

Impact of learning difficulties and communication disorders on Moroccan students' academic achievement

Fatima Zahra Soubhi*, University Hassan II de Casablanca, Morocco.

Laurent Lima, University Pierre Mandes France.

Bouzekri Touri, University Hassan II de Casablanca, Morocco.

Mohammed Talbi, University Hassan II de Casablanca, Morocco.

Noureddine Knouzi, University Hassan II de Casablanca, Morocco.

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Abstract

The purpose of this study was to explore the effects of hearing disorders, voice disorders, stuttering and dyslexia on the academic performance, the feelings of social rejection and the impact on self-confidence of universities science students in Morocco.

229 students belonging to a biology college and an engineering school of the University Hassan II in Casablanca participated in the survey. The average age of the students was 22 years, and they suffered no physical or mental disability.

Our results indicate that these disorders are related to low self-esteem, the development of a feeling of social rejection and were considered as major difficulties in terms of success in academic studies. The majority of students say that they encountered difficulties with regard to continuing their studies, which suggests that these disorders are a cause of academic failure.

Keywords: Communication disorder, learning difficulties, academic performance, self-confidence.

* ADDRESS FOR CORRESPONDENCE: **Fatima Zahra Soubhi**, University Hassan II de Casablanca, Morocco.
E-mail address: fsoubhi@gmail.com

1. Introduction

The purpose of this survey was to identify the impact of communication disorders (Hedge, 2009) and learning difficulties on self-esteem and success in terms of academic achievement among university students in Morocco. Given that such students don't receive any psychological or speech pathology diagnosis or follow-up from higher education institutions, an investigation into this topic was decided upon at the university level.

Through this research, we examined how communication disorders and learning difficulties may affect the academic career of Moroccan students majoring in hard sciences. As a sample this study selected students enrolled in the biology and engineering schools – the Faculté des Sciences Ben Msik at Casablanca Morocco and the Engineering School in Mohammedia. This comprehensive sample was used to conduct a cross-sectional study to sort out the relationship between disorders, self-esteem and academic performance scales.

The questionnaire aimed to detect the number of students with both communication disorders and learning difficulties, and the impact of these factors on academic achievement, social integration and self-esteem. The aim was to answer the following research questions: does this disorder appears as an obstacle to academic success? What about the effect of a combination of various communication disorders and learning difficulties on academic courses?

2. Method

2.1. Participants

229 university students participated in the study including 66 boys and 163 girls with an age range of 18 to 20 years. The average age was 22 years above living in rural and urban areas of Casablanca and Mohammedia in Morocco and enrolled in a biology college and an engineering school.

Table1: Distribution by gender

| | Biology College | Engineering School | Age (mean) |
|--------|-----------------|--------------------|------------|
| Female | 106 | 57 | 18.84 |
| Male | 33 | 33 | 19.48 |
| Total | 139 | 90 | 19.02 |

Twenty-two age-matched students without psycho-communication disorders also completed the study.

2.2. Measures

The questionnaire consisted of sixteen sections, each containing at least 10 items. The first section dealt with the academic status of the student (university, discipline). The second theme asked about personal data (gender, age, siblings, and civil status). The final theme focused on health in 5 areas: general health, health disorders, disorder impact, health practices and addictive behaviors. The analysis focuses on this final theme.

2.3. Procedure

The investigation was carried out in two phases. The first one was at the end of the semester in May 2012 with 96 respondents collected from the Biology College, and the second one on October 2012 with an extra 133 respondent from both the Biology College and the Engineering School. All students had the investigation objectives explained to them and signed a consent form. The questionnaire was anonymous and written in both Arabic and French.

2.4. Analysis

After collecting the data from the students of the Biology College and the Engineering School in the two phases (in May and October 2012), we used SPSS software for data processing and analysis. Our interest in this survey was focused on the impact of communication disorders and learning difficulties on self-confidence, relations with others and academic achievement.

