Learning difficulties in Moroccan students: results of an investigation of chemistry students

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Abstract: Our research is intended to provide data on learning difficulties within students from scientific majors and the causes of school failure and abandon phenomena in the university. In this research, we are interested in the study of learning difficulties.
519 chemistry students belonging to the Faculty of Sciences Ben M'sik at the University Hassan II Mohammedia -Casablanca participated in the survey. They are aged between 17 and 23 years and suffer no physical or mental disability. The questionnaire consists of 101 questions grouped into 8 themes.Our results indicate that communication disorders impact students' self-confidence. Therefore, we can think that through their influence on self-confidence, these disorders cause a decrease in academic performance. High self-confidence is associated with the retention and academic success while a low self-confidence is associated with school failure and abandonment.

I. Introduction and problem

This survey was designed to identify learning difficulties within Moroccan students studying chemistry, focusing on communication disorders and the difficulties that these disorders may lead beyond only language aspects.

II. Method

a. Participants:

The surveyed population consists of students from 1st, 2nd, 3rd year of university, chemistry. Our sample consisted of 519 students, representing three semesters. This is S2, S4, and S6.

Tab1 Distribution by semestre

	Semester S2	Semester S4	Semester S6
Female	190	71	47
Male	164	27	12
Total	354	98	59

Both semesters S4 and S6 have an effective majority Female (respectively 72% and 80%). However, the proportion of male students is higher in S2 (46% male / 54% female) (Chi2 = 21.7, p> 0.001). The average age of students is 20 years; there was no significant difference between male and female students.

b. Measures:

The questionnaire consists of 101 questions grouped in 08 themes. The first is the academic membership of the student (university, discipline, BA). The second theme on the school career (change of discipline, late at school ...), the third theme focuses on the frequency of contact with teachers, families and students, the fourth theme aims to provide data on the behavior of student learning, then there is the theme of self-esteem that integrates across Coopersmith then the theme on the integration of graduates into the industry outlook, and the theme questioning the personal data (gender, age, siblings, civil status). The final theme focuses on health in 4 areas: general health, communication disorders, disorders impact, health practices and addictive behaviors.

As our study will focus on the linked between learning difficulties and self-esteem, we will only detail the measures assessing these two aspects.
  - ➢ Learning is based on two types :
    - STUTTERING
    - DYSLEXIA

> ➤ Inventory questionnaire Coopersmith Self-Esteem is the test that was constructed to measure evaluative attitudes towards oneself in social , Family and school.

The 42 Selected items is the distribution as follows:
- General measure (18 items) :1,2,7,8,13,14,15,19,20,22,23,27,32,36,37,40,41,42.
- Social measure (6 items) : 3, 9, 16, 24, 28,38.
- Family measure (6 items) : 4, 10, 17, 21, 29,33.
- School measure (6 items) : 6, 12, 26, 31, 35,39.
- A lie measure (6 items) : 5, 11, 18, 25, 30,34.

This theme must be answer to each statement by checking the appropriate box :"Like me" or "not like me ".

Five thematic indices of self-esteem are produced: These are the general self-esteem, social, educational, family and lies.

The notes to the different subscales, and the total score used to assess in which areas and how the subjects have a positive image of themselves.
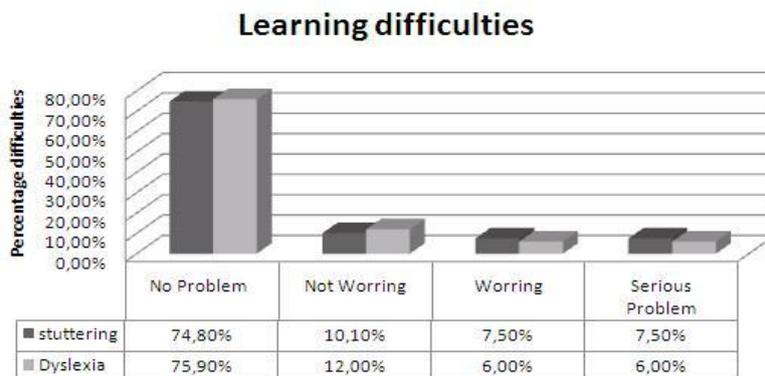
c. Procedure

The survey was conducted in April, May, June 2013. The questionnaires were distributed to students at the end of a course. A period of 10 minutes was devoted to the presentation of the questionnaire, its goals and how to respond. Then, the following 25 minutes were allowed for students to complete the questionnaire. The questionnaires were collected immediately by the experimenter.

