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The psychological effects of inadequate school furniture in Algeria: the case of public primary schools in Oum El Bouaghi city

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Abstract: Ergonomic school furniture is a crucial variable in the quality of a school space. There is a growing awareness that furniture is essential for improving the health, interaction, and performance of pupils. On this basis, the objective of this article is to investigate the influence of the prevailing school furniture in Algeria on the psychological well-being and behavioral patterns of students. This study focuses on public primary schools situated in the municipality of Oum El Bouaghi as the subject of inquiry.

The hypothesis under consideration can be succinctly stated as follows: The inadequacy of teaching furniture to the needs of learners has psychological effects on the quality of their learning.

To substantiate this hypothesis, we employed a quantitative methodology, characterized by systematic observation, rigorous analysis, and the administration of a structured survey of students in the fifth grade of primary education.

The results obtained from the fieldwork highlighted the psychological effects resulting from the inadequacy of the school furniture to the pupils' needs, and that the phenomenon of dispersion of their concentration and their lack of responsiveness and communication with the class, influenced the pupils' scientific and cognitive performance.

This research may stimulate Algerian scholars and educational authorities to engage in deeper contemplation regarding the present and prospective condition of school infrastructure, with the aim of rendering it better suited to the needs of students, encompassing their physical health, behavioral patterns, and, most importantly, their overall welfare.

Keywords: students; school furniture; psychological impact; cognitive level; Algerian elementary school.

Introduction:

Students interact with and handle furniture more than any other element of the design. It is the hub for a variety of activities (learning, eating, relaxing, hanging out with friends and quiet times for reflection) (Kowalk,2022).

Quality school furniture is an actual teaching aid; it can divide the activities in an easy-to-understand and silent manner by dividing them into distinct sections and designing them to promote reflection. It can also help to bring students together, promote conversation, exchange (Kowalk,2022) and early artistic creativity (Envoplan,2019).

Numerous ergonomic hazards have been identified in the context of schools; these include inconsistencies between the demands of the kid and the environment, including seating, desks, storage, board positions, and ambient elements like lighting, sound, and ventilation. General

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exhaustion, discomfort, damage, and even psychological illnesses are examples of negative impacts (Jayaratne,2012).

Throughout the years, the Algerian education system has undergone a series of reforms, spearheaded by the relevant government ministry.

As an illustration, in the year 2013, the Minister of Education put forth a proposal to outfit classrooms with lockers as a measure to address the issue of burdensome school bags (louifi, 2013). To address the same issue, the prime minister insisted in October 2020 that touch-screen tablets be used in elementary schools in an effort to increase the usage of digital technology ("Algerian Press Service", 2020). Nonetheless, the implementation of these choices has not been universally realized. During the academic year 2022/2023, educators devised a solution to the scarcity of storage space by suggesting the retention of school textbooks within the school premises, with the intention of alleviating the issue of unwieldy storage. Regrettably, these declarations, for the most part, remained disconnected from the actual practices within Algerian schools, thereby resulting in the limited execution of both the new and preexisting directives.

With this in mind, we carried out exploratory fieldwork on the furniture used in primary schools in the town of Oum El Bouaghi.

Since this is under the purview of ergonomics and universal design, we are not interested in developing school furniture that can be used by students of varying physical statures. Furthermore, our study does not aim to explore the widely explored topic of health implications. Rather, the goal of our study is to examine how the current furniture affects kids. Essentially, the goal is to determine how children's conduct is affected by furniture that isn't appropriate.

The following is our research's hypothesis: The psychological impact of inadequate learning furniture on students' learning outcomes is evident.

Finding out the quality variables among users during the third term of the 2020–2021 school year among users of eight primary schools (200 children, 09 teachers, 08 head teachers, and 60 parents) was the goal of our first stage of inquiry, which produced the results that we did. We discovered that ergonomics plays a significant role in determining how effectively a school room is designed, and that in order for ergonomic furniture to be multifunctional and suitable for users' well-being, it must be child-sized, pleasant, sturdy, and mobile. Unfortunately, despite advancements in pedagogical science and learning typology as well as shifts in teaching methodologies, state primary school administrators continue to ignore the furniture that has been in place for centuries.

The results of our questionnaire survey indicated that consumers, particularly students, were generally dissatisfied with the condition and inadequateness of the furnishings. Every school that we looked at for our research is ill-equipped, uses furniture that is worn out, uncomfortable, outdated, and stiff, and has an inadequate amount of useful storage space (we found a few table lockers and a single cabinet in every classroom).

According to 85.50% of students, their ideal classroom would include new desks, ample storage, and a pleasant layout.

Related Studies

The amount of research on the effects of ergonomic furniture on children has grown recently; particularly, studies that focus on two primary areas—the effects of ergonomic furniture on students' physical health and anthropometric measurements, as well as their insufficiency with regard to furniture proportions.

Numerous studies have emphasized the evaluation of school furniture design, including Parvez, et al (2022), Arezesa and Viviani (2010), Agha (2010), Podrekar Loredan, Kastelic, Burnard, and Šarabon (2022). Anthropometric measurements of children and students' bodies, such as height, weight, elbow-seat height, shoulder height, knee height, thigh thickness, subscapular height, and hip breadth; buttock-popliteal length. The furniture was chosen without consideration for ergonomics and as a result, the outcomes demonstrated its insufficiency.

Additionally, a number of studies have demonstrated the negative consequences of incorrect sitting postures at school on neck or back pain, supporting the notion that ergonomic furniture design plays

a significant role in influencing kids' physical health at school (Geldhof, et al, 2007) (Araújo, et al 2020) (Oyewole et al, 2010). As well as the wearing of school backpacks on musculoskeletal pain and were correlated with physical activities and the comfort of the school office (Ozdemir et al., 2021).

Other studies such as Carneiro (2017), Freivalds (2010), and Taifa and Desai (2017) have even succeeded in putting forth a novel system of measurement (dimensions) for the construction of ergonomic classroom furniture that is flexible and scalable to accommodate a range of statures. in order to enhance pupils' performance in the classroom and to provide comfort, safety, well-being, sufficiency, and a reduction in discomfort.

However, earlier studies have looked into how educational furniture affects students' psychological health. For example, Leroux's study "SCHOOL FURNITURE: THE ROLE OF COMFORT IN LEARNING" showed how comfortable and useful furniture might improve students' academic performance. Not only does optimal posture assist pupils stay focused and engaged, but it also promotes effective work habits. Moreover, it promotes an increased ability to maintain focus during classes, placing pupils in the best possible learning environment (LEROUX, 2021).

