for major life decisions. There are more adequate ones which can be used by specialists and hence, give more valid and reliable results.(copyrighted).

3.6. Basic Assumptions

-Student's performance in class and their school results do say much about their learning styles. If the teacher's instructions match with the students' preferred ways of acquiring language, the results will be positive. If the teachers' methods do not match, the learner will be bored and unwilling to participate in the teaching operation.

-The instruments (inventories) used in this research work allow us to better understand our pupils' learning preferences and report our findings in a more concise way.

-Pupils' appraisal of the teacher's performance, the textbook and the school administration is the echo of how they perceive things, how they think, and how they learn.

3.7. Procedures for Collecting Data

The instruments chosen to identify pupils' learning styles are the Barsch Learning Style Inventory and the Brain Dominance Inventory.

The first inventory (BLSI) evaluates to what degree an individual is visual, auditory, or tactile learner. The second (BDI) scores an individual performance by percentages of left or right brain dominance and relates the scores to a logical or intuitive learning/thinking style. Both inventories consist of short questions to be answered by the learners.

3.8. Inventories Administration

The inventories were distributed to a group of pupils in Ghedjati middle school- Sétif. Their teacher of English was set to supervise them. Since the pupils are absolute beginners (the first time they study English), it was felt necessary to translate the inventories into the mother tongue. What matters most for our study is the content of their answers.

3.9. Procedures for Treating Data

The analysis of the sample's answers complies with the scoring instructions of the two inventories designed by experts.

3.10. Description of the Two Inventories

The Barsch Learning Style Inventory, a non-copyrighted instrument, was designed by Jeffrey Barsch. It aims at assessing individuals' learning styles. It tells us about our learning preferences: auditory, visual or tactile. It consists of twenty-four questions (24). The learner is to place a check on the appropriate line of each question. After answering all the 24 questions, one has to refer to the scoring instructions (which are included in the BLSI) to know his best channel of learning. (see appendix A)

The Brain Dominance Inventory, revised by Evelyn C. Davis (non-copyrighted) aims at helping individuals determine if they are left-brain,

right-brain or bilateral learners. It consists of thirty nine (39) questions. The individual is to select the answer that most closely represents his/her attitudes and behavior. The scoring instructions included in the inventory will allow one to know his brain dominance.

The scoring instructions included in the inventory will allow one to know his brain dominance. (see Appendix B)

3.10.1.Procedure

a.Barsch learning style inventory

The pupils had to answer twenty four (24) questions by placing a check on the appropriate line and under the selected frequency of occurrence.

Example : **Question one**

	almost	usually	sometimes
seldom			
almost			
never			
1-I remember more about a subject			
.....			
through listening			
than reading			

b-Brain dominance inventory

In this inventory pupils had to answer a set of 39 multiple choice questions. They had to select the statement that most closely represented their attitude or behavior.

Example : **question one**

1- I prefer the kind of classes

- a. where I listen to an authority
- b. in which I move around and do things
- c . where I listen and do things

3.10.2.Data Analysis and Scoring

a-Barsch learning style inventory

After studying pupils' answers , we referred directly to Barsch scoring procedures

We had to allot :

04 points to any answer checked **Almost always**

03 points to **usually**

02 points to **sometimes**

01 point to **seldom**

00 points to **almost never**

The second step was to write the point value of each question next to its corresponding number.

The third step consisted of distributing the questions along with their corresponding points under the three headings suggested by the inventory : visual, auditory , and tactile.

The last step was to add the points of each heading separately.

The heading which got the highest score represented the preferred learning channel of the respondent.

b-Brain dominance inventory

After studying and classifying pupils' answers we recorded the total number of

answers A , B and C.

Next we applied the Brain dominance inventory scoring which goes as follows :

1.Compute your B score minus your A score. It can be a minus or a plus answer. _____ .

2.If your C score is 17 or higher, divide your B minus A score by three. Round your score to the nearest number. The answer will be your score. It can be a minus or plus number. _____.

If your C score is from 10 to 16, divide your B minus A score by two. Round your score to the nearest number. The answer will be your score. It can be a minus or plus number. _____.

If your C score is less than 10, do not divide at all. Your B minus A score is your answer. _____.

