

**Pedagogical feature of multiple intelligences in lesson design from the
point of view of preparatory education teachers
- Field study on primary schools –**

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Abstract: The goals of preparatory education and the expectations of parents have evolved considerably, especially given that 80% of the adult intelligence consists of the first 8 years of age, which is no longer seen as a social and societal demand only, but also as a psychologically and, above all, a cognitive requirement that is consistent with this perception, with psychological educational research showing, that the stage of growth between 04 and 06 years of age is a critical stage in the development of the child's personality and its development in its cognitive, emotional and magic dimension. The child is formed by the rules of the synchronization between growth and learning, and in all this necessity of designing the lesson is the main test through which we distinguish the achievement of educational goals or not .

This study questioned a field methodology to see the outstanding features of pedagogy from the various intelligence in the instructional design at the preparatory stage from the teachers' point of view. through the application of an estimate list of behaviors designed by the researcher .Where the terms of the appreciation list were derived from the curriculum for comprehensive education for the ages of 5-6 years issued by the Ministry of National Education 2004.

This list consists of 35 statements and the aim of the study was to reveal the possibility of benefiting from the theory of multiple intelligences and its educational applications in the field of teaching in the preparatory phase.

The study sample included 28 preparatory education teachers that we selected in an intentional way, and the results confirm that the teachers 'responses highlight an arrangement preference for different intelligences, where linguistic intelligence came first, followed by physical-kinetic intelligence, then logical-mathematical intelligence, then visual-spatial intelligence, after self-intelligence, then social interactive, and finally intelligence Music.

Keywords: Multiple Intelligence Theory; Instructional Design; Preparatory Education ; psychometric and Intelligence; Preparatory education teacher.

الملخص: الملمح البيداغوجي للذكاءات المتعددة في تصميم
الدرس من وجهة نظر معلمي التعليم التحضيري-دراسة ميدانية على
المدارس الابتدائية -

إن أهداف التربية التحضيرية و انتظارات الأولياء منها قد تطورت
كثيرا خاصة إذا علمنا بان 80 % من ذكاء الفرد الراشد يتكون في 8
سنوات الأولى من العمر، حيث لم يعد ينظر إليها على أنها مطلب
اجتماعي وتعويضي فقط بل أضحت بالإضافة إلي ذلك مطلبا تربويا
نفسيا ومعرفيا بالدرجة الأولى يتماشى هذا التصور مع ما أظهرته
البحوث النفسية التربوية من أن مرحلة النمو الممتدة ما بين 04 و06
سنوات من العمر مرحلة حرجة في نمو شخصية الطفل وتطورها في
بعدها المعرفي والوجداني والحسحركي، فالطفل يتشكل وفق قواعد
التزامن ما بين النمو والتعلم، وفي هذا كله تعتبر سيرورة تصميم الدرس
المحك الاساسي الذي من خلاله نميز بلوغ الاهداف التعليمية أو لا.

هذه الدراسة مساءلة منهجية ميدانية لمعرفة الملمح البيداغوجي
البارز من الذكاءات المتعددة في التصميم التدريسي في المرحلة التحضيرية
من وجهة نظر المعلمين، من خلال تطبيق قائمة تقدير للسلوكيات
المصممة من طرف الباحث حيث تم اشتقاق عبارات قائمة التقدير من
منهاج التربية التحضيرية لسن 5-6 سنوات الصادر عن وزارة التربية

الوطنية 2004، تتألف هذه القائمة من 35 عبارة وقد كان الهدف من الدراسة هو الكشف عن إمكانية الاستفادة من نظرية الذكاءات المتعددة وتطبيقاتها التربوية في مجال تدريس في الطور التحضيري، وتضمنت عينة الدراسة 28 معلم تعليم تحضيرى قمنا باختيارهم بطريقة قصدية، وجاءت النتائج تؤكد على ان استجابات المعلمين تبرز تفضيل ترتيبى للذكاءات المختلفة حيث جاء الذكاء اللغوي في المرتبة الاولى يليه الذكاء الجسمي الحركي ثم الذكاء المنطقي الرياضي ثم البصري المكاني وبعده الذكاء الذاتي ثم التفاعلي الاجتماعي وأخيرا الذكاء الموسيقي.

الكلمات المفتاحية: نظرية الذكاءات المتعددة؛ التصميم التدريسي؛ التعليم التحضيري؛ القياس النفسى والذكاء؛ معلم التعليم التحضيري.