In a French experiment, workshop groups, digital technologies, and furniture (yoga balls, a mat, ergonomic supports to help modify the seating, storage space, and lockers to arrange and access items conveniently) were introduced. The outcome was a startling success, and parents were thrilled with their kids' level of excitement. In this instance, the students demonstrated autonomy and demand by selecting their seat and moving around freely without hindrance or disturbance (Seigneurin and Morand, 2011). In the educational milieu, these students exhibit a higher level of personal engagement in the learning environment, and this positively corresponds with their increased cognitive receptivity and ability to learn (SmithSystem, 2022).

Physical activity has been demonstrated to provide several benefits for children, including improved behavior, lower stress levels, a reduction in symptoms of sadness and anxiety, improved academic achievement, and the development of a sense of belonging at school (Einfeld, et al, 2017, and Grandir & Prince, 2022). In addition to supporting natural body mobility and a variety of seating postures (“Importance of School Furniture”, 2021) flexible ergonomic seating, can enhance blood flow and respiration, which will help students' brains become more active (“How School Classroom Furniture Can Improve Student Learning”, 2022).

1. Research methodology

1.1 A non-random sample was selected, i.e. there was a process by which the data was extracted for analysis;

1.1.1 As a first step: from the programming and monitoring department of the Oum El Bouaghi wilaya's directorate of education and teaching; we collected data concerning the various dates of completion and delivery of urban schools in the town of Oum El Bouaghi, which totalled thirty school groups (January 2019);

1.1.2 The second stage was based on two criteria:

- Analysis of the results of the success rate in the end of primary cycle exam of the thirty elementary school to be able to classify our establishments (from a work of file near the direction of orientation and evaluation of the willaya);

- In order to ensure comprehensive geographic coverage of the commune of Oum El Bouaghi, careful consideration was given to the selection of schools. Consequently, schools were chosen to

be representative of various geographic regions within the commune, including the town center, the historic district, the periphery, and the newly developed areas;

1.1.3 for this stage: the classification of the thirty public schools, which we tried to classify according to four predefined periods, based on a subjective architectural perception as shown in the table below:

For each of the four chronological periods chosen, we took two cases of schools according to the level of success of each of them, the best in terms of success rate and the worst, i.e. with the highest failure rate.

The result of the calculations gave us:

Table 1. Schools studied in the research

Era	Evaluation in relation to the success rate	Name of the school	The date of receipt from the school	The % of the success rate in the exam from 2006 to 2018	Geographic location
The colonial era	good	Elkhansa	1899	88,42	The old city center
	bad	Lyazid Mohamed Elsaleh	1961	85,78	The old city
the colonial post era until 2003	good	Hassani Kaddour	1984	91,74	The northeast extension of the city
	bad	Saidi Triki	1989	73,92	The southern extension of the old city
From the educational reform of 2003 to 2016	good	Djarmene Houssein	2005	93,65	The new city
	bad	Addad Azzouz	2013	81,38	The new city
2017, 2018	good	Abdri Ibrahim	2017	90,00	The northwest extension of the city
	Bad	Bouzid Elmeki	2018	64,29	The new southern extension

Source: the authors, 2019

Presentation of the case studies:

Table 2. Presentation of the studied schools

name of the school	number of classrooms	Initial capacity (2019)	Total number of students (2021)	Total surface m2
Elkhansa	12 D-type	396	390	2918.10
Lyazid Mohamed Saleh	12 D-type	391	410	4605.63
Hassani Kaddour	13	314	321	3100
Saiidi Triki	16	618	700	4356.79
Djarmene Houssein	06 B-type	300	320	3500
Addad Azzouz	12 D-type	665	497	It is the largest school among the urban schools in the city
Abdri Ibrahim	06 planned type B classes, 07 existing classes.	68	70	1995.67
Bouzid Elmeki	12 D-type	/	744	2044.17

Source: the authors, 2019

1.2. Our investigation began with personal observations through visits to the schools we surveyed. These visits are documented by photos and measurements of double tables with seats attached and in rows.

Drawing on the results of subsequent research and individual semi-structured interviews with primary school teachers to obtain their views on the influence of the furniture used on the pupil and to gather information.

The determination of the data collection approach centered on the adoption of an objective, statistically-driven methodology primarily focused on the acquisition of quantitative data. This method was selected to amass a substantial dataset, thereby facilitating the formulation of robust and dependable conclusions.

The instruments chosen were:

Individual Semi-structured interviews with primary school teachers to find out their opinions on the influence of the furniture used on the student and collect information for the development of the questionnaire;

And a semi-directive questionnaire aimed at students, to obtain information about the school furniture and its influence on the behavior and psychology of the child according to six axes: need and convenience, freedom of movement, safety, and confidence, feeling of disturbance, feeling of boredom, dispersion of attention and concentration; using a semantic scale (five degrees) Likert scale.

This scale offers a set of numerical or verbal response options covering a range of opinions on a subject. It is always used with closed questions (questions with a choice of predetermined answers).

The Likert scale includes three, five, or seven response options, covering the entire spectrum of opinions, from one extreme to the other. Likert-type questions generally include a moderate or neutral response option.

Using a Likert scale in a survey makes it possible to reliably measure the degree of satisfaction or opinion on a given subject, with a minimum of ambiguity. The results obtained are accurate, easy to interpret, and transform into statistics.

Table 3. The 5-point Likert scale

Likert scale	Interval	Length	Description	level
1	[1, 1.80)	0.80	to a high degree	Strong
2	[1.80,2.60)	0.80	medium degree	
3	[2.60, 3.40)	0.80	somewhat	average
4	[3.40, 4.20)	0.80	to a minimum degree	weak
5	[4.20, 5]	0.80	never	

Source: the authors, SPSS, 2023

The questionnaire (before it was submitted to the respondents) was revised and corrected by three specialists in educational psychology and the questions were rephrased to the students, according to their level of understanding and skills. We also asked the specialists to validate the information provided in order to increase its credibility.
414 valid forms were collected, and 441 students aged between 09 and 12 were questioned in February 2023 (the age of the pupils questioned was determined by the training and inspection department of the directorate of education and teaching in the wilaya of Oum El Bouaghi, the reason being that pupils in fifth year have more comprehension skills than other classes).

Table 4. Shows the number of people and forms per school

name of the school	study population(students of the 5th grade)	distributed forms	returned forms
ElKhansa	56	56	56
Lyazid Mohamed ElSaleh	65	65	62
Hasani Keddour	45	45	41
Saiidi Triki	102	73	57
Djermane Houssein	66	66	65
Addad Azzouz	110	/	/
Abdri Brahim	15	15	13
Bouzid Elmeki	154	121	120

Source: the authors, 2023

The study is based on a quantitative approach.