A score of 0 = Whole-brain dominance (bi-lateral)

A score of - 1 to - 3 = Slight preference toward the left

A score of - 4 to - 6 = Moderate preference for the left

A score of - 7 to - 9 = Left-brain dominant

A score of -10 to -11 = Left-brain dominant (very strong)

A score of + 1 to + 3 = Slight preference toward the right

A score of + 4 to + 6 = Moderate preference for the right

A score of + 7 to + 9 = Right-brain dominant

A score of +10 to +11 = Right-brain dominant (very strong)

3.10.3.Summary of Results

a-The Barsch learning style inventory

The Barsch results classified the 40 pupils in the sample as follows :

.18 individuals were predominantly visual . (10 girls and 08 boys .)

.13 individuals were predominantly auditory. (05 girls and 08 boys)

.09 individuals had a tactile preference (06 girls and 03 boys)

Statistically exhibited we got :

Table.3. Population

Population	Age	Girls	Boys
40	11 to 13 years	21	19

Table 4 . Pupils' Preferred Modalities

Modality	Girls	Boys	Total
VPS	10	08	18
APS	05	08	13
TPS	06	03	09
Total	21	19	40

Table 5 . Percentages

Modality	Girls	Boys	Total
VPS	25 %	20 %	45 %
APS	12.5 %	20 %	32.5 %
TPS	15 %	07.5 %	22.5 %

From these, we deduced that 45 % of our population had a visual dominance.

32.5 % are auditory and 22.5 % are tactile .

b-Brain Dominance Inventory

A summary of the Brain-Dominance scores shows that 03 students, 07.5 percent of the total, had a whole-brain dominance (bi-lateral). Nine or 22 percent had a slight preference toward the left . 01 pupil or 2.5 percent of the total had left-brain dominance. 24 individuals or 60 percent of the population had slight preference toward the right. Moderate preference for the right represented 02 pupils (5 percent).One pupil (2.5 percent had right-brain dominance.

Statistically exhibited we got :

Table 6. Population

<i>Population</i>	Age	Girls	Boys
40	11 to 13 years	21	19

Table7. Pupils’ Brain Dominance

Brain Dominance	Girls	Boys	Total
Whole-brain dominance (bi-lateral)	02	01	03
Slight preference toward the left	04	05	09
Moderate preference for the left	00	00	00
Left-brain dominant	00	01	01
Left-brain dominant (very strong)	00	00	00
Slight preference toward the right	14	10	24
Moderate preference for the right	01	01	02
Right-brain dominant	00	01	01
Right-brain dominant (very strong)	00	00	00
Total	21	19	40

Table 8. Percentages

Brain Dominance	Girls	Boys	Total
Whole-brain dominance (bi-lateral)	05 %	02.5 %	07.5 %
Slight preference toward the left	10 %	12.5 %	22.5 %
Moderate preference for the left	00 %	00 %	00 %
Left-brain dominant	00 %	02.5 %	02.5 %
Left-brain dominant (very strong)	00 %	00 %	00 %
Slight preference toward the right	35 %	25 %	60 %
Moderate preference for the right	02.5 %	02.5 %	05 %
Right-brain dominant	00 %	02.5 %	02.5 %
Right-brain dominant (very strong)	00 %	00 %	00 %

The above figures revealed that the majority of our population (60 %) had a slight

preference toward the right.

22.5 % had a slight preference toward the left.

07.5 % had whole-brain dominance (bi-lateral).

02.5 % had left-brain dominance .

05% had a moderate preference for the right. 02.5% had right-brain dominance

4. Suggestions and Recommendations

Theoretically speaking , learning is more productive when pupils' learning styles are taken into account . In the Algerian context ,it is doubtlessly very difficult to match a teacher's instructions to every pupil's needs .This may be explained in terms of available teachers , rooms and administrative considerations – not in terms of the teacher's competencies. Then, how can we use the information revealed by the two learning styles inventories ?

An interesting answer came from Evelyn C.Davis (1994):

“.... a teacher should try to provide a variety of learning experiences to accommodate the various learning styles that exist in the average classroom .Then all students will have at least some activities that appeal

to them that appeal to them based on their learning styles, and they are more likely to be successful in these activities. The feeling of success will be a motivating factor for additional learning . »

Furthermore , teachers are to bring some practical changes in their classrooms. For the Barsch learning style inventory , teachers should bear in mind that visual learners learn primarily with their eyes . Thus, the use of resources that must be read or seen is strongly recommended : posters , the chalkboard , books , transparencies and computer monitors if available .

Written assignments are the preferred mode of evaluation for such type of learners. It is wise for teachers to take this into account .

In Algeria, the problem does not exist at all since almost all the evaluation (unfortunately) is done in writing.

The auditory learner who learns primarily with his ears, needs being provided with resources

for hearing : lectures, group talk and discussion , tapes, oral directions and explanations are all recommended.

