

Describing the Daily and Weekly Attention Performance Changes among Students in the Primary Stage

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Abstract :

This article deals with the description of the daily and weekly changes in attention among students in the fourth and fifth years of primary school. To describe these changes, we relied on the descriptive approach with (106) students. The sample concerning the fourth year of primary school was estimated at (55) students, while for the fifth year of primary school. The sample was estimated at (51) students in the state of Tizi Ouzou, and in this study we applied Testut number crossing tests adapted by Marouf (2008). The results obtained showed that the daily attention performance of fourth- and fifth-year primary school students changes according to the internationally recognized classical pattern, while the results of their weekly attention performance do not change according to the internationally recognized classical pattern.

Keywords: chronopsychology, daily changes, weekly changes, attention performances.

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1. Introduction

The Algerian educational system seeks to reform its system, improve the performance of Algerian schools, and improve the educational level in it to be in line with international standards. To achieve this, it has focused on everything that reaches the quality of the teaching and learning process and focuses on the axis of this process, which is the student and everything that affects his learning process. Marouf (2010) explained in this context that the field of chronopsychology allows the study of the different psychological frequencies of cognitive performances, as the majority of studies conducted in this context are particularly concerned with measuring the extent of fatigue and determining the daily and weekly frequencies of attention. Chronopsychology is also known, as indicated by Chaouchi (2020), as the science concerned with studying the changes that occur in the intellectual, cognitive, and psychological activities of the learner, such as the pace of attention, which is considered the essence of school systems.

Testu & Fontaine (2001) explained during the work carried out in the field of chronopsychology that the school day is characterized by good and bad times, and Good times are considered to be those when the student adapts to the school situation and is characterized by high attention. These good times are identified as the middle and end of the morning period and the end of the evening period, while the beginning of the school day and the period after lunch are considered bad times and not suitable for intellectual activities.

Most of the research conducted on changes in attentional performances has found that they are consistent with the feature established by (Gates, 1916). This last was the first researcher to establish the daily frequency curve of intellectual activities, where he demonstrated that performances in the academic field reach their peak at eleven o'clock in the morning and their lowest in the evening, then rise again in the late evening (cited in: Marouf, 2008).

In this framework, attention is considered one of the most studied cognitive processes in the classroom, as it is the first process in the stage of constructing and processing information and is also a subject to changes throughout the day and week. In this sense, Lecont-Lambert (1994) sees that attention in the classroom might be interpreted as an ability that enables the child to process his tasks quickly and without errors, and a severe decline in attention is demonstrated by a low rate of task performance, or by making mistakes. It is considered a basic and

necessary condition for learning to occur.

To spot light on the importance of attention in the learning process, it has been studied by many researchers from a chronological and psychological perspective, with the aim of providing data and results that contribute to understanding the child's pace and considering it by those responsible for organizing school time. Bianco & Bressoux (1999) believe that the results of previous studies show that the student's intellectual performance changes during the days of the week. As there are days when performance is high and days when performance is weak, and the reason, according to some, is particularly due to the type of school calendar applied to the students (cited in: Ali and Marouf, 2017). As a result, most European and local studies conducted on the development of children's intellectual performances showed the same classic feature; which is characterized by a decrease in the child's intellectual performances at the beginning of the morning period, then a rise in the middle and end of the morning period. Then it is followed by a decrease after the lunch period, then a rise again during the afternoon period. Therefore, this article aims to address the topic of describing daily and weekly changes in attention among fourth and fifth grade primary school students in Tizi Ouzou.

Accordingly, the research problem is formulated as follows:

- Do attention performances change throughout the day and week among fourth and fifth grade primary school students in Tizi Ouzou?

2. Research Hypotheses

- **Hypothesis 1:** Attentional performance changes throughout the day among fourth-year primary school students in Tizi Ouzou province.

- **Hypothesis 2:** Attention performance changes during the week among fourth-year primary school students in the Tizi Ouzou province.