The statistical data from our research were analysed using SPSS version 26 statistical software for the social sciences.
Descriptive results were presented in the form of frequencies and percentages for qualitative variables (gender), and percentages, averages, and standard deviations for quantitative variables.
The statistical methods used in this work are of two types. Firstly, a descriptive analysis (univariate and bivariate) with indicators of central tendency and dispersion was used to explore the different variables and establish links between the explanatory variables and the dependent variable. Secondly, various statistical tests were used as required: Cronbach's alpha test to indicate the reliability and validity of the questionnaire, with a Cronbach's alpha value of over 70% (72%);
The linear regression test, which serves as a modeling technique, is employed to delineate a linear association, commonly referred to as a relationship of influence, between a continuous numerical variable designated as the "explained variable" or dependent variable and a collection of other

continuous variables recognized as the "explanatory variables." In a more granular context, it offers an explanatory model that anticipates the behavior of the dependent variable as a function of the independent variables. This module is exclusively dedicated to the examination of simple linear regression, aiming to model the predictive interdependence between the dependent variable and a solitary independent variable.

Risk analysis (variance test) The odds ratio (relative risk) is frequently used to highlight the strength of an association between risk factors and clinical outcomes.

The relative risk is used in the statistical analysis of data, to estimate the association between treatments or risk factors and results.

Concluding with the correlation examination, the Pearson correlation coefficient was computed for this analysis. This coefficient is employed to gauge the strength and direction of a linear association between two quantitative variables. It is essential to note that this statistical measure is theoretically applicable when the population under investigation adheres to a normal distribution for both of the aforementioned variables.

Correlation coefficient r	Correlation
From 0 to 0.24	low
From 0.25 to 0.74	Medium
From 0.75 to 0.99	Strong
1	Perfect

If the value of the correlation coefficient is positive, then there is a direct correlation and if it is negative, then the relationship is inverse.

2. Interpretation of results

Fig.1. Represents the school furniture in the classrooms of the surveyed schools

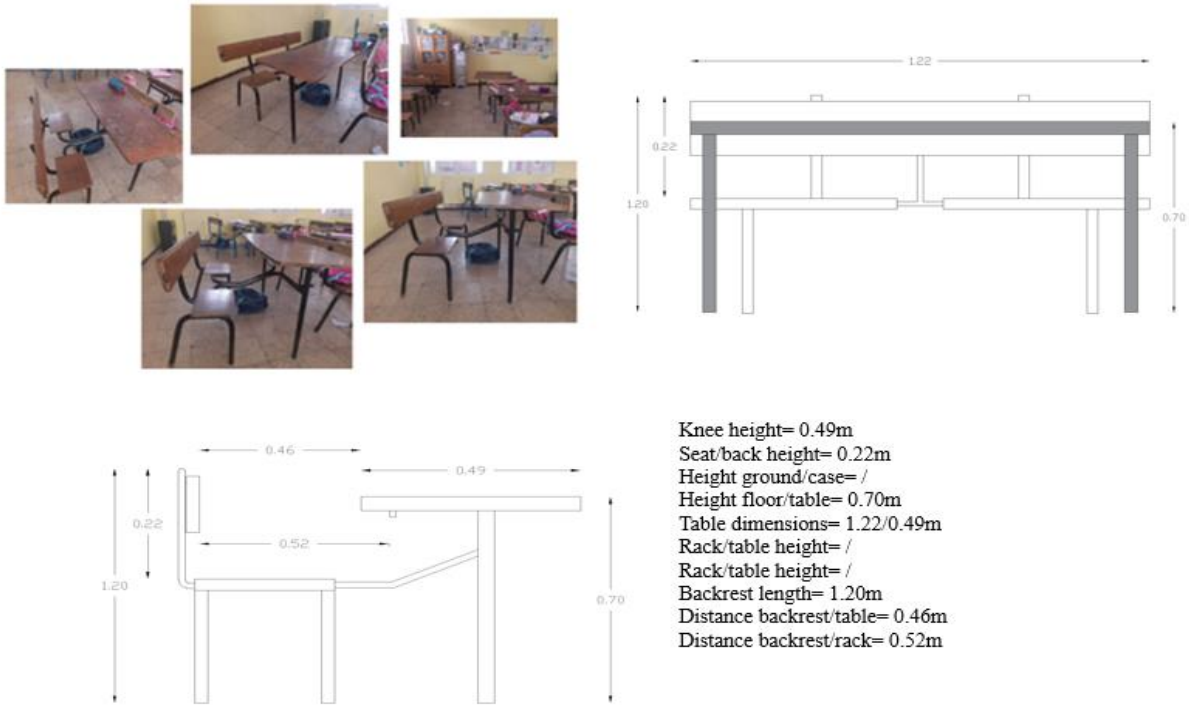
Source: the authors, 2022

2.1 The results of our observation and analysis:

2.1.1 Most of the classrooms in the schools surveyed have old-fashioned double desks with attached seats and rows facing the blackboard; as for the preschool class in the majority, it is arranged in several activity corners and individual furniture on a small scale.

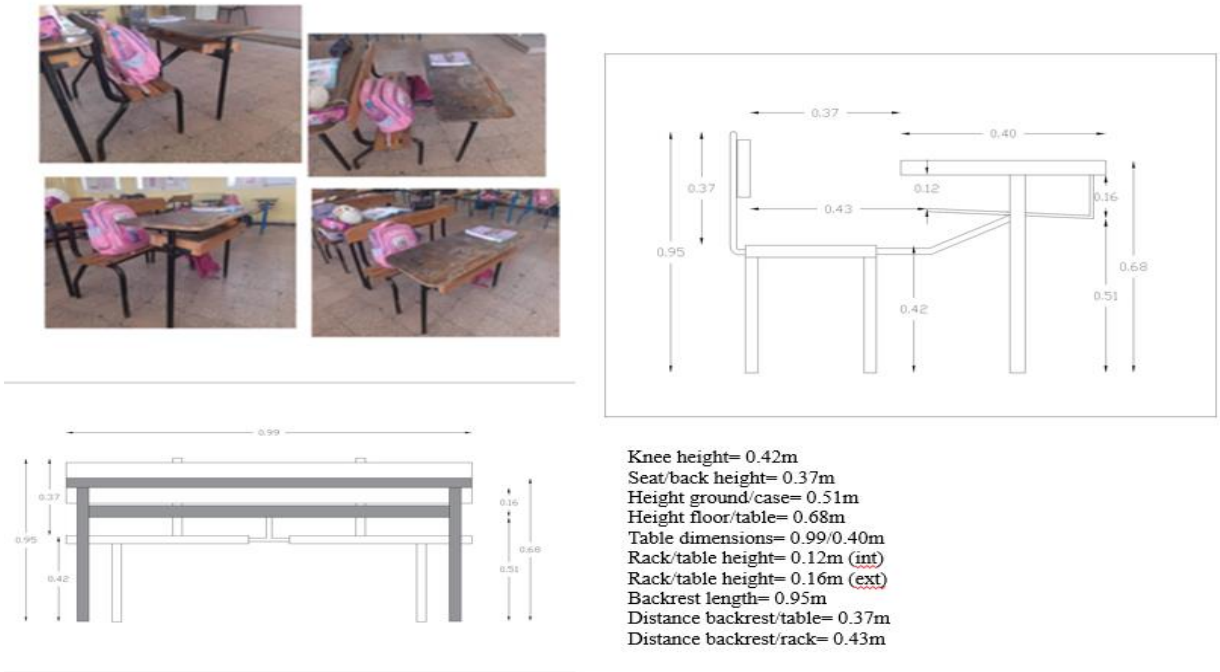
A teacher's desk is raised on a wooden or concrete platform and a whiteboard, and sometimes no platform and other necessary equipment in the schools on the outskirts. One wall cabinet per classroom;