Concerning evaluation , the teacher should provide orally setting tasks and any activity requiring aural comprehension. As this rarely happens in our situation, we, nevertheless, urge teachers to include it in their teaching operation.

For the tactile learner , teachers should design hands-on activities.

When provided with manipulative materials that are touchable and moveable, these learners will achieve very satisfactory results.

However, teachers are urged to encourage their pupils to broaden their favorite learning channel by applying the other channels whenever possible.

Hence, as an example, the tactile learner should engage in activities that involve visual or auditory processing.

For the Brain dominance inventory , teachers should remember that most individuals show a preference for either right brain or left brain behavior.

Taking this into account makes the teacher responsible for the type of instructions he is to give when with his pupils.

In this respect , Kindell and Hollman ,quoted in Evelyn C.Davis (1994) gave some very useful tips to teachers based on hemisphericity. Among these tips :

For left brain learners ,teachers should emphasize the use of the discovery approach and provide the learner with problem solving activities. Logical explanation and analytical exploration are to be used whenever introducing new concepts or procedures. Graphs and charts are useful and even recommended when made in advance on handouts and transparencies.

The class atmosphere should be functional, uncluttered and work oriented.The teacher's relationship with pupils is more formal ; He is 'an authority figure'. In the field of achievement, teachers should recognize it only if the pupils have excelled at a given task.

Concerning the right- brain learner , a teacher should make clear whatever he is to introduce right at the beginning of the lesson. Hence , all concepts, principles and procedures should be clearly stated early in the lesson.

The role of the teacher, with this category of learners, is of a guide – never an authority. Graphs and charts do hinder learning. If used, they must be simple and sufficiently explained

The class atmosphere should be warm, friendly and relaxed .Any pressure or tension will result in boredom and unwillingness to learn.

5.Conclusion

Learning styles research has given teachers new directions for making positive changes in their classrooms. Thanks to them, we have had a better idea of how pupils learn best. Once, a teacher “dispensed” a frontal teaching where little or no consideration was given to students. Today, educators have become more responsive to the research that has been done in the area of learning. They have begun to pay more attention to the learner and to the fact that students do not learn in the same way and do not benefit from a same approach. They have felt the necessity to deliberately use a variety of methods to reach the individual's unique learning strengths and weaknesses. In short , the student has become the central element of the teaching / learning process. This new role was confirmed by Rita Dunn(1998) when she said:

“Once upon a time , when we did not know better , it may have been acceptable for teachers to teach everyone as they had been taught. Today ,

because we know better , it is wrong , it is immoral ,and it ought to be illegal .”

The situation in Algeria, we must acknowledge , is far from being satisfactory. Rita Dunn's rules do not apply to our context because we feel they have not reached the concerned audience. Teacher centered instructing and caning ,in some primary and middle schools , are still the order of the day. Worse ,the Algerian school is accused of giving birth to an uncivilized and violent product .This may carry a “little” truth : If a teacher does not consider the students as a human beings, with **unique** traits, he will spoil and cause their destruction. The students, in their turn, will react negatively towards themselves, the school, and the community they live in.

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Appendices
Appendix A
INVENTORY

BARSCH LEARNING-STYLE

Directions: Place a check on the appropriate line after each statement, then refer to the scoring instructions. 0=Almost Never 1=Seldom 2=Sometimes 3=Usually 4=Almost Always

	4	3	2	1	0
1. I remember more about a subject through listening than reading.	_____	_____	_____	_____	_____
2. I follow written directions better than oral directions.	_____	_____	_____	_____	_____
3. I like to write things down or take notes for visual review.	_____	_____	_____	_____	_____
4. I bear down extremely hard with pen or pencil when writing.	_____	_____	_____	_____	_____
5. I prefer to have an oral explanation of diagrams and graphs.	_____	_____	_____	_____	_____
6. I enjoy working with tools.	_____	_____	_____	_____	_____
7. I enjoy reading graphs, grids, charts, and diagrams.	_____	_____	_____	_____	_____
8. I can tell if sounds match when presented with pairs of sounds.	_____	_____	_____	_____	_____
9. I remember best by writing things down several times.	_____	_____	_____	_____	_____
10. I can understand and follow directions by reading maps.	_____	_____	_____	_____	_____
11. I do better at academic subjects by listening to lectures and tapes instead of reading books.	_____	_____	_____	_____	_____
12. I like to play with coins or keys in my pockets.	_____	_____	_____	_____	_____
13. I learn to spell better by repeating the letters of the word out loud than by writing the word on paper.	_____	_____	_____	_____	_____
14. I can better understand a news article by reading about it in the newspaper than by listening to the radio.	_____	_____	_____	_____	_____
15. I like to chew gum or eat a snack while studying.	_____	_____	_____	_____	_____
16. I try to remember something by picturing it in my head.	_____	_____	_____	_____	_____
17. I learn to spell a new word by tracing the word with a finger.	_____	_____	_____	_____	_____
18. I would rather listen to a good lecture or a speech than read about the same material.	_____	_____	_____	_____	_____
19. I am good at working and solving jigsaw puzzles and mazes.	_____	_____	_____	_____	_____
20. I prefer reviewing written material instead of discussing the subject matter.	_____	_____	_____	_____	_____