3. Communication disorders

3.1. Hearing disorders

During this survey, students were asked about the presence of hearing disorder (question 3.2.1). The results indicate that more than one in four students (27.5%) is affected by a hearing disorder without significant variation in terms of gender ($\chi^2 = 0.56, p = .46$). Among the students affected by this type of disorder, 38% report having serious problems, 27% were worried about such problems and 35% were not worried. There was no significant variation in terms of gender ($\chi^2=4,05 ; p=.13$). The survey indicates that almost one student in 5 (17.9%) are affected by serious or worrying hearing disorders.

Table 2. Students with hearing disorders

| Do you have a hearing disorder? | Female | Male |
|---------------------------------|--------|-------|
| No | 84.7% | 75.4% |
| Yes | 15.3% | 24.6% |

Table 3. Students with hearing disorders in terms of gender and severity

| Hearing disorders | Female | Male |
|-------------------|--------|-------|
| No problem | 73.9% | 68.9% |
| Not worrying | 10.8% | 06.6% |
| Worrying | 05.1% | 13.1% |
| Serious problem | 10,2% | 11,5% |

3.2. Voice Disorders

During this survey, students were asked about the presence of voice disorders (question 3.2.2). Indeed, a quarter of students are affected by a disorder related to the voice, with male students suffering to a greater extent than female students (35% and 20.7 % respectively; $\chi^2=4.65 ; p=.031$). However the severity of the disorder doesn't vary by gender ($\chi^2=0.29; p=.866$).

Among the students affected by this type of disorder, just over one third (37.25%) report having serious problems or worrying problems, and only one quarter (25.5%) indicate that the problem is not worrying.

Table 4. Students with voice disorders

| Do you have a voice disorder? | Female | Male |
|-------------------------------|--------|-------|
| No | 79.3% | 65.0% |
| Yes | 20.7% | 35.0% |

Table 5. Students with voice disorder in terms of gender and severity

| Voice disorders | Female | Male |
|-----------------|--------|------|
|-----------------|--------|------|

| | | |
|-----------------|-------|-------|
| No problem | 79.3% | 65.0% |
| Not worrying | 04.8% | 10.0% |
| Worrying | 07.6% | 13.3% |
| Serious problem | 08.3% | 11.7% |

3.3. Learning difficulties

3.3.1. Stuttering

Among the questions in the survey, students were asked about stuttering (question 3.2.3). Indeed, 17.3% of the students interviewed are affected by a form of stuttering. However the severity of the stuttering doesn't vary in terms of gender ($\chi^2=1.81$; $p=.403$). Among the students affected by stuttering, 41% report having serious problems, 32% indicates worrying problems and only a quarter (26.5 %) affirms that the problem is not worrying.

Table 6. Results of stuttering

| Stuttering | Female | Male |
|------------|--------|-------|
| No | 84.9% | 77.6% |
| Yes | 15.1% | 22.4% |

Table 7. Stuttering in terms of gender and severity

| Stuttering | Female | Male |
|-----------------|--------|-------|
| No Problem | 84.9% | 77.6% |
| Not worrying | 05.0% | 03.4% |
| Worrying | 05.0% | 06.9% |
| Serious problem | 05.0% | 12.1% |

4. Dyslexia

The survey asked students about dyslexia (question 3.2.4). To our surprise, 10.08% of students report being dyslexic without significant variation in terms of gender ($\chi^2=1.78$; $p=.181$). This finding is very important if we make an international comparison of the prevalence of dyslexia for educated populations in primary schools. These indicate rates ranging from 3% to 12% depending on the country, the transparency of the orthography of language and the degree of strictness in terms of the definition of dyslexia adopted (Inserm, 2007).

Dyslexic disorders appear to affect more male students than female students, among the students affected by dyslexia affected, 26, 3% report having serious or worrying problems, and only 7.5 % affirm that the problem is not worrying.

Table 8. Results relating to Dyslexia

| Dyslexia | Female | Male |
|----------|--------|-------|
| No | 92.7% | 81.0% |
| Yes | 07.3% | 19.0% |

Table 9. Dyslexia in terms of gender and severity

| Dyslexia | Female | Male |
|----------|--------|------|
|----------|--------|------|

| | | |
|-----------------|-------|-------|
| No problem | 86.9% | 79.3% |
| Not worrying | 05.8% | 01.7% |
| Worrying | 01.5% | 06.9% |
| Serious problem | 05.8% | 12.1% |

5. Result and number of medical consultations of students during the last six months of the investigation.

The results of this survey indicate that 39% of students consulted a dentist in the last six months. 28% consulted a specialist doctor and 24% a general practitioner. These results conform with the good level of health reported by the majority of students. Less than 4% of students reported having consulted a psychologist, psychiatrist or psychoanalyst. This low rate may be the indicator of good mental health of students, but it could also be indicative difficulty in terms of difficulties with regard to access to health professionals.

