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Mobility Practice, What Solutions to Ensure the Safety of The Surroundings of Schools? Case Study: Tarek Ibn Ziad School, Guelma

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Abstract

The school is the primordial nucleus of society, inscribed in the city, in the neighbourhood. On this scale, taking into account road safety around schools and on home-school journeys is a priority. This problematic was applied to the primary school of "TAREK IBN ZIAD" in Guelma city that is located near the primary roads characterized by dense road traffic and mobility practice which cannot be marginalized. This work aims to improve a feeling of belonging and social security, and also, strengthening mitigation measures or setting up specific programs to improve security. To properly conduct this scientific research, an inventory (diagnosis) must be established around the school and its surroundings. Collection of data was based on: a direct observation, a school survey by questionnaire, a series of interviews involving all the actors concerned as sources of information. The results obtained confirm the marginalized situation of the school surroundings. The vast majority of the participants stressed the need to work in partnership with all stakeholders to find sustainable solutions to this recurring problem.

Keywords: Road traffic; school surroundings; mobility practice; security; actors concerned; home-school journeys.

1. Introduction

In a spirit of social, economic and environmental sustainability, scientific research on urban mobility is seeking to achieve new goals that aim to improve the lived reality of urban use and functioning. Motorized traffic continues to grow more and more. It has led to a negative spiral of problems. Mobility being a factor of personal fulfillment and strengthening of social cohesion (Tahar Baouni, Mohamed Bakour and Rafika Berchache, 2013) has become a source of insecurity for its users, both children and adults.

For families living in cities, the problems of daily mobility are of a different nature: they are largely associated with dangers of street life (Chombart de Lauwe, 1977; Hillman, 1993) and general urban form, which influences children's mobility and, in particular, their school displacement. As a result, many parents experience anxiety. This situation also generates accompanying practices, to go to the park with small children, to go to school or to extracurricular activities for older children (Vincent Kaufmann, Éric D. Widmer, 2005) to guarantee their safety. UNICEF in turn reminds us that one in three city dwellers is a child (Satterthwaite and Bartlett, 2002) and the interest in understanding the notion of childhood, the city-child relationship continues to grow (Marie-Soleil Cloutier and Juan Torres, 2010). In the same context, the consideration of road safety around schools and especially home-school routes is a priority, as children's well-being is now considered a decisive indicator (United Nations, 2006). The approaches generally used take a singular and descriptive look at school environment and home-school journey, where the child is seen as a very distinct actor, which has been the subject of much discussion by researchers and practitioners. Importance has been placed on a wide range of disciplines including health (Adelman et al., 2005; Pabayo et al., 2010; Smargiassi et al., 2009), mobility (Bachiri and Despré, 2008; Mcmillan, 2005), and social settings (Granié, 2004; Jutras, 2003; Moore and Young, 1978; Merve GÜROĞLU AĞDAŞ, 2020). Each of these disciplines addresses only one aspect of child mobility without a comprehensive view, which does not eradicate the problem related to vicinity of schools from its roots. This confirms that exploring the city through eyes of children is a very difficult task. Faced with this challenge, it is necessary to approach schoolchildren's mobility as an integrated system in a city, in a neighborhood, based on well-defined criteria and conditions.

The problem of dialectic of security and insecurity in the vicinity of schools and the route of schoolchildren (home / school) is universal and many developed countries are making it their hobbyhorse. However, in Algeria in general, and Guelma city in particular, the majority of schools are located near the main arteries characterized by a very dense road traffic that cannot be neglected. To properly address this issue, it is necessary or even fundamental to develop a charter - Schoolchildren's route: Home - School based on specific programs to improve safety conditions on School-Home journey.

What is a home-school journey?

We can consider the home-school journey of primary school pupils as a spatial experience, as a specific space-time that engages individual in a spatial practice, which consists of distances, places, limitations and crossings (Elsa Filâtre, 2020). It is therefore an experience that mobilizes many spatial skills. In the field of urban planning and development, child's place in the city is often associated with school mobility, mainly from the point of view of safety.

Given this logic related to child mobility and mobility practices, the question is: How to ensure safety around schools?

