

The determining factors in school contexts which lead to active lifestyles among young people with disabilities

Hélène Carbonneau¹, Romain Roult^{1*}, Marie-Michèle Duquette², & Émilie Belley-Ranger²

¹*Department of Leisure, Culture, and Tourism Studies, Université du Québec à Trois-Rivières, Trois-Rivières, Québec, Canada*

²*Department of Psychology, Université du Québec à Trois-Rivières, Trois-Rivières, Québec, Canada*

Abstract

A high percentage of young people have a sedentary lifestyle. However the young people with disabilities tend to be even less active. Schools are expected to play an important role in supporting an active lifestyle. It is crucial to better understand the determining factors which lead young people with disabilities to adopt active lifestyles. A study has been performed based on 15 case studies in different schools with a mixed method. Four principal categories of factors influencing an active lifestyle for young people with disabilities emerged from this study: adapted environment and universal accessibility, help and support, social interactions, and the quality of the experience. This study focuses on the measures to be put in place to support an inclusive experience in the field of sport and physical activity among young people with disabilities.

Key words: physical activity; integration; inclusion; health promotion; schools

Introduction

Physical inactivity among children and adolescents severely affects numerous Western countries. The World Health Organization (WHO) has identified obesity as one of the most serious public health challenges and a serious issue which could potentially become a financial burden for health care systems of developed countries (WHO, 2014). These statements are rather alarming for younger generations, among which the rate of inactivity is disturbingly high. This is especially worrisome when examining the situation of young people with disabilities. In this context, schools are, by all means, expected to

play a very significant role in the struggle against inactivity. The purpose of this study was to gain a better understanding of the determining factors in school contexts which lead to active lifestyles among young people with disabilities. More specifically, it focused on the influence of social and physical environment in this perspective.

The inactivity among youth is a widely known public health issue (Lee, Rodriguez & Hong, 2011). According to Active Healthy Kids Canada (2012), only 7% of Canada's youth get at least 60 minutes of physical activity per day. Studies have shown the statistics to be even lower when considering only those with disabilities (Badia et al., 2013; Shikako-Thomas et al., 2009; Shikako-Thomas et al., 2008). Actually, young people with disabilities (physical, intellectual or developmental)

face much more challenges to adopt a healthy lifestyle (Anderson & Heyne, 2010). They are two to three times more likely to develop weight problems than their peers without disabilities. The proportion of young people with disabilities who are limited in their activities increases according to the severity of their disability. Indeed, according to Institut de la Statistique du Qu  bec (2006), 17% of young people with a minor disability are limited in their choice of activity, 40% are limited when the disability is considered moderate, whereas 60% are limited when the disability is considered severe or very severe. Many constraints, either social or environmental, explain this low participation rate in physical activity (Junker & Carlberg, 2011; Buffart et al., 2009; Institut de la Statistique du Qu  bec, 2006).

School is a privileged place for the promotion of healthy life choices among young people with disabilities. Its role is to provide a properly adapted environment as well as staff with the will to motivate young people with disabilities into overcoming their limitations and engaging in physical activity (Brittain, 2004). Physical education classes may be a time for students to learn and fraternize (Bourgoin, 2007). The mobilization of children's potential along with positive support from their surroundings (family, school, and community) can significantly downplay the disability creation process as well as encourage social participation (Fougeyrollas, 2010). Some authors have identified various factors which facilitate the inclusion of a person with a disability into sports and physical activities.

Policies and regulations play a significant role in the practice of sports and physical activities as they are linked to universal accessibility. Indeed, the implementation of public policies is the basis of it. On top of that, these policies have the power to strengthen universal accessibility (Hassan et al., 2012). As for legal facilitators, they are crucial for the social acceptance and inclusion of people living with a disability (Lizotte & Fougeyrollas, 1997). Nevertheless, sport-oriented educational programs adapted to those with disabilities are a gateway to social inclusion (Anderson & Heyne, 2010). Some others add

that the combination of these programs, along with the valorization of the development of mental and physical capacities, are the first steps towards the adoption of a healthy lifestyle. In this regard, encouraging autonomy and individual decision-making helps maintain the participation in sports and physical activities (Rimmer et al., 2004). Moreover, pleasure and enjoyment are also factors that increase participation in sports and physical activities (Howie et al., 2012; Malette, 2006).

Beyond policies and regulations, the influence of the social environment on the practice of sports and physical activities should be emphasized. This support comes from teachers, rehabilitation staff, family, friends, and the group to which the person belongs. The support from educative and rehabilitation staff plays a key role in the practice of sports and physical activity, especially when these professionals demonstrate a will to understand the disability, to adapt the activities accordingly, and to offer moral support (Junker & Carlberg, 2011; Saebu, 2010; Rimmer et al., 2004). However, some authors point out that this individualized attention is strengthened by the support from family and friends (Bodde & Seo, 2009). In the light of these studies, it is essential to consider and promote friends as well as family relationships and to encourage group belongingness in order to fully support the practice of sports and physical activities. That being said, there is still a lot of work to be done. Since the population with disabilities is very heterogeneous, it remains difficult to determine factors which could ease and facilitate their integration into sports and physical activities. A barrier or a facilitator might be mutual to two people with different limitations but might not have the same level of importance or significance to each of them (Bodde & Seo, 2009). The context in which a person finds themselves interferes with this process.

It is, therefore, important to grasp the determining factors which lead to healthy lifestyles among young people with disabilities. This is crucial if we want to apply the appropriate measures in order to encourage these people to lead healthy and active lives. A study was performed to identify the factors within school

environments in terms of barriers and facilitators that lead to the adoption of healthy and active lives among young people with disabilities.

Theoretical framework

This study took into account the Human Development Model – Disability Creation Process (HDMDCP) (Fougeyrollas, 2010). This model states that social participation is not defined only by personal factors such as capacities and limitations but also by environmental factors. In this model, personal factors include capacities, disability and person's characteristics (age, gender, personality). Environmental factors consider three levels of environment: micro (families, close friends, etc.), macro (school, leisure center, etc.), and meso (policies, programs, etc.).

The HDM-DCP considers that it is the interactions between personal and environmental factors that will determine the quality of the social participation (such as sports and physical activities) of people with disabilities. This model clearly shows that in order to understand the factors that influence the participation in physical activities, we must consider to which extent the environment is suitable or not for the emergence of such practices. This study aimed at deepening the understanding of the elements linked to the micro and macro environment within this dynamic. So, this study sought to document how the relations between young people with a disability, other children, and accompanying professionals develop in the context of sports and physical activities at school. Since pleasure is a determining factor in the adoption of a behavior, it was important to consider relations not only in terms of quantity, but also in terms of quality in order to better understand the experience lived by young people with a disability. In addition, it was important to observe the interaction between the various protagonists within the school's physical environment. It meant to analyze how the different measures taken (support service for exceptional students, programs, etc.) influence the practice of physical activity and to know which values are promoted at school.

Methods

Study design

Case studies have been conducted in divers regions of Québec in order to cover the matter in different geographical settings. Indeed, case studies are suitable for exploratory or poorly documented studies (Roy, 2010). As mentioned by Yin (2009), the case study is popular when studying organizations. In this study, many school organizations (elementary schools, high schools, specialized schools) have been considered in order to cover the topic more broadly.

Two main sources of information have been used to perform the case studies: semi-directed interviews as well as field observations. Such an approach is appropriate for the case study research design (Roy, 2010