Fig.2.Shows the largest existing double table in this class and its measurements



Source: the authors, 2023

Fig.3. shows the existing small double table in the same class as the table in the figure above and its measurements



Source: the authors, 2023

2.1.2 the fifth-grade class is characterised by tables of different sizes that are not appropriate to the size of the pupils using them; at first glance we notice that the size of the pupils does not correspond to the size of the tables (tall pupils sit at the smallest table and vice versa).

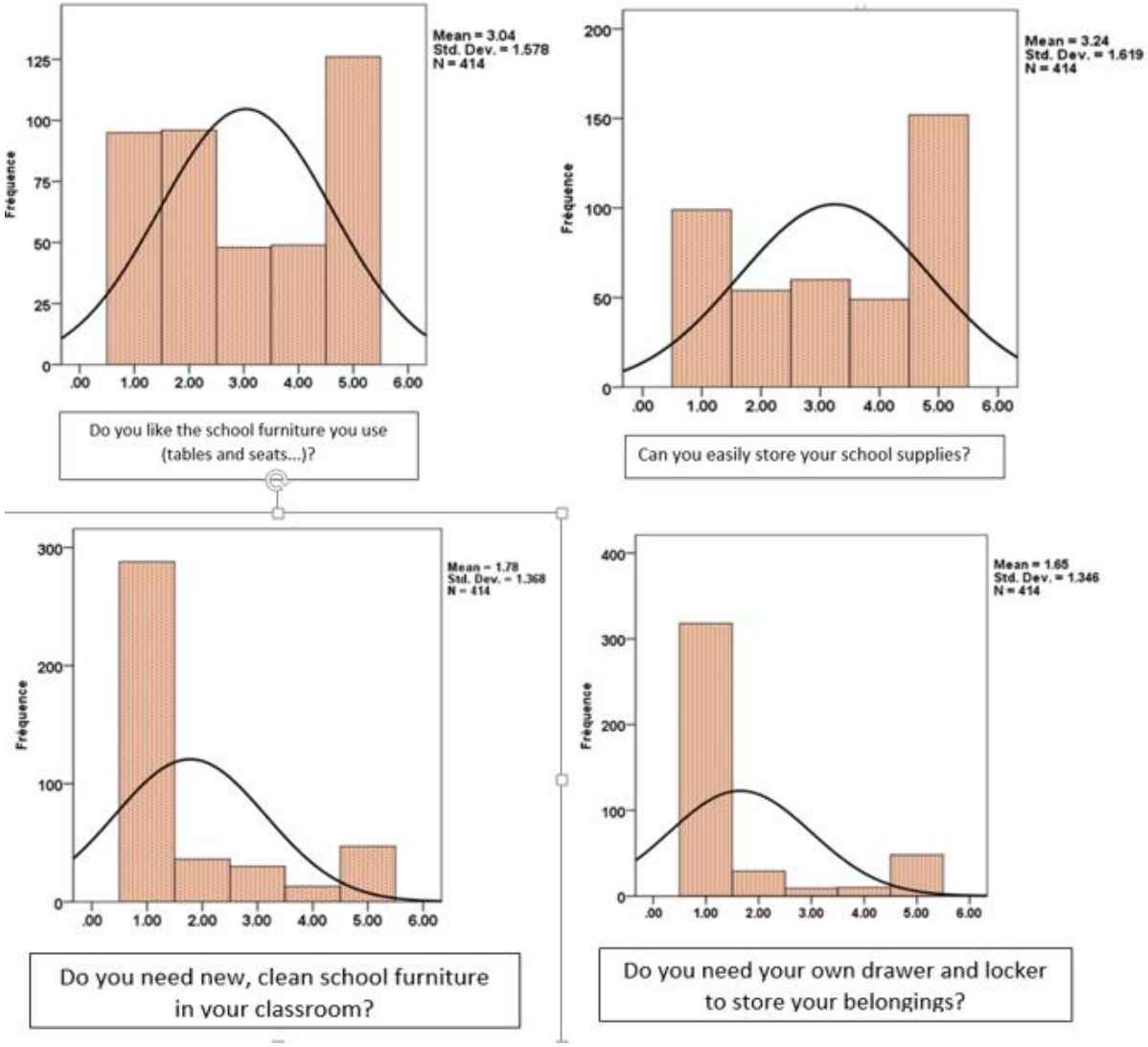
2.2 In the following the results of our survey:

We used a histogram graphic presentation, so we calculated the weighted average displayed for each analysis section (the overall average of responses) and the standard deviation.

On each histogram, the X axis represents the question asked with the five degrees of the Likert scale and the Y axis represents the frequencies.

These histograms graphically present the results of the survey:

Fig.4. Histograms that show the distribution of needs and amenities



Source: the authors, SPSS, 2023

The first and second histograms show a high percentage in the fifth degree 30.40% and 36.70% which explains that the student does not like his furniture and finds it difficult to put his things away; the rest of the percentages were divided between the different degrees;