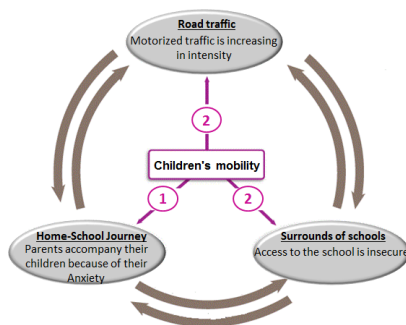


Figure 1. The vicious circle of child mobility (Developed by Author).

2. Objectives and Methodology of the Research Work

The objectives of this work are multiple, since it constitutes a step whose role is to inform and sensitize public actors (all bodies) to the various problems posed by the increased road traffic at primary school - Tarek Ibn Ziad - chosen in Guelma city, and then to strengthen the mitigation measures by implementing specific programs to improve road safety. And this, in order to increase the sense of enhancement of road safety and sustainable protection of pedestrians in general and pupils in particular.

In order to properly address the issues raised, an inventory (diagnosis) is necessary and indispensable around primary school and its surroundings to cover the subject completely and exhaustively. This information gathering is done as follows:

- Firstly, a detailed data collection based on direct observations in situ; and consultation of documents related to the subject.
- Secondly, a school survey elaborated in form of a basic survey questionnaire with pupils and their parents;
- Thirdly, semi-directed interviews with different actors (experts, stakeholders...) as sources of quantitative and qualitative information.

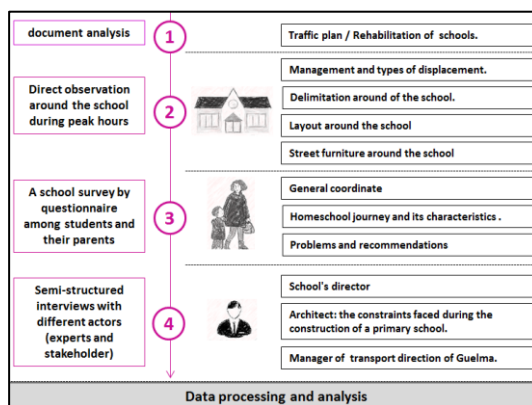


Figure 2. Scientific methodology (Developed by Author).

2.1. Characteristics of Survey Sample

We have conducted a questionnaire survey during one week at "Tarek Ibn Ziad" school with pupils and their parents on mobility practices around school. More specifically, we aimed to get a view on problems experienced by school population. Our objective is to select deficiencies in terms of outdoor design in order to improve and guarantee safety of users and our children in particular.

- The sample consists of 137 respondents (54.8% of pupils and parents).
- The questionnaire is provided with schematic illustrations to easily convey the ideas to pupils' minds.

2.2. Selection of Professional Actors

In order to reach a large range of parameters, it is necessary to include professional actors (elected officials, experts...) to know their points of view about the subject.

A series of semi-directed interviews were conducted with:

- A school director, to see his role in relation to our issue (school management, awareness actions, collaborative actions...)
- An architect who participated in the full tenders in terms of schools in order to select the constraints experienced during the realization of schools.
- A manager at transport direction of Guelma city.

3. Study Context

Our study was conducted in Guelma city (36 ° 27 '43 N; 7 ° 25 '33 E; 840 m altitude) located in northeastern Algeria. This work focused on "Tarek ibn Ziad" school because of its important geographical location near the main traffic arteries of the city of Guelma.

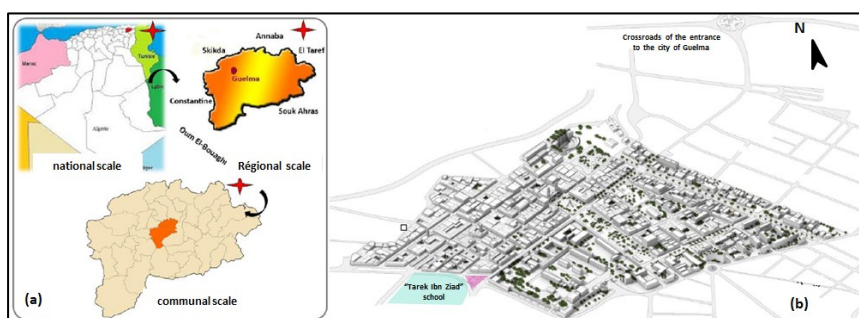


Figure 3. (a) Geographical location of Guelma city, (b) Case study: Tarek Ibn Ziad School (Developed by Author).