- **Hypothesis 3:** Attentional performance changes throughout the day among fifth-grade primary school students in Tizi Ouzou.

- **Hypothesis 4:** Attentional performance changes throughout the week among fifth-grade primary school students in Tizi Ouzou.

3. Research methodology

To describe the daily and weekly changes in attention among fourth and fifth grade primary school students, we relied on the descriptive approach, as it is the most appropriate for describing these changes in a scientific manner that allows us to analyze and interpret the phenomenon under study.

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4. Research sample: The total size of the study sample to describe attention performances is estimated at (106) male and female pupils, where the sample of the fourth years is estimated at (55) male and female pupils. While the size of the sample of the fifth years is estimated at (51) male and female pupils, and this was in the province of Tizi Ouzou, precisely in Belkheir Akli primary school in the municipality of Ouagnoun and Amar Farhat primary school in the municipality of Ait Issa Mimoun.

- Data collection tools: To describe the attention performances during the hours of the day and days of the week, (04) Testu number crossing-out tests adapted by (Marouf, 2008) in the Algerian environment are applied. These tests contain (149) numbers to cross out scattered in (9) lines with (3) numbers to cross out in each line.

- How to collect data: To describe the daily and weekly attention performances of fourth and fifth grade primary school students, we collected data by applying number crossing tests to fourth and fifth grade primary school students in writing and in groups. The duration of the crossing was estimated at 30 seconds, based on the Latin square plan.

Chart N° (01): Shows the distribution hours of the number deletion tests on the groups according to the Latin square plan.

Distribution hours

Distribution hours	8 o'clock	11 o'clock	13 o'clock	15 o'clock
Distribution days				
Sunday	Group 1	Group 3	Group 2	Group 4
Monday	Group 3	Group 1	Group 4	Group 2
Tuesday	Group 2	Group 4	Group 1	Group 3
Wednesday	Group 4	Group 2	Group 3	Group 1

How to analyze the data: The data have been collected on daily and weekly changes in attention, transcribed, represented in charts and processed statistically using the (F) test to measure statistical significance.

- Presentation and discussion of the results:

1- Daily changes in attention performance for fourth-grade primary school students:

Chart N° (02): Daily changes in attention performance for fourth-grade primary school students

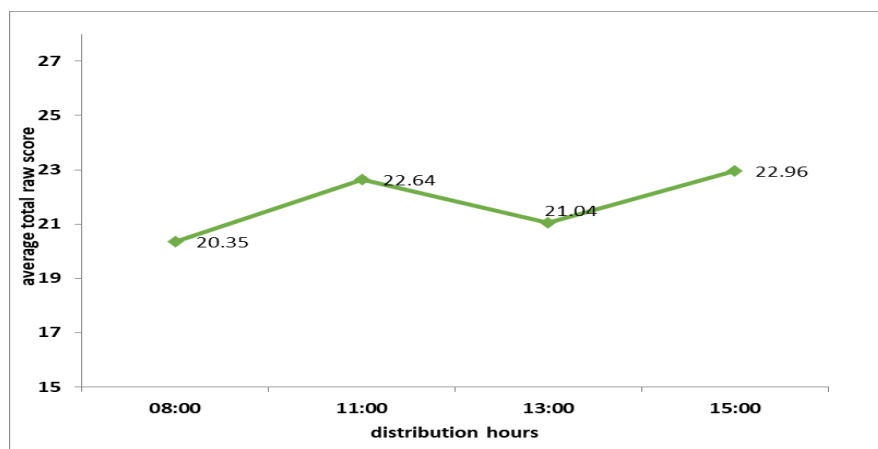
Distribution hours	8 o'clock	11 o'clock	13 o'clock	15 o'clock
Average total raw score	20.35	22.64	21.04	22.96

Chart N° (02) shows that the attention performances of fourth-grade primary school students witness various changes during the hours of the school day. It decreases at eight o'clock in the morning with an average estimated at (20.35), then it rises at eleven o'clock with an average estimated at (22.64), then we notice a decrease in attention performance again at one o'clock in the afternoon with an average estimated at (21.04), and an increase at three o'clock with an average estimated at (22.96).