Introduction

The reform of the preparatory education is based on the famous saying of "Michel de Montaigne": "**The organized mind is better than the full mind**"

In order to keep pace with the socio-economic and scientific development that has resulted in a new reality, the national education system needs to adapt to the new changes, and this is to establish an effective, advanced and open school that will take care of all stages of the formal and special preparatory education, in which most of the physical, psychological and social characteristics of the child are composed. In this context, the preparatory education curriculum for children between 5 and 6 year was presented at the primary school in Algeria. The curriculum

contains the word **activities** instead of **educational materials** on the pretext that talking about the teaching material suggests the educational process based on the teaching of content while using the word activity indicates an educational process in which the child is centered and aims at building competencies based on organized and purposeful play.

This study focuses on learning the features of the intelligence that the teacher is working to highlight in the lesson design.

1- Problematic

Childhood is provided with great and certain preparations and educational ability, for which human beings are living Since ancient times, many philosophers have taken care of the importance of early childhood education, one is the Criteria by which the progress and awareness of societies can be measured, the international conference in 1974 have confirmed the recommendations of "the education received by children before they enter school is of great importance, Which is what is important requires the provision, development, and care of pre-school education." (Shabel Badran, 2000, p. 246).

Based on the latest developments in the theory of multiple intelligences in the field of psychology and education science, In this research, we are conducting field-based systematic accountability of the educational practices that the pre-school teacher is working to highlight in the multiple intelligences theory, which rewards the educational activities incorporated in the curriculum for pupils at this stage, where we have designed a list of behaviors based on

the learning indicators contained in the pre-education curriculum activities and presented the following question:

- Does the responses of the pre-instruction teachers to the multiple intelligences estimation list in the lesson design show a preferential arrangement for the intelligences - in their styles, and for the various items on the list?

The following **hypothesis** was there for raised:

- The responses of pre-school teachers to the list of multiple intelligences do not show a preferential arrangement of intelligences - in their styles and for different items.

2-Objectives of the study

The current study aims to highlight the field practice of multiple intelligences theory in preparatory education and to reveal the possibility of benefiting from its educational applications in pupils' teaching, based on knowledge of their strengths and weaknesses in these intelligences from the teachers' point of view during lesson design.

3-The importance of the study

- Existing research findings, recommendations, and proposals can be used to develop preparatory curricula.
- To bring to the attention of those involved in the preparatory education process the importance of the multiple intelligences approach model.

- Teaching using multiple intelligences allows for a wide variety of experiences while providing educational opportunities, creating and enhancing the pupil's creativity.

4-Theoretical aspect

4.1-the logic of multiple intelligences theory

The psychometry trend is the high-impact scientific entry from which the first conceptual view of its scientific evidence in the study and measurement of intelligence. However, the development of measurement in psychology is the basis for the use of many test techniques. It has led to its approach from views on the basis of measuring public capabilities, and the theory of the one factor of Galton, which reduced it to the ability to make a sensory distinction, has emerged. The theory of the "superman" factors through factor G and the special factors S, as well as another similar theory, is that of the "Catal" theory, which highlights the importance of biological energy and which is called liquid capacity, fluid probability, and what can be attributed to learning, called crystalline energy, crystal probability. The theory of the multiple factors of Thurston, which interpreted intelligence as consisting of five multiple factors called primary mental ability: Linguistic ability, spatial perception, ability to infer, ability to fluency, and numerical ability.

All this balance, especially based on the logic of multiplicity of human capabilities, has set the stage for the emergence of the multiple intelligence's theory of "Howard Gardner" 1983, where his theory differs from that of traditional theories that view human intelligence as a real mental activity, not just a cognitive ability. After his review,

Gardner proposed a huge range of evidence and diverse sources, including studies of talented and patient individuals, brain damage patients, mentally handicapped people, and strong children and adults (Shafiq Falah Alawna, 2012, p. 26). A list of seven bits of intelligence is:

- 1) **Language Intelligence:** Also known as, word intelligence is the ability to use language effectively so that a level of mastery can be achieved. When the individual reaches this level, he can use it to describe events, build culture, and in poetic expression, and to use the statement, expression, and mental philosophy as well as the ability to read, write, and learn the languages and the profile of these professionals: journalists, administrators, teachers, poets, philosophers, authors of novels and books.
- 2) **logic mathematics Intelligence:** The ability to use mathematical numbers and concepts, build systems and proofs, and be able to reason and deductive to make conjectures for problem-solving and applying mathematics to personal everyday life is also to work with data as well as to make concrete models. It should be noted here that mathematical intelligence is being developed in childhood in a significant way, and examples of professionals who clearly show such intelligence, craftsmen, inventors, scientists, and law professionals are examples.
- 3) **Visual and spatial intelligence:** The ability to receive and consider images, figure, and vacuum recognition, and the colors, lines, graphics, transfer visual and spatial ideas from memory and use them to create meanings and examples of professionals who

have such intelligence clearly, surgeons, mechanics, sculptors, photographers, designers, pilots, etc.