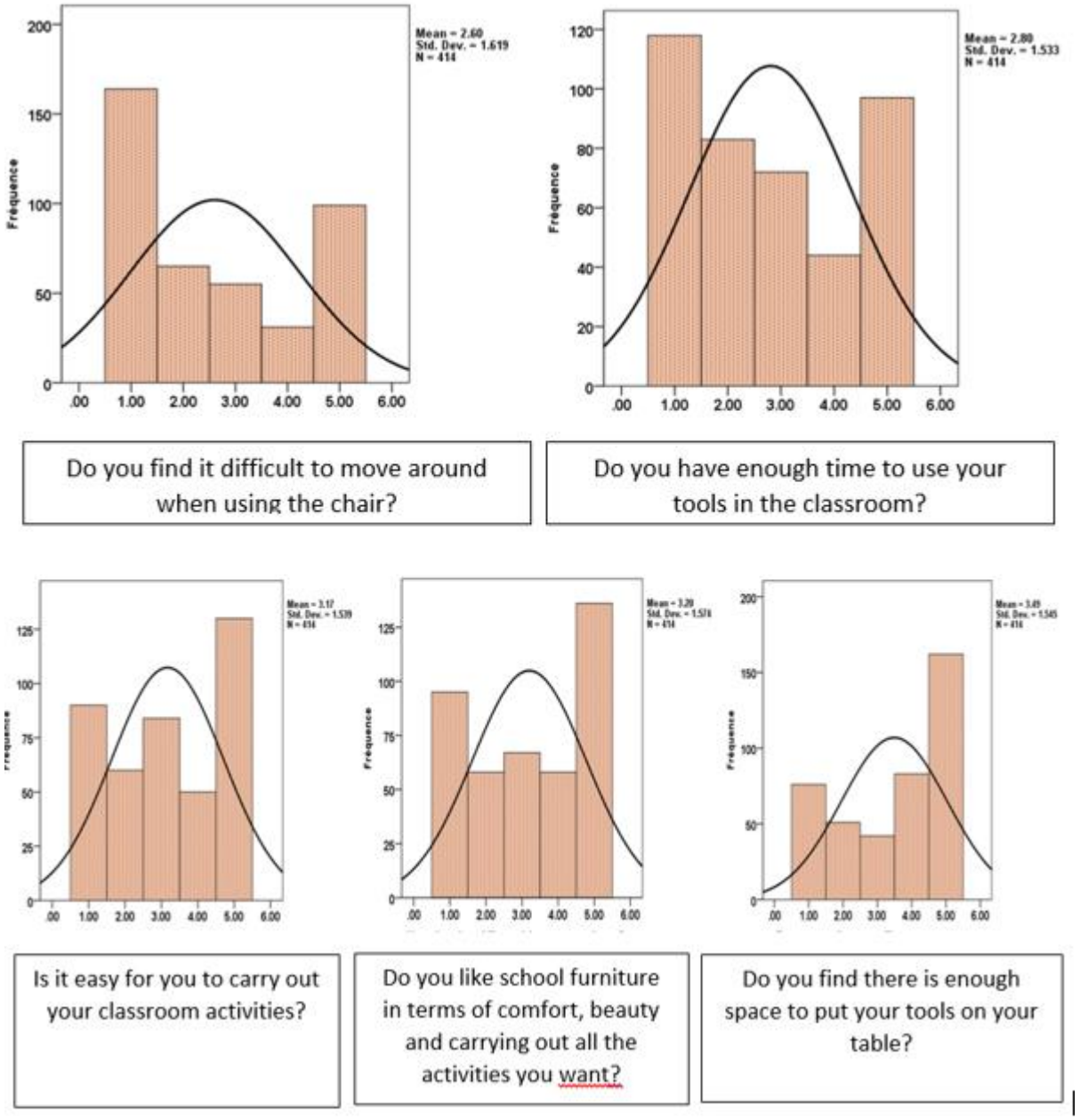
This explains the weighted average of the weights which reaches the value (3.14) with a standard deviation (of 1.260), which corresponds to the average degree according to the Likert scale (because it belongs to the interval [2.60, 3.40);

On the other hand, for the third and fourth histograms, the high percentage was in the first degree (strong degree) with the values 69.60% and 76.80%, which explains the demand and the search for new furniture by the student as well as personal storage; the rest of the percentages were divided between the different degrees;

The weighted average of the weights reaches the value (of 1.725) with a standard deviation (of 1.074), which corresponds to the strong degree (because it belongs to the interval [1, 1.80)

The results show that the existing furniture does not meet the needs and is not comfortable for the students.

Fig.5. Histograms showing the distribution of freedom of movement



Source: the authors, SPSS, 2023

The first and second histograms show a high percentage in the first degree 39.60% and 28.50% which explains the difficulty of movement and motion; the rest of the percentages were divided between the different degrees;

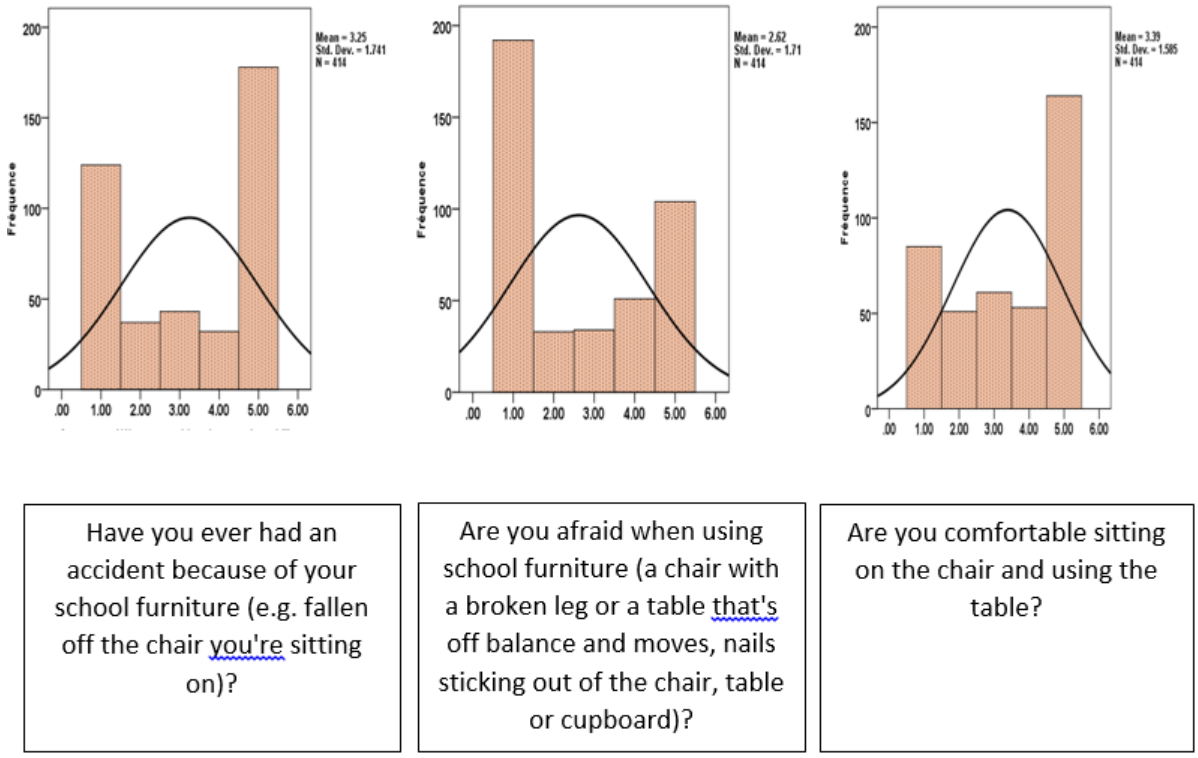
This explains, according to the Likert scale, the weighted average of the weights that reaches the value (2.715) with a standard deviation (1.207), which corresponds to the average degree (because it belongs to the interval [2.60, 3.40) ;

Conversely, the histograms presented for the third, fourth, and fifth categories prominently exhibit a substantial concentration within the fifth grade, with respective proportions of 31.40%, 32.90%, and 39.10%. This observation not only elucidates the challenges encountered in executing a diverse range of activities but also underscores the constraints experienced by the students, particularly in terms of spatial limitations at their desks, hindering their mobility and the placement of their belongings. The remaining percentages are dispersed across the remaining grade categories.