This daily profile obtained is consistent with the classic profile presented by Gates (1916) who showed that attention performances are low at the beginning of the morning period (8 o'clock) and the period after lunch. He has also shown that attention performances are high in the middle and end of the morning period, and their maximum rise is remarkable at the end of the school day (4 o'clock in the afternoon).

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Graphical curve N° (01): Daily changes in attention performance for fourth-grade primary school students



It is clear from the graphical curve N° (01) that the results of daily changes in the attention performance of fourth-year primary school students are low at the beginning of the morning period of the school day; i.e. at eight o'clock in the morning, then it increases in the same period at eleven o'clock, then decreases again at the beginning of the evening period at one o'clock in the afternoon, Then, the maximum height is known at the end of the evening period at three o'clock in the afternoon, that is, at the end of the school day. This feature is similar to the classical feature that was determined by previous basic studies.

To test the validity of the first hypothesis, we applied the (F) test, the value of which was estimated at $(F(3)=0.02.85; P<0.04 \text{ S } \alpha \text{ } 0.05)$. Accordingly, the first hypothesis, which states that attention performance changes during the day among students in the fourth year of primary school in the state of Tizi Ouzou, is statistically significant.

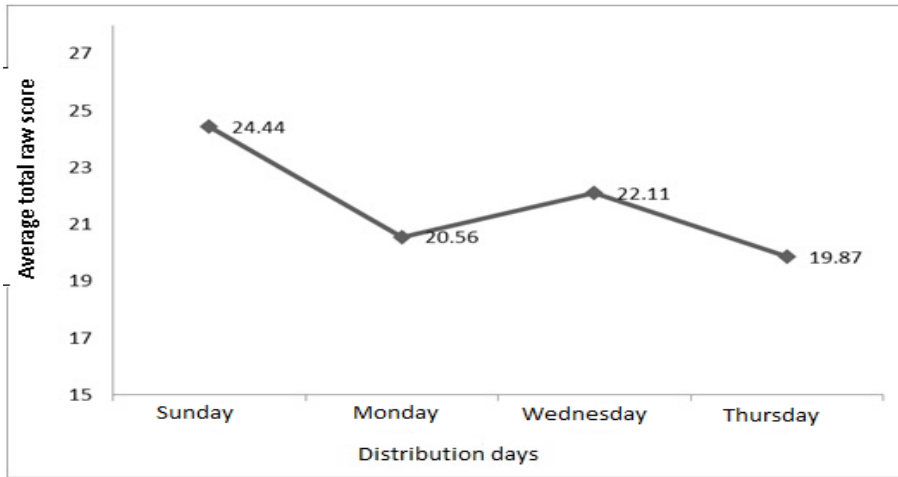
Weekly changes in attention performance for fourth-grade primary school students:

Chart N° (03): Weekly changes in attention performance for fourth-grade primary school students

Distribution days	Sunday	Monday	Wednesday	Thursday
Average total raw score	24.44	20.56	22.11	19.87

Chart N° (03) shows the weekly changes in the fourth-grade students' performances on Sunday with an average of (24.44), then we notice a decrease on Monday with an average of (20.56), while on the third day, which is Wednesday, the performances rise again with an average of (22.11), then they decrease greatly on Thursday compared to the previous days with an average of (19.87).

Graphical curve N° (02): Weekly changes in attention performance for fourth-grade primary school students.