3.1. Traffic Plan and Crossroads Analysis

According to the synthesis of revised study of the new traffic plan of Guelma city and starting from the idea that the intersection (crossroads) which is generally assimilated to main bottlenecks of urban network. It is therefore the space of enormous potential conflicts between vehicles and vehicles/pedestrians and is therefore a privileged accident-prone place. For this reason, special attention was accorded to these intersections, which were selected and investigated with technical services of the Guelma transport direction.

A few meters away from the selected school, we find the cross roads "Bab Essouk" (Figure 4) which is characterized by:

- A huge motorized flow that exceeds 17,868 vehicles (by hours / by day),
- An unbalanced and unchannelled pedestrian flow on different branches of the intersection, instantly generating mixed conflicts (pedestrian-motorized flow):
 - 379 pedestrians crossing the 1st November axis for 928 pedestrians crossing Keblouti ben sheikh axis; (per hour / per day),
 - 437 pedestrians crossing Guehdour Tahar street for 693 pedestrians crossing the street leading to Champ Manoeuvre neighborhood ; (by hours / by day),
- Anarchic parking inside the intersection (presence of a cafeteria);
- Inexistence of no parking signs;
- Inexistence of crosswalk.
- Uneven site resulting in reduced visibility of access to intersection.

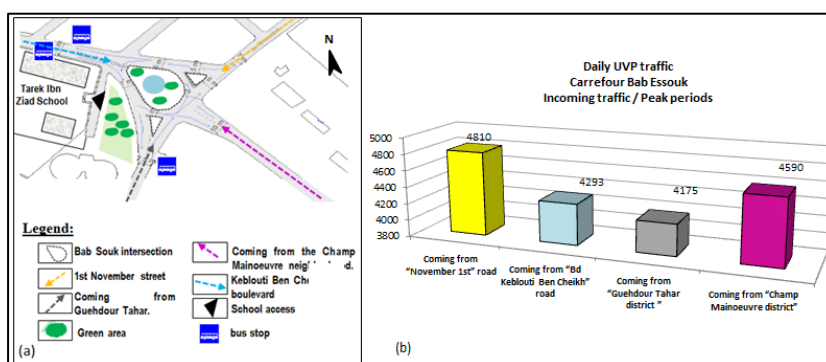


Figure 4. (a) Overview plan, (b) Daily traffic around Tarek Ibn Ziad school's (Developed by Author).

Therefore, it is recommended to improve existing condition to ensure safety of passengers, including children. The issue of road safety in the surroundings of schools requires that all infrastructures and educational establishments be the subject of an expertise in space planning to ensure the optimal safety of school population in the vicinity of primary establishments located in various respective areas of Guelma city (Transport direction of GUELMA, 2015).

3.2. The Primary School "Tarek Ibn Ziad" of Guelma: During the Launch of Rehabilitation Operation

Primary schools in Guelma constitute 69% of educational establishments with a number of students reaching 58430, who often travel to and from school over short and long journeys which unfortunately are still not sufficiently safe.

Table1. Distribution of scholar establishments by type in Guelma city.

Scholar establishments type's	Number
Primary Schools	285 (69%)
Colleges	88 (21, 3%)
Secondary schools	40 (9, 7%)

In 2019, the local elected officials have launched a vast program to rehabilitate a total of 250 primary schools in the region of Guelma. These renovation actions include important and varied works according to the needs of each school, which will improve the conditions of schooling for pupils. The rehabilitation project of primary school "Tarek Ibn Ziad" located in city center consists of realization of sanitary facilities, a water tank, a playground with a synthetic lawn, development of the courtyard, in addition to the work of electrification and the resumption of interior and exterior painting, as well as the renovation of doors and windows (Algeria360°). Unfortunately, this rehabilitation has only covered the interior and exterior architectural aspects. In this regard, the exterior arrangements guaranteeing safety of school population were not taken into consideration. The result is that the majority of schools built in Guelma city in general and "Tarek Ibn Ziad" school in particular, are characterized by huge deficiencies in terms of security measures, especially during peak hours (entrance / exit).



Figure 5. "Tarek Ibn Ziad" school after rehabilitation.