It can also be seen from the above histograms that the weighted average reached its value (3.286) with a standard deviation of (0.890), which corresponds to the average grade (as it belongs to the interval [2.60, 3.40).

The results show that the school furniture hinders the movement of the pupils when they use the seat and the table, as well as when they want to move around freely, or carry out any activity in class; this restricts their movements.

Fig.6. Histograms showing the distribution of confidence, security, and safety



Have you ever had an accident because of your school furniture (e.g. fallen off the chair you're sitting on)?	Are you afraid when using school furniture (a chair with a broken leg or a table that's off balance and moves, nails sticking out of the chair, table or cupboard)?	Are you comfortable sitting on the chair and using the table?

Source: the authors, SPSS, 2023

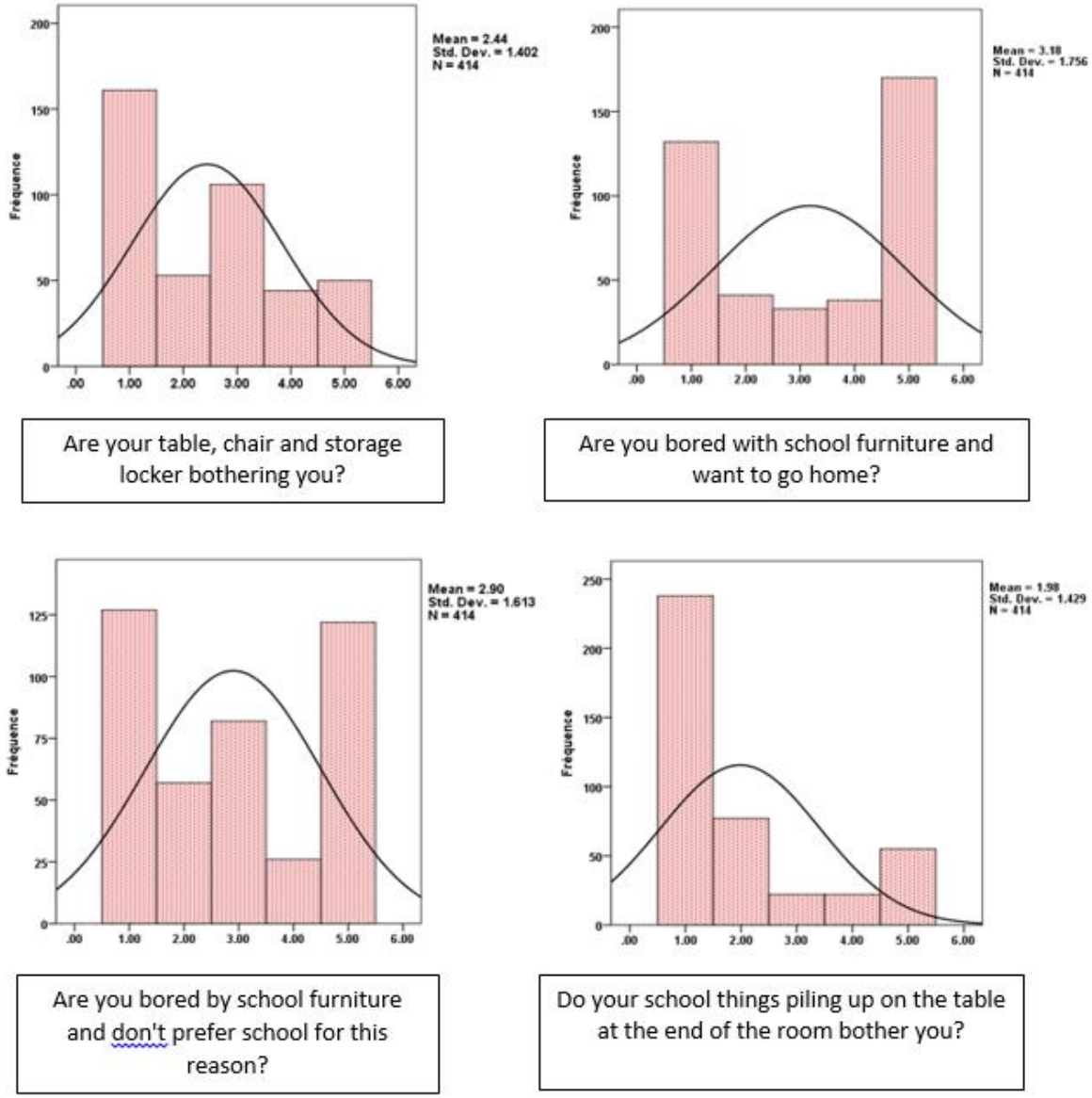
The first histogram shows a high percentage in the fifth degree with 43% but 30% by a strong degree which explains that there are really accidents because of the furniture, the same thing for the third histogram with 39,60% which explains the student's dissatisfaction and discomfort when using the seat and table; The rest of the percentages were divided between the different degrees;

On the other hand for the second histogram, the high percentage was in the first degree with 46,40% which explains the feeling of insecurity and fear at the time of the use of the furniture;

The cause is simple: at the level of the eight primary schools, we find a chair with a broken leg or an unbalanced table that moves, nails coming out of the chair, table or cupboard; the rest of the percentages are divided between the different levels.

The findings demonstrate that the student displays his dread and uneasiness about his furniture as a result of the accidents that the state has suffered as well as the threat posed by this ancient and, in particular, poorly maintained furniture.