It is clear from the graphical curve N° (02) the feature of weekly changes in attention performances among fourth-year students that performances experience their highest increase on the first day of the school week (Sunday), and this indicates the students' ability to adapt to the first school day after a two-day holiday, then they decrease on the second day (Monday). This does not match previous studies, the results of which showed that students' performances decline on the first day of the week and rise on the second day (Monday), and that the weekly holiday negatively affects them. It is also noticed in the trend performance decreases on Monday, then an increase on the third day (Wednesday), and this is due to the half-day break on Tuesday. Then it drops significantly on Thursday, which is consistent with the results of most previous studies that indicate a decline in student performance on the last days of the week. This is due to exhaustion and fatigue, as the student exerts great efforts throughout the school week. To test the validity of the second hypothesis, we applied the (F) test, the value of which was estimated at $F(3)=0.08$; $P<0.00$ $S \alpha 0.05$. Accordingly, the second hypothesis, which states that attention performance changes during the days of the week

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among students in the fourth year of primary school in the state of Tizi Ouzou, is statistically significant.

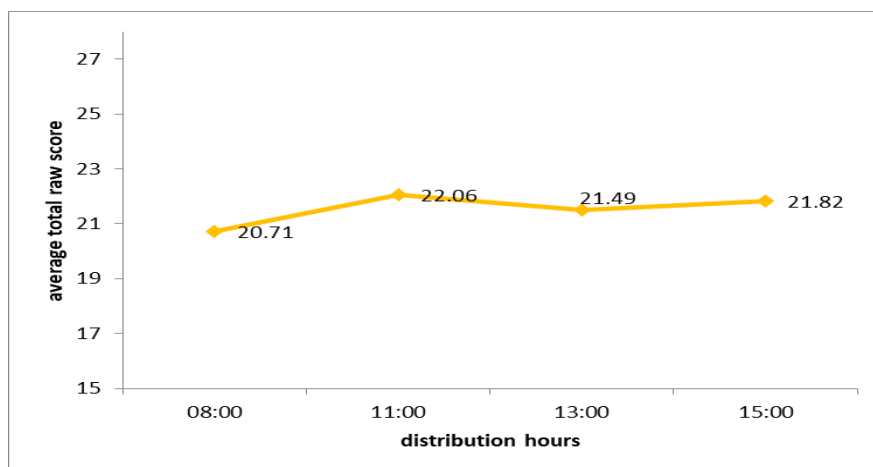
Daily changes in attention performance for fifth-grade primary school students:

Chart N° (04): Daily changes in attention performance for fifth-grade primary school students

Distribution hours	8 o'clock	11 o'clock	13 o'clock	15 o'clock
Average total raw score	20.71	22.06	21.49	21.82

Chart N° (04) shows that the attention performance of fifth-year students changes during the school day, a decrease is noticed at eight o'clock in the morning with an average estimated at (20.71), then an increase at eleven o'clock with an average estimated at (22.06). After that, a decrease appears again at one o'clock in the afternoon with an average estimated at (21.49), to rise slightly at three o'clock in the afternoon with an average estimated at (21.82), and these results are similar to the classic feature identified by previous studies.

Graphical curve N° (03): Daily changes in attention performance for fifth-grade primary school students



It is clear from the graphical curve No (03) that the results of changes in attention performance during the hours of the day for fifth-year students are low at

the beginning of the morning period (eight o'clock), and low at the beginning of the evening period (one o'clock in the afternoon). Then it reaches the maximum increase at the end of the morning period (eleven o'clock), It is also known that there is an increase at the end of the evening period (3:00 PM). To test the validity of the third hypothesis, we applied the (F) test, the value of which was estimated at $F(3)=0.01$; $P<0.27$ NS α 0.05. Therefore, the third hypothesis, which states that attention performance changes during the day among fifth-year primary school students in Tizi Ouzou province, is not statistically significant despite the presence of changes in attention performance during the day.