Analysis:

After data collection (June 2013), we used SPSS for data processing and analysis.
Students were asked about the presence of learning difficulties, the following chart shows the two main types of learning difficulties.

Learning difficulties

	No Problem	Not Worring	Worring	Serious Problem
stuttering	74,80%	10,10%	7,50%	7,50%
Dyslexia	75,90%	12,00%	6,00%	6,00%

Graph2: Percentage of learning difficulties on the part of chemistry students

The results indicate that a quarter of students surveyed 25.2% are affected by a form of stuttering. 40% of students affected in the disorder which is not worrisome as they are 30% to 30% and disturbing judge to judge serious. This is more than half of students with stuttering who are concerned about this disorder.

24.1% of students report being dyslexic. Half of students reported being affected (50%) by a disorder is not worrisome as they are 25% to 25% and disturbing judge to judge serious. This is nearly half of students with dyslexia who is concerned about this disorder.

Impact Of Learning Difficulties On Self-Estem
Stuttering

We compared the average student not affected by the stuttering, those affected by stuttering. The comparison indicates that the average student at general self-esteem is 9, while impacted by the disorder students evaluate their self-esteem, averaging 8.2 (F = 3.91, p = 0.048), which implies an impact of the stuttering on the overall scale. However, the average student affected by the problem is high at the family level, compared to the average of other students (2.30 and 2.07 respectively, F = 4.05, p = 0.045). You can see a difference in the effect of increased support within the family towards the students affected by this problem. However, at the school level students evaluate their academic self-confidence at 3.03 while the average undisturbed students is 3.32 (F = 4.17, p = 0 .042). Affected students feel they have more obstacles in academic achievement; it may have originated difficulty making speech and expression being.

Tab2 Average scores of self-esteem scale Coopersmith depending on the presence or absence of a disorder of stuttering

Scale	stuttering	N°	Average	Standard deviation	F	p
General	No problem	290	8,8586	2,19247		
	Problem	99	8,3535	2,31373	3,919	,048
	Total	389	8,7301	2,23183		
Family	No problem	324	2,07407	1,00189		
	Problem	112	2,30357	1,055567	4,050	,045
	Total	436	2,13303	1,019674		
Social	No problem	310	2,2742	1,04849		
	Problem	105	2,181	1,04496	,644	,423
	Total	415	2,2506	1,04712		
School	No problem	302	3,3278	1,24499		
	Problem	105	3,0381	1,32957	4,176	,042
	Total	407	3,2531	1,27203		
Lie	No problem	313	3,1534	1,24633		
	Problem	107	3,215	1,35304	,109	,717
	Total	420	3,169	1,273		

Dyslexia

We compared the average student not affected by problem those affected by dyslexia. The comparison shows that the average student at General esteem is 8.9, while affected by dyslexia students rate their confidence on average 8.34($F = 4.59 p = 0.033$). The same at the school level students evaluate their academic self-confidence to 2.90 while the average undisturbed students was 3.35($F = 9.58$, $p = 0.002$). This proves that dyslexic students experience barriers to academic level, it may have originated learning difficulties due to dyslexia when learning these involve writing.

Tab 3 Average scores of self-esteem scale Coopersmith depending on the presence or absence of a disorder of dyslexia

Scale	Dyslexia	N°	Average	Standard deviation	F	P
General	No problem	288	8,9167	2,1928		
	Problem	92	8,3478	2,28918	4,596	,033
	Total	380	8,7789	2,22686		
Family	No problem	317	2,08202	0,99979		
	Problem	110	2,17273	1,030357	,353	,553
	Total	427	2,10539	1,007318		
Social	No problem	308	2,25	1,01415		
	Problem	99	2,2525	1,10973	,000	,996
	Total	407	2,2506	1,03681		
School	No problem	298	3,3624	1,24838		
	Problem	102	2,902	1,30125	9,581	,002
	Total	400	3,245	1,27634		
Lie	No problem	312	3,1442	1,27366		
	Problem	104	3,3558	1,29163	2,183	,140
	Total	416	3,1971	1,27991		

III.   Conclusions:

Based on these results we can see the impact of learning difficulties on self-esteem, school, and we see that the problem are considered factors of learning difficulties.

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