Fig.7. Histograms that show the distribution of the feeling of disturbance

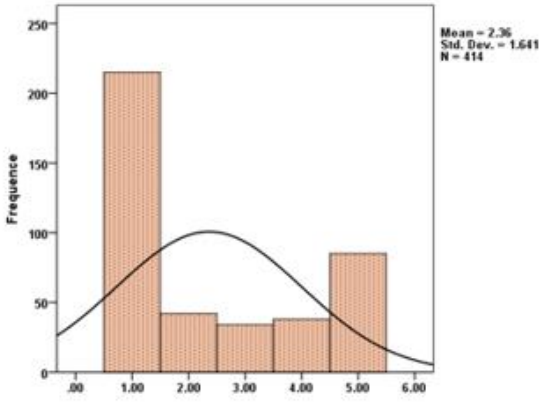


Source: the authors, SPSS, 2023

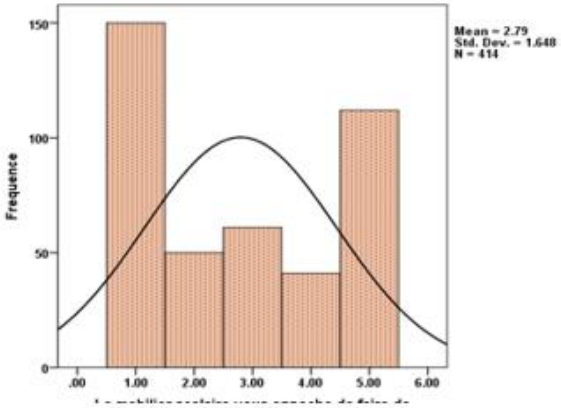
Interpretation of the histograms in Figure 11 above shows a high percentage in the first degree which explains the disturbance caused by the use of the furniture, the inadequacy and clutter of the stuff (notebooks, coats, jackets ...) pile up at the back of the classroom; the rest of the percentages were divided between the different degrees.

It also appears according to the Likert scale that the weighted average of the weights reaches the value (of 2.625) with a standard deviation (of 0.967), The degree of this value is considered as (Average degree) because it belongs to the interval [2.60, 3.40);
The results show that the school furniture causes disturbance to the students, manifested by their feeling of discomfort.

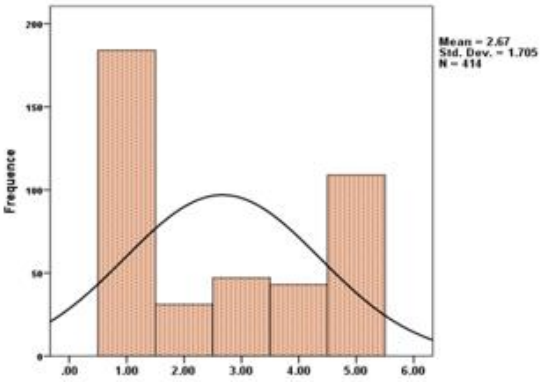
Fig.8. Histograms showing the distribution of the feeling of boredom



Are you bored by the constant use of the same school furniture for a long time in your school?



Does the school furniture prevent you from doing new things in the classroom?



Are you bothered by the same colors and locations for your classroom furniture?

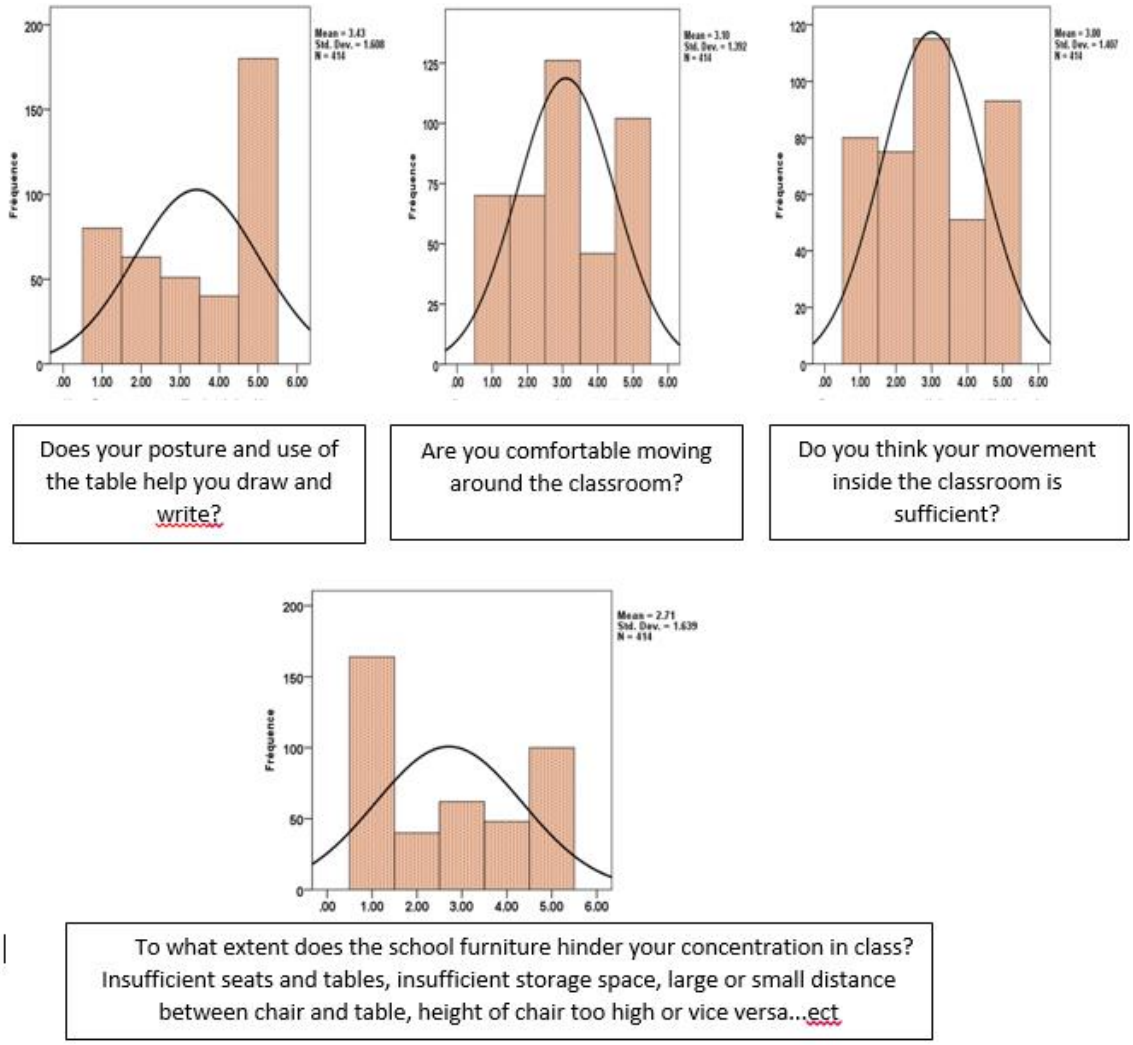
Source: the authors, SPSS, 2023

The histograms show a high percentage in the first grade, which explains the boredom expressed by the students by the constant use of the same furniture, the same colors, and the same location, layout, and position during. All these years in elementary school as well as the repetition of the same tasks throughout their cycle or even the blocking of new activities in the classroom. The rest of the percentages were divided between the different grades;

According to the Likert scale, this clarifies the reason why the weighted average of the weights has a value (2.607) and a standard deviation (1.330) that are both equal to the average degree (since it falls within the range [2.60, 3.40]).