Indeed, a study conducted in the Rhône-Alpes region of France among science students in 2009, showed a consultation rate of 7% for an average health state of 4.9 (on a scale of 0 to 6 - identical to that of the present study). Similarly, in the Rhône-Alpes study, 70% of the science students had consulted a general practitioner in the previous six months, which was almost triple what was noted in this study, while with regard to specialist doctors and dentists, consultation rates are close to those of the Rhône-Alpes study (44% and 33% respectively).

if While these differences can be partly explained by differences in the structure of the respective national health systems, it also reveals some limitations in terms of access to general medical and psychiatric care. While this is sometimes seen as less essential, they play an important role in the prevention and detection of serious pathologies that may prove to be serious if not treated early.

Table 10. Medical consultations of students in the six months prior to the investigation

| General doctor | | Specialist doctor | | Psychologist, psychiatrist or psychoanalyst | | Dentist | |
|----------------|-------|-------------------|-------|---------------------------------------------|-------|---------|-------|
| No | Yes | No | Yes | No | Yes | No | Yes |
| 148 | 48 | 139 | 55 | 175 | 7 | 115 | 75 |
| 75.5% | 24.9% | 71.6% | 28.4% | 96.2% | 03.8% | 60.5% | 39.5% |

One of the striking results is that over the previous six months, half of the students didn't consult any health professional.

Note that the behaviour of male and female students, in terms of the number of visits, is quite similar.

Table 11. Total medical consultations by students by gender

| Number of visits | Female | Male |
|----------------------------|--------|-------|
| No consultation | 45.8% | 50.0% |
| One health professional | 33.1% | 26.8% |
| Two health professionals | 16.1% | 14.3% |
| Three health professionals | 04.2% | 05.4% |
| Four health professionals | 00.8% | 03.6% |

6. Accumulation of disorders in terms of communication and learning difficulties

A closer analysis allows interest for an intersection of the association of disorders in terms of communication and learning difficulties among students. Indeed, if each of these disorders can affect a student without it being associated with other disorders, it seems possible that an associations exists between communication disorders and learning difficulties for some students. Without being able to rule on the causation that may be involved in these associations, it still seems relevant to look for the existence and prevalence of these associations.

Table 12. Students affect by communication disorders and learning difficulties

| | Hearing | Voice | Stuttering | Dyslexia |
|------------|---------|-------|------------|----------|
| Hearing | - | 37 | 24 | 21 |
| Voice | 37 | - | 27 | 24 |
| Stuttering | 24 | 27 | - | 18 |
| Dyslexia | 21 | 24 | 18 | - |

As shown in the table above, there are high levels of association between communication disorders and learning. These rates are particularly high for stuttering and dyslexia since a student who stutters also states that they suffer from voice problems in 82% of cases and from hearing problems in 73% of cases. Similarly, dyslexic students say they are affected by voice problems in 82% of cases, hearing in 72% of cases and stuttering in 69% of cases. Hearing disorders, although strongly linked to other communication disorders, however, seem less consistently associated with other disorders. Thus, among the students who report having hearing problems, only 50% also say that they stutter and 44% report being dyslexic. However, 68% show an association between hearing problems and voice problems.

7. Impact of communication disorders and learning difficulties on self-confidence

The question "Does the problem impact on your self-confidence?" asked students to evaluate the impact of communication disorders and learning difficulties on their self-confidence on a scale from 0 to 6 (0 being not at all impacted and 6 being very strongly impacted). 59.5% of students reported that their level of self-confidence is highly influenced (values of between 4 and 6) by their communication disorders and learning difficulties, while 25.31% said that their troubles have little or no impact (values of between 0 and 2) on their self-confidence.