21. I prefer listening to the news on the radio than reading about it in a newspaper.
22. I like to obtain information on interesting subjects by reading relevant material.
23. I feel very comfortable touching others (handshaking, etc.).
24. I follow oral directions better than written ones.

BARSCH SCORING PROCEDURE

Refer to your answer and write in the appropriate points :
Almost Always 04 points **Usually** 03 points **Sometimes** 02 points **Seldom** 01 point **Almost Never** 00points
Place the point value of each question on the line next to its corresponding number. Next, add the points to obtain your preference scores under each one of the headings.

VISUAL		AUDITORY		TACTILE
N°	Pts	N°	Pts	N°
02.	.....	01.	.....	Pts
03.	.....	05.	.....	04.
07.	.....	08.	.....	.....
10.	.....	11.	.....	06.
14.	.....	13.	.....	.....
16.	.....	18.	.....	09.
20.	.....	21.	.....	.....
22.	.....	24.	.....	12.
VPS =		APS =		.....
				15.
				
				17.
				
				19.
				
				23.
				
				TPS
				VPS= Visual
				Preference Score
				APS= Auditory
				Preference Score
				TPS= Tactile
				Preference Score

Appendix B

BRAIN-DOMINANCE INVENTORY

Author unknown Revisions by Evelyn C. Davis,

Ed.D.(non-copyrighted)

Name _____

Date _____

This inventory will help determine if you are primarily a left-brain or right-brain learner, or if you are bi-lateral (using both about equally).

Directions: Answer the questions carefully, checking the answer that is correct for you. Select the one that most closely represents your attitude or behavior. When you have finished, refer to the scoring instructions.

1. I prefer the kind of classes
 - ___a. where I listen to an authority.
 - ___b. in which I move around and do things.
 - ___c. where I listen and also do things.
2. Concerning hunches:
 - ___a. I would rather not rely on them to help me make important decisions. I frequently have strong ones and follow them.
 - ___b. I occasionally have strong hunches but usually I do not place much faith in
 - ___c. them or consciously follow them.
3. I usually have a place for things, a way of doing things, and an ability to organize information and materials.
 - ___a. Yes.
 - ___b. No.
 - ___c. In some areas of my life, but not in others.
4. When I want to remember directions, a name, or a news item, I usually:
 - ___a. write notes.
 - ___b. visualize the information.
 - ___c. associate it with previous information in several different ways.
5. In notetaking, I print:
 - ___a. never.
 - ___b. frequently.
 - ___c. sometimes.
6. I prefer the kind of classes
 - ___a. where there is one assignment at a time, and I can complete it before beginning the next one.
 - ___b. where I work on many things at once.
 - ___c. I like both kinds about equally.
7. When remembering things or thinking about things, I do so best with:
 - ___a. words.
 - ___b. pictures and images.
 - ___c. both equally well.
8. In reviewing instructions, I prefer:
 - ___a. to be told how to do something.
 - ___b. to be shown how.
 - ___c. no real preference for demonstration over oral instruction.
9. I prefer:

- ☐ a. dogs.
 - ☐ b. cats.
 - ☐ c. no preference for dogs over cats or vice versa.
10. I am:
- ☐ a. almost never absentminded.
 - ☐ b. frequently absentminded.
 - ☐ c. occasionally absentminded.
11. Do you instinctively feel an issue is right or correct, or do you decide on the basis of information?
- ☐ a. decide on the basis of information.
 - ☐ b. instinctively feel it is right or correct.
 - ☐ c. I tend to use a combination of both.
12. I have
- ☐ a. no or almost no mood changes.
 - ☐ b. frequent mood changes.
 - ☐ c. occasional mood changes.
13. I am:
- ☐ a. easily lost in finding directions, especially if I have never been to that place before.
 - ☐ b. good at finding my way, even when I have never been in that area.
 - ☐ c. not bad in finding directions, but not really good either.
14. I get motion sickness in cars and boats:
- ☐ a. hardly ever.
 - ☐ b. a lot.
 - ☐ c. sometimes.
15. I generally:
- ☐ a. use time to organize work and personal activities.
 - ☐ b. have difficulty in pacing personal activities to time limits.
usually am able to pace personal activities to time limits with ease.
 - ☐ c.
16. I prefer to learn:
- ☐ a. details and specific facts.
 - ☐ b. from a general overview of things, and to lookat the whole picture.
both ways about equally.
 - ☐ c.
17. I learn best from teachers who:
- ☐ a. are good at explaining things with words.
 - ☐ b. are good at explaining things with demonstration, movement, and/or action.
do both.
 - ☐ c.
18. I am good at:
- ☐ a. explaining things mainly with words.
 - ☐ b. explaining things with hand movements and action.
 - ☐ c. doing both equally well.
19. I prefer to solve problems with:

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- ☐ a. logic.
 - ☐ b. my gut feelings.
 - ☐ c. both logic and gut feelings.
20. I prefer:
- ☐ a. simple problems and solving one thing at a time.
 - ☐ b. more complicated problems, more than one thing.
 - ☐ c. both kinds of problems.
21. Daydreaming is:
- ☐ a. a waste of time.
 - ☐ b. a usable tool for planning my future.
 - ☐ c. amusing and relaxing.
22. I prefer classes in which I am expected:
- ☐ a. to learn things I can use in the future.
 - ☐ b. to learn things I can use right away.
 - ☐ c. I like both kinds of classes equally.
23. I am:
- ☐ a. not very conscious of body language. I prefer to listen to what people say.
 - ☐ b. good at interpreting body language.
 - ☐ c. good at understanding what people say and also in interpreting body language.
24. In school, I preferred:
- ☐ a. algebra.
 - ☐ b. geometry.
 - ☐ c. I had no real preference of one over the other.
25. In preparing myself for a new or difficult task, such as assembling a bicycle, I would most likely:
- ☐ a. lay out all the parts, count them, gather the necessary tools, and follow the directions.
 - ☐ b. glance at the diagram and begin with whatever tools were there, sensing how the parts fit.
 - ☐ c. recall past experiences in similar situations.
26. In communicating with others, I am more comfortable being the:
- ☐ a. talker.
 - ☐ b. listener.
 - ☐ c. I m usually equally comfortable with both.
27. I can tell fairly accurately how much time has passed without looking at a clock.
- ☐ a. Yes.
 - ☐ b. No.
 - ☐ c. Sometimes.
28. I like my classes or work to be:
- ☐ a. planned so that I know exactly what to do.
 - ☐ b. open with opportunities for change as I go along.
 - ☐ c. both planned and open to change.
29. I prefer:
- ☐ a. multiple-choice tests.
 - ☐ b. essay tests.
 - ☐ c. I like both kinds of tests equally.

30. In reading, I prefer:

- ☐ a. taking ideas apart and thinking about them separately.
- ☐ b. putting a lot of ideas together before applying them to my life.
both equally.

BRAIN-DOMINANCE INVENTORY SCORING

Number of A s _____

Number of B s _____

Number of C s _____

Your A s, B s, and C s must total 39, or your score is incorrect.

1. Compute your B score minus your A score. It can be a minus or a plus answer.
_____.

2. If your C score is 17 or higher, divide your B minus A score by three. Round your score to the nearest number. The answer will be your score. It can be a minus or plus number. _____.

OR

If your C score is from 10 to 16, divide your B minus A score by two. Round your score to the nearest number. The answer will be your score. It can be a minus or plus number. _____.

OR

If your C score is less than 10, do not divide at all. Your B minus A score is your answer. _____.

3. NOW PLOT YOUR SCORE BELOW

-11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10 +11

A score of 0 = Whole-brain dominance (bi-lateral)

A score of - 1 to - 3 = Slight preference toward the left

A score of - 4 to - 6 = Moderate preference for the left

A score of - 7 to - 9 = Left-brain dominant

A score of -10 to -11 = Left-brain dominant (very strong)

A score of + 1 to + 3 = Slight preference toward the right

A score of + 4 to + 6 = Moderate preference for the right

A score of + 7 to + 9 = Right-brain dominant

A score of +10 to +11 = Right-brain dominant (very strong)