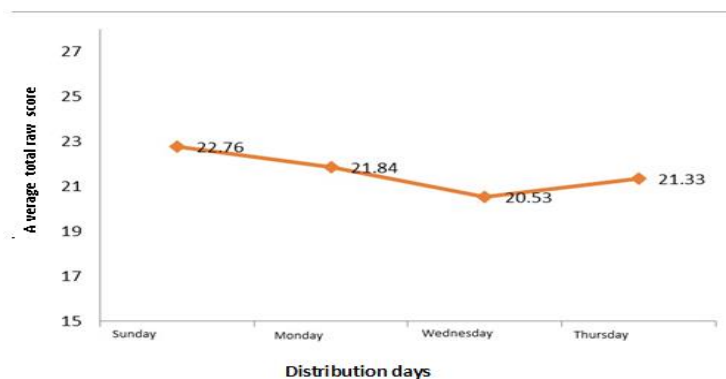
Weekly changes in attention performance for fifth-grade primary school students:

Chat N° (05): Weekly changes in attention performance for fifth-grade primary school students

Distribution days	Sunday	Monday	Wednesday	Thursday
Average total score	22.76	21.84	20.53	21.33

Chart N° (05) shows the weekly changes in attention performances among fifth-year students, with performances witnessing the highest increase on Sunday with an average estimated at (22.76). Then, gradually declining on Monday with an average estimated at (21.84), and continuing to decline on Wednesday with an average estimated at (20.53), then performances witness a rise again on Thursday with an average estimated at (21.33).

Graphical curve N° (04): Weekly changes in attention performance for fifth-grade primary school students



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It is clear from graphical curve N°(04) that the results of weekly changes in attention performance are high at the beginning of the school week (Sunday), then decrease on the second day (Monday), then decrease further on Wednesday. This indicates that the half-day break on Tuesday had a negative impact on the students, and then increased slightly on the last day of the school week (Thursday).

These results are inconsistent with the classic profile of chronopsychological studies, most of which have shown that weekly attention performances decline at the beginning of the school week and increase on the second day, indicating that students are adapting to their studies, and experience the greatest decline on the last day of the school week because of fatigue.

To test the validity of the fourth hypothesis, we applied the (F) test, the value of which was estimated at $(F(3)=03.63; P<0.01 \text{ S } \alpha 0.05)$. Accordingly, the fourth hypothesis, which states that attention performance changes during the days of the week among students in the fifth year of primary school in the province of Tizi Ouzou, is statistically significant.

5. Conclusion

In this study, we described the daily and weekly changes in attention performance among fourth and fifth grade primary school students in Tizi Ouzou province. The results obtained showed that their performances during the daily hours of attention change according to the globally recognized classical pattern identified by previous school chronopsychological research, which decreases at the beginning of the morning period, then increases at the end of the same period, then decreases at the beginning of the evening period and increases in the same period. This is due to the fatigue that students feel at eight o'clock, which they consider too early to enter the classroom and study directly without doing the activities that help them wake up and pay attention when the teacher begins the lesson.

The increase in their performance at eleven o'clock is due to the students' adaptation to studying, and the decrease in their performance at one o'clock in the afternoon is due to the afternoon break, which most students spend running and playing in the yard, which leads to a decline in activity and physical fatigue. Then we notice an increase in their attention performance at three o'clock, due to the students' adaptation again to studying. The results of the weekly changes in attention performance among fourth-year students were interpreted as having the highest increase on Sunday, the first day of the week. This returns to the rest that

the students benefited from during the weekend (Friday and Saturday). This is contrary to what most chronological psychological studies have concluded, which have demonstrated that the weekend has a negative effect on attention performance on the first day of the school week.

As for the second day (Monday), attention performances witnessed a decline due to the onset of boredom and fatigue among the students, and then increased on Wednesday due to the positive effect of the half-day break on Tuesday, when the students regained their energy. It decreases again on Thursday due to fatigue, as students have exerted mental and physical effort in the past school days. Therefore, attention performance on the last day of the school week is consistent with the globally recognized classical profile. As for the changes in attention performance in the fifth year, they are completely opposite to the classic feature, as performances reach their peak on Sunday due to the two-day rest that the students had (Friday and Saturday), then decrease on Monday and Wednesday, and then increase on the last day, which is Thursday. This indicates that fatigue was not the factor that affected the decline in performance in the middle of the school week (Monday and Tuesday), but rather the difficulty in adapting to the study situation.

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