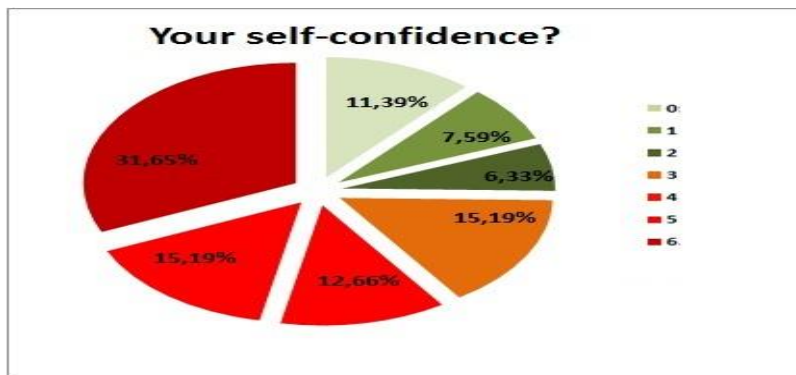


Figure 1: Impact of problems on self-confidence

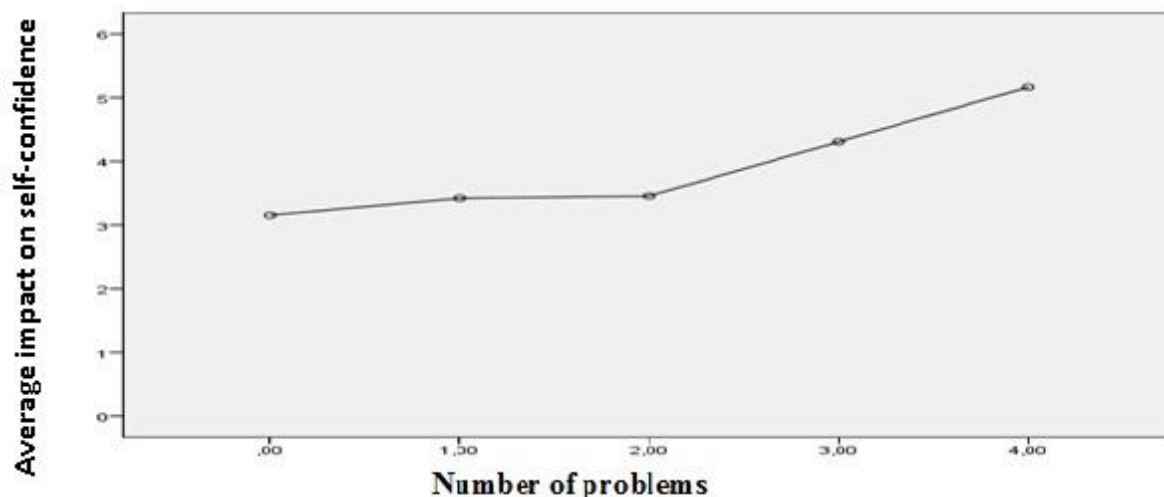


Figure 2: Impact of the number of communication disorders and learning difficulties on self-confidence

The results indicate a relationship between the number of problems and the impact on self-confidence and a negative impact with regard to communication disorders and learning difficulties on self-confidence.

It seems that students have a lower self-perception when they face a combination of communication disorders and learning difficulties. However students affected by one problem evaluate the impact on their self-confidence as being 3 (on a scale of 0-6), while students affected by 3 or 4 problems evaluate the impact at more than 4.

8. Impact of communication disorders and learning difficulties on academic achievement

The answer to the question “Is this problem an obstacle to your academic achievement?” aims to determine the influence of communication disorders and learning difficulties on success with regard to the students’ academic career.

The results indicate that 60.87% of the students reported that communication disorders and learning difficulties constitute an obstacle to academic achievement. More than half report that the problem constitutes an obstacle to success in terms of their academic career.

28 students have a combination of communication disorders and learning difficulties. Students affected by 3 or 4 problems related to communication disorders and learning difficulties report to a greater extent than other students that the problem constitute an obstacle to their academic career.