- 4) **kinesthetic Intelligence:** The ability to use the body to express ideas or to solve problems or to plan different strategies and events for the body and to use these values to create new forms of meaning, professionals who show such intelligence are craftsmen, athletes, surgeons, actors, etc.
- 5) **musical Intelligence:** The ability to recognize and configure systems, models, and tunes, to understand and develop musical technology, to respond emotionally to music, to meet the needs of others, to link musical shapes and meanings, and to create components and emotive and photographic performances.
- 6) **Social Intelligence (Interactive):** Or Cooperative Intelligence is the ability to understand and respond effectively to other people's feelings, motivations and intentions, solve their problems, establish different-form relationships with them, be able to control and inspire others to work toward goals.
- 7) **interpersonal intelligence:** is also known as reflective intelligence; The ability to know and understand one's own and others' similarities and differences is also the ability to move inwards (reflection) to identify strengths and weaknesses and then address weaknesses and thus use those capabilities to achieve goals, as well as the ability to understand one's own soul And the rules of procedure

and the mood of the system to serve others and express personal views.

Gardner believes that these multiple human memories appear at the beginning of an individual's life as pure neurological and biological capabilities, but they change and open up through the interaction between the human being and symbolic systems that change within each given cultural context. Intelligence is embodied in this dialectical encounter between the brains as an internal process system that interacts with culture as a carrier of symbolic systems.

The following table summarizes some of the data related to the cerebral position of the memorabilia, symbolic systems, and the most important cultural uses (Abdel Wahid Awad Al-Faqihi, 2015, pp. 43-44)

Table (01) shows the triangular relationship between the cerebral spot and symbolic systems and their most important cultural uses in the theory of multiple intelligences.

Intelligence	Key areas of the brain	Major components	Symbolic systems	Cultural uses
Language	Temporal lobe and leftprefrontal cortex	Sensitivity to sounds, combinations, meanings and language functions	Audio Language (Arabic, French, English...)	stories and literature
Mathematical logic	Left and right parietal lobe,	Recognize numerical and logical patterns, the ability to infer long	Logic and maths symbols (basic) and informational language	Scientific discoveries, mathematical theories, and numbering systems
Music	And the left-prefrontal	Ability to produce and evaluate musical structures, rhythm, sound belt, music expression	The system of musical symbols and symbols	Composing, playing, music, singing, and tuning
Spatial optical	Right temporal lobe	Ability to accurately recognize the optical spatial field	Symbolic image language, symbol, and graphic writing	Art work and architectural design
Moving object	parietal and spontaneous areas of the right half	Control body movements and handle objects with skill	Body movements	Dance, theater, athletics, and sculpture
Interactive	Cerebellum, Neurological, kinetic Area of the cerebral cortex	Able to distinguish between the situations, motives, and wishes of others and act accordingly	Socially recognized symbols and signs	Political documents and various institutions
Self	Frontal lobe and temporal lobe especially in the right half, emotional lymphatic device	Ability to communicate with yourself, understand feelings, strengths, and weaknesses	Self-symbols, artworks	Religious discipline, psychology theories, and traffic rituals or moving from one mode to another

4.2-Pedagogic practices and multiple intelligences theory*:

Bruner, talk about pedagogical competencies and how to approach intelligence in its general sense, so "Abdul Karim Gharib" calls approaches to multiple intelligences, reflecting competencies because intelligence seeks to adapt by solving the various problems facing the individual (Abdel Karim, 1996, p. 37).

It is perhaps this argument that pushed "Bruner" to reconcile the concepts of intelligence and competence with the understanding that(how to know to do things and how to be a good one) are competencies that demonstrate the individual's ability to adapt correctly to the environment.

* Recently, it increased from seven intelligences to nine by adding natural intelligence and existential intelligence.

(Ahmed Mari's Tawfiq, Al-Hillah Mahmud Muhamed 1999, p. 240).