4. Results and Discussion

The majority of pupils (58%) live in proximity to the urban primary school "Tarek Ibn Ziad" as it is located in the heart of residential neighborhoods. 59% of pupils spend 5 to 10 minutes going from / to school. Despite the good location of this establishment, 86.1% of pupils are accompanied by a member of their family, which confirms the alarming situation of road insecurity in the vicinity of school or the home-school journey in general.

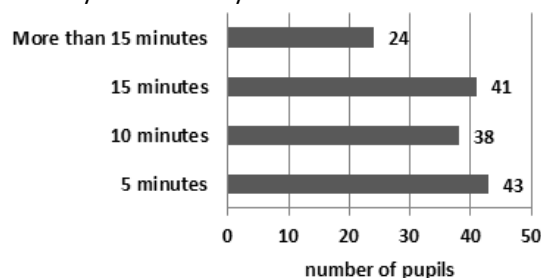


Figure 6. Time spent for home-school journey.

In this regard and starting from an urban scale, primary school concerned by this study is located on the main arteries of Guelma city (Bab Essouk crossroads) characterized by a very dense traffic which cannot be marginalized. The result shows that 71.5% of the parents are anxious about road insecurity. 40.8% of them participate in the densification of motorized mobility because they accompany their children by car. The series of problems is linked to form a vicious circle from which it is difficult to escape.



Figure 7. Pupils in front of danger (Taken by author).

According to the traffic plan of Guelma city, the majority of urban transport buses and university transport cross by the sides of the school. This large number of buses that represent a permanent danger for children is the black spot that hurts the school world. Also, 78.8% of parents mention that the current routes and the location of bus stops around the schools do not correspond with interest of pupils and their safety.

In terms of urban planning, 60% of parents with vehicles believe that they have difficulties accompanying their child (ren) to school by car, as follows:

- 57.6% confirm the non-existence of a parking lot,
- 68.6% have difficulties related to the existing flow around the school,
- 78.8% indicate that there is not enough space near the school for parking.
- 86.1% of pupils are accompanied by a family member, which confirms that there is no cooperation between families to limit children's mobility to school.
- 40.1% indicate that the road signs are absent and even obsolete (One crosswalk that is poorly maintained).

The above-mentioned results indicate that there is a great deficiency in terms of outdoor installations that guarantee safety of children. This problem has attracted the attention of school population because of its role in raising awareness and selecting the problems experienced at the same time. From a different angle, the actors involved, including school director, testified that insertion of collaborative solutions in an environment that is not sufficiently trained and aware to accept the concept of stakeholder participation is a difficult challenge. Especially, after the failure of the parents' association who are not aware enough to be involved in collaborative activities. And if we touched the problem at its roots, during school realization, an architect testified that there is no school construction guide in Algeria on a part. On the other part, the margin of creativity is trapped by fixed and obsolete specifications that do not take into consideration safety and comfort of users and schoolchildren after the reception of project. In the end, the final result is that educational establishments conceived and realized in a poorly arranged and oppressive urban environment only aggravates the situation and becomes unquestionably a source of obvious and certain insecurity for many pupils and parents.

5. Conclusion

The problem of road safety in the surroundings of schools has become an essential priority in order to have a sustainable and equitable urban environment that takes into consideration the child as a central and inseparable link of society.

This article proposes a methodological approach applied to the school "Tarek Ibn Ziad" in Guelma aiming to inform and raise awareness of public actors (all bodies) to the various problems posed by the increased traffic around the school chosen, then to strengthen mitigation measures by implementing specific programs to improve road safety. The scientific methodology was carried out in three steps:

- First, a fine-grained data collection based on direct observations in situ and consultation of documents related to the subject.
- Secondly, a school survey based on a basic questionnaire with pupils and their parents
- Thirdly, semi-directed interviews with different actors (experts, officials and elected representatives...) being sources of quantitative and qualitative information.

The results obtained confirm the marginalized situation of school surroundings, the respondents indicate that it is necessary to change the lived reality through external planning guaranteeing safety of schoolchildren to cover the great existing deficiencies. In the same perspective, it would be important to establish a larger collaborative work, so that each environment can express its difficulties and appropriate measures can be deployed in order to solve the different problems that affect primary schools in particular and doubtfully, educational institutions in general.

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Conflict of Interests

The authors declare no conflict of interest.

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