When students were affected by a combination of communication disorders and learning difficulties, if the problem was dyslexia or stuttering, students think that they face more difficulties to success in terms of their academic career.

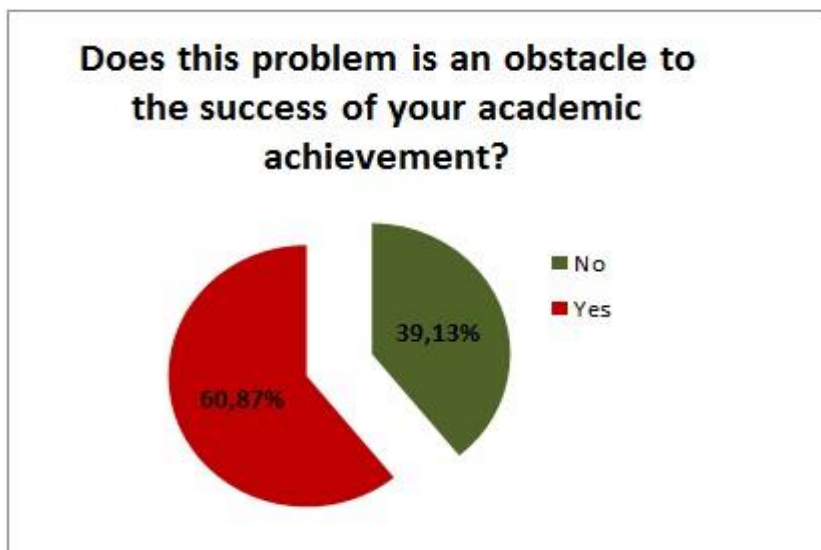


Figure 3: Is this problem an obstacle to your academic achievement?

9. Discussion

This survey has the goal of collecting data on the health status of students through an investigation focusing on communication disorders and learning difficulties, and the difficulties that these disorders could lead problems associated with more than the language aspects.

Based on this survey results, more than 25% of students are affected by one or more communication disorders and learning difficulties. There are minor disorders in about 25% of cases. However, in the remaining 75%, these disorders qualify as being worrying and serious. The responses obtained indicate that these disorders are associated with a lower self-esteem. The phenomenon of social rejection affects a minority of students, but the magnitude of such rejection is very worrying for this minority. It is most very important in an academic context, in that such difficulties are seen as important in terms of academic success. Such difficulties could be thought to lead to forms of school failure and dropout at the university level.

The results highlight the dangers of a combination of various communication disorders and learning difficulties in terms of all the academic phenomena, social aspects or self-perceptions mentioned above. If our results don't allow us to speak of a threshold effect, it is clear that if an isolated disorder can have small negative effects, the combination of both disorders and even more the combination of 3 or 4 disorders in terms of communication and learning difficulties can have extremely negative effects on academic achievement, social integration and self-esteem. However, different studies dealing with the university dropout phenomenon have shown that low school performance, poor social integration and low self-esteem are the principal factors leading to the abandonment of academic studies.

Our results also provide some indication of the differential effect of communication disorders and learning difficulties. For example, it appears that stuttering, when associated with other disorders, is an obstacle to social integration. These results also indicate that hearing problems, the most common form of disability, could play a role in the appearance or worsening of other communication disorders and the emergence of learning difficulties.

Although it is a hypothesis, it may be the case that early detection of hearing problems is essential. In addition, when there is such a problem, action in terms of immediate remediation could limit all communication problems and their harmful consequences.

10. Conclusion

The results of this survey indicate the dangers of a combination of communication disorders and learning difficulties on all academic phenomena. The combination of 3 or 4 problems has a negative effect on academic achievement and self-confidence. However, many studies on the dropout phenomenon at university indicate that a lower school performance and lower self-confidence were factors explaining this dropout (Chemers, Hu & Garcia, 2001; Dinther, Dochy & Segers, 2011; Vallerand, Fortier & Gay, 1997). Furthermore, studies in the Moroccan higher education context have shown that students entering higher education with communication disorders are quite common (Touri et al., 2013, 2014; Soubhi et al., 2014a, 2014b, 2014c, 2014d). This phenomenon could partly explain the high dropout rate observed in higher education in Morocco.

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