According to Gardner, in order to be described as intelligent, this requires the ability to:

- Solving problems in real life.
- Generating new solutions to problems.
- Make something, or seek useful that has value.

Intelligence in his development in the learner from the point of view of this theory is not a single stage but a set of stages:

The first stage: It is called the expression of intelligence through the system of symbols and words for expression.

The second stage: It is called the stage of development, where a kind of advancement occurs in the ability of the development of symbols, instead of words only, ideas can be expressed through symbols such as in mathematics and tone, as in music.

The third stage: is called the stage of maturity, in which intelligence is expressed through professional and non-professional means, where the person has a profile and a hint as he wants, music, poet, engineer, athlete, etc.

Gardner identified the key points of this theory and how the Pedagogy benefited from it as follows:

Everyone has different types of intelligence, but some have a good standard and others have a low level of "individual learning differences."

- Many people can develop each intelligence with a certain level of efficiency, although an individual may have a deficiency of a particular kind of intelligence, he or she has the ability to develop the seven memories to a high level of performance if given the opportunity to develop and learn.
- Intelligence usually work together (interactively and indissociably); intelligence does not exist in life; that is, a person with a high intelligence does not mean that he is missing the rest of the other intelligence.
- There are many ways in which a set of traits are classified that relate to or relate to a particular intelligence and there is no specific level of properties that can be considered specific to that intelligence.
- The and implications of this theory for the Pedagogy have been considerable, benefiting from it as follows:
 - The formulation of educational competencies is procedural to cover the different types of multiple intelligence since most humanitarian activities require sometimes brief and sometimes detailed knowledge.
 - All learning activities are represented on the sum of different bits of intelligence.
 - Encourage students to use their own intelligence while learning.

- The learning assessment process includes all types of intelligence (Bahira Shafiq Ibrahim Rabat, 2007, p. 20).

5-Method and Tools

5.1-Instructional design in pre-instruction

The preparatory education sections of primary schools were introduced from 2003, and the preparatory education from 6 and 7 years was aimed at achieving a set of objectives clearly defined in the National Education Directive among these objectives the following points:

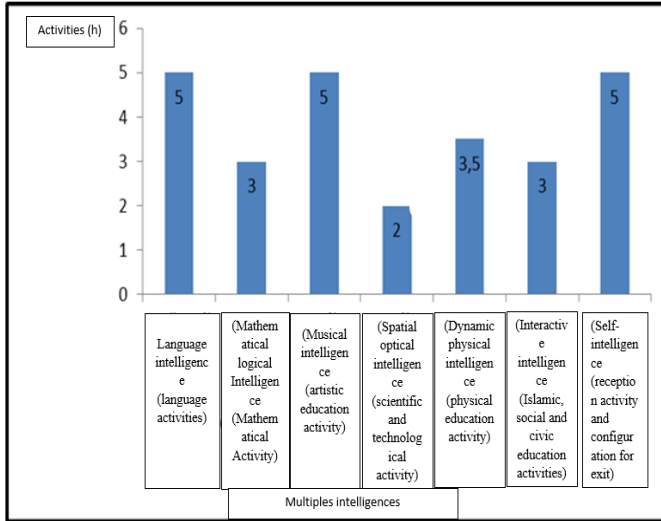
- preparatory Education works for the development and opening of the child's personality through the various play activities carried out by the child.
- To promote the development of children in the sensitive and dynamic aspects that allow them to live in the community.
- To help develop the linguistic balance of children through practices Language and communication positions that emerge from everyday activities and play.
- to ensure that the child has some basic principles of reading, writing and calculating through stimulating and child-related activities and games.
- to develop the visible and uninformed potential of the child and to provide them with the reasons for success at and outside school.

- To promote the development of children in society in accordance with the principles and values of Algerian society.
- that Help and lead a child to use their potential to gain an understanding of the objects, phenomena, and events surrounding them.
- To prepare the child to identify deficiencies in the upbringing of the former child with a view to their understanding of adaptation.
- To research and explore with the assistance of the health structures concerned aspects of physical vulnerability, disability and morbidity symptoms for early treatment and child care.
- To learn children few and short verses of Qur'an, Ministry of National Education (2004): The practical Guide to the Curriculum Preparatory Education, National School Publications, 8-9)