The results show that the same school furniture with the same layout for years at school causes boredom and monotony, which contributes to hindering creativity in pupils, making them automatons, especially as the fixed, cold layout of the furniture encourages repetition of the same tasks and activities.

Fig.9. Histograms showing the distribution of the dispersion of attention and concentration



Source: the authors, SPSS, 2023

Interpretation of the first histogram shows a high percentage in the last grade at 43.50%, which explains the difficulties encountered by the pupil in writing or drawing on the table. The rest of the percentages are divided between the different levels.

The second and third histograms show a high percentage in the middle grade with successive values of 30.40% and 27.80%, but we note that the last grade shows high percentages of the order of 24.60% and 22.50%, which explains the discomfort in which the pupils work in the school. The rest of the percentages are divided between the different levels.
As for the last histogram, it shows a high percentage in the first grade at 39.60%, which is interpreted by the fact that the pupil sees that the furniture (insufficient seats, tables and storage, the distance between the chair and the table is large or small, the height of the chair is too high, etc.) is an obstacle.

The findings underscore that the classroom furniture constitutes a significant impediment to students' execution of fundamental tasks, notably writing and drawing. This concern has been consistently raised by educators, chiefly due to the pronounced deterioration of the desks, which students frequently request replacements for on a daily basis. Consequently, instructors find themselves frequently compelled to interrupt instructional sessions to address these student requests. This recurrent interruption negatively affects the overall stability of the classroom environment,

particularly in terms of cognitive processes, necessitating considerable effort and additional time to restore a tranquil and conducive learning atmosphere.

So, from the varied analysis of the questionnaire, we were able to conclude that: the majority of pupils expressed dissatisfaction with the furniture, and were looking for new desks and personal storage units that best met their needs in terms of movement, safety and comfort, with a view to finding better learning conditions.

To understand the relationship of influence between the different variables in the questionnaire, we used the linear regression test, as shown in the attached summary table:

Table 5. Summary table showing the results of the regression test

The relationship		**Feeling of disturbance**	**Feeling of boredom**	**Dispersion of attention and concentration**
Needs and amenities	R (correlation coefficient)	0.317	0.239	0.425
	R^2 (correlation coefficient) ^{2}	0.100	0.057	0.181
	Regression Equation	Y=4.223-0.413X	Y=3.731- 0.227 X	Y=1.439 + 0.536 X
Freedom of movement	R (correlation coefficient)	0.202	0.188	0.199
	R^2 (correlation coefficient) 2) ^{2}	0.041	0.035	0.040
	Regression Equation	Y=3.775 - 0.186 X	Y=3.615 - 0.126 X	Y=2.723 + 0.177 X
Trust, safety and security	R (correlation coefficient)	0.238	0.219	0.366
	R^2 (correlation coefficient) ^{2}	0.057	0.048	0.134
	Regression Equation	Y=4.412 - 0.390 X	Y=4.068 - 0.261 X	Y=1.541 + 0.581 X

Source: the authors, 2023

The results show that there is: a correlation between the variables that make up the survey (psychological variables and behavioral variables);
The table shows the influence relations presented by regression equations;
The correlation that has received the highest ratings is the significant relationship between the student's need and discomfort and the dispersal of attention and concentration. This relationship is followed by a lesser degree of disruption and a higher degree of boredom.
Then the relation of influence between the insecurity of the student and the dispersion of attention and concentration with the highest value, then to a lower degree the feeling of disturbance, and with a decreased value the feeling of boredom.
And finally the influence relation between the restriction (limit of movement) of the pupil and the dispersion of attention and concentration with the highest value, then to a lower degree the feeling of disturbance and with a lower value the feeling of boredom.
In order to know the nature of the influence, we used:
The risk analysis (Odds ratio): the cross-tabulations and the tables of the risk analysis were used in the following summary table:

Table 6. Summary table showing the results of the risk value analysis

/		Disturbed feeling	Dispersion of attention and concentration	Feeling of boredom
Needs and Convenience	yes	0.515	0.619	0.784
	No	1.464	1.940	1.291
freedom of movement	yes	0.393	0.899	0.678
	No	1.251	1.478	1.418
Trust, security and safety	yes	0.573	0.629	0.686
	No	1.418	2.081	1.452

Source: the authors, 2023

The results show that:
1/ The values of the behaviour variables increase when we notice the absence of the first variable: need and convenience, comfort, freedom of movement and finally insecurity.
So: Need and discomfort, restriction and insecurity are important risk factors that would produce dispersion of attention and concentration (N=217, 252, 227 students who responded)

2/ Need and discomfort, restriction, and insecurity are important risk factors that would produce the sensation of daily disturbance and discomfort (N=169, 200, 233 students who responded)

3/ Need and discomfort, restriction, and insecurity are important risk factors that would produce the sensation of boredom (N= 152, 188, 164 students who responded)
As a final step, we carried out a correlation test between the different variables produced by the survey.

Based on the outcomes of the Pearson correlation test, the following observations were made:
1. There exists an independent relationship between the feelings of boredom and annoyance. This implies that there is no discernible association where the child's experience of disturbance and annoyance consistently increase or decrease in tandem, but rather their correlation exhibits varying degrees of fluctuation.

2. Conversely, a negative correlation was identified between the sensation of disturbance and the degree of attention and concentration dispersion. This deduction is drawn from the level of statistical significance, which falls below the 5% threshold (-0.304). It should be noted that the significance threshold for all tests conducted was set at $p < 0.05$.

3. A similar inverse relationship was found between the sensation of boredom and the dispersion of attention and concentration, with a significance level below 5% (-0.188). The negative coefficient value elucidates the inverse proportionality of this relationship, wherein one variable tends to increase as the other decreases.
In summary, boredom and embarrassment emerge as contributing factors that precipitate the dispersion of attention and concentration among the children under study.

Conclusion

The school furniture used in the schools studied in the town of Oum El Bouaghi is said to cause insecurity, discomfort, restriction, anxiety and boredom, all of which lead to dispersion of attention and concentration in the learner.

To find out more about the effects of dispersion of attention and concentration in class, we turned to specialists in the field of educational psychology and ADD specialists, with or without hyperactivity;

As for the phenomenon of "distracted attention and concentration", a tangible, perceptible sign for the child is linked to the current school furniture, it increases the difficulty of writing, reading, calculating and beyond losing the sequence of information.
The pupil doesn't realise the source of the problem, he loses his rights, his self-esteem so he falls into error, his self-confidence diminishes and he becomes a hesitant person and this is what affects his cognitive abilities.

With the aspiration that our humble endeavor may provide a guiding path for Algerian researchers and authorities to contemplate and reevaluate the existing and forthcoming conditions of educational facilities in alignment with the specific needs of children, their behavior, and, most significantly, their overall well-being.

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