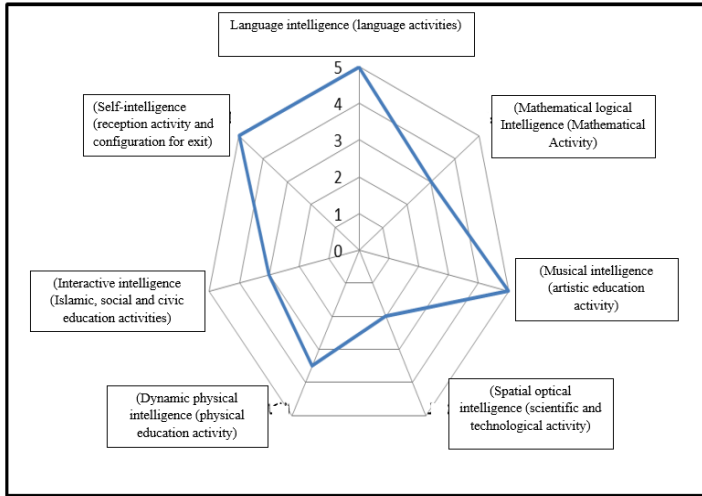
and the curriculum of preparatory education is formed by (7) activities equivalent to the number of multiple intelligences as shown in the following figure.

Figure (01)

Shows activities equivalent to each of several types of intelligence in their weekly size



To illustrate more, we have dropped this data on the graph chart Angle direction shows the legal value of each activity in the sense of each intelligence, where we note that values Near-average is a combination of mathematical logical intelligence, interactive social intelligence, visual and spatial intelligence The time is between three to three hours and a half.



5.2-Search limits.

objective limits : It is limited to designing a list of assessments based on included learning indicators In the activities of the preparatory education curriculum, see the Ministry of National Education (2004): Applied Guide For the preparatory education curriculum for children 5-6 years, National school Publications, Algeria)

Spatial boundaries: Limited to some primary schools in the state of Guelma.

temporal borders: 2018-2019

Human boundaries: The sample of the research was limited to pre-school teachers

5.3- Research tool.

The terms of the list of recognition have been derived from the teaching preparatory curriculum for 5-6 years Published by the Ministry of National Education 2004, this list consists of 35 expressions distributed as follows.

Table (02) shows the distribution of expressions by intelligence patterns

Intelligence pattern	the number of expressions	expressions
Linguistic intelligence	05	21-16-11-6-1
Mathematical Logic Intelligence	05	22-17-12-7-2
Musical Intelligence	05	31-24-15-10-5
Spatial optical intelligence	04	29-23-13-8
Kinetic physical Intelligence	04	30-27-18-4
Self-Intelligence	04	28-26-19-14
Social Intelligence (Interactive)	04	25-20-9-3
Total	31 statements	

With regard to the answer, two alternatives are (yes) if the term is used by a preparatory teacher Reinforce it in the lesson and (no) if it does not have.

-Sample Search.

the sample is necessary for conducting field research to represent the indigenous community as much as possible They are usually chosen by the nature of the subject matter of the study, the purpose of which obtains

information and take a picture The sample study for this research included 28 preparatory teachers we selected them in a meaningful way.

6 - Results and Discussion

For the first part of the claim relating to the responses of the Preparatory Education teachers to a list, multiple intelligence does not show a preferential arrangement of intelligence — in their patterns.

In order to learn how teachers, arrange multiple intelligence through their responses on the list, we have transformed Crude scores to standard grades are graded because items are not equal in each pattern of intelligence.

Linguistic intelligence and mathematical logical intelligence. Music intelligence is 5 items, while physical intelligence Kinesthetic, spatial-visual intelligence, self-intelligence, and social intelligence each are Made up of 04 items.

In addition, the following table shows the order of memorability's by the pre-instruction teachers after the raw grades have been converted to Z-80-T standards.

Table (03) shows the preferential order of the intelligence based on teachers' responses after the raw grades are converted to standard grades

No.	Order of intelligence items grade	Rank	Minimum	Top	Med
1	Linguistic intelligence	5 is (1-6-11-16-21)	17.74	19.12	27.6
2	Physical motor intelligence	4 is (4-18-27-30)	21.8	23.30	30.0
	Mathematical logical Intelligence	5 is (2-7-12-17-22)	24.2	29.80	30.2
3	Spatial optical intelligence	4 is (8-13-23-29)	25.33	27.15	31.8
4	Self-sufficiency	4 is (14-19-26-28)	25.66	29.03	32.1
	Social Interactive Intelligence	5 is (3-9-20-25)	24.95	27.87	32.4
5	Music Intelligence	5 is (5-10-15-24-31)	15.36	28.11	37.5

From the table it is clear that there are more prominent memories than the other and through the median values we note that This score is close in some of the intelligence:

- physical and kinesthetic intelligence 30,00
- Mathematical logical intelligence 30.21

Added to:

- Self-intelligence 32.26
- Interactive social intelligence 32.41

Apart from the other, as follows:

- Language intelligence 27.60
- Visual intelligence 31.89
- Music intelligence 37.56

Since the median is statistically the degree to which the sample members are divided based on their results are in half equal the very small difference observed in the median values between:

Physical and mathematical intelligence, as well as social (interactive) intelligence and self-intelligence* It is 5 hours of activity and interactive social intelligence is 3 hours but responses Teachers did not show any arranged preference between them and other than the active volume of motor-physical intelligence that Mathematical logical intelligence activity is approximately three hours and three hours and a half.

More precisely, they are talking about the same rank and can be arranged in the same order the set as shown in the previous schedule; therefore, we say that there is a difference in the intelligence reinforcement over another.

With regard to the second part of the hypothesis concerning: The order of the various items included in the list.

Table (04) shows the order of items in order of importance after calculating their averages

* Although mathematical logical intelligence consists of 5 items and the physical and kinesthetic intelligence of 4 items, the treatment is the statistics we have followed to highlight the preferential ranking have not been affected by the number of items that make up each intelligence.

Order list items by importance	items	kind of intelligence
1	poses and answers questions	language
21	shows a story when heard	language
12	recognizes a number and calls it	mathematical logic
2	translates symbols	mathematical logic
17	compares the measurement of two objects	mathematical logic
8	preserves the environment.	Spatial optical
29	called spatial optical technological tools	Spatial optical
16	shows curiosity toward the script	language
7	Increases or decreases something to something else.	mathematical logic
27	a series of symmetrical and balanced movements is accomplished	Kinesthetic
13	he calls plants	Spatial optical
28	in his representational performance, he shows feelings and emotions.	self-contained
4	sets his body in space with a moving object	Kinesthetic
23	sets the position of his body in space as	Spatial optical
18	perform movements with verbal and sonic directions	Kinesthetic
6	connects the word to the picture	language
30	To the body	Kinesthetic
22	expresses time	mathematical logic
3	recognizes behaviors of a civil nature	Social interactive
25	recognizes professions and services socially interactive	Social interactive
11	draws attention to the linguistic interlocutor	Language
20	learn verses, Qur'anic verses and Hadiths	Social interactive
26	evaluates a relationship between colors, shapes, and materials	self-contained
15	some songs from the heritage perform	music
9	positive behaviors	Social interactive
10	sounds are used to connect to others	music
19	detects types of self-playing characters	self-contained
31	the audio device is used properly.	music
5	Detects the function of some musical instruments.	music
14	proves its independence by showing a personal	self-contained
24	detects music rhythms	music

Through table (04), the order of the items reflecting the type of intelligence enhanced and practiced from is shown The Preparatory Education Teachers Party after calculating its averages; the first five items range from Linguistic intelligence and mathematical logic intelligence.

While the last 5 items at the tail of the arrangement are ranging between Musical intelligence and self-intelligence

this is a clear indication that lesson design in preparatory education is adopted on linguistic and mathematical logical indicators (intelligence) that move completely away from self and music indicators and remain Types of intelligence are ranging from.

7 - Conclusion

By showing a portion of the results obtained from the research, we found that the educational indicators expressed were expressive 5-6-year activities in the curriculum for preparatory education for pupils that reward intelligence Many have no uniform feature in the sense that they are spread over a spectrum of irregular practices, despite 1 Its importance, and this corresponds to the study "Armastroung1999" in the United States of America He noticed a pleased note In 1,000 classrooms, 70% of the time-space is reached Within the classroom, the teacher is engaged by his verbal behavior in front of the pupils, which reinforces the claim that the teacher is only the source of knowledge is consistent with traditional non theological data based on passive perception For learners, by their expression, they are neutral and rechargeable according to the expression "Corno and Vern2003".

We, therefore, recommend that:

- Balance the process of building the lesson between different activities and therefore different bits of intelligence.
- Teachers' reliance on multiple intelligences provides them with new strategies within the Pedagogical field.
- Applying multiple intelligences exploits students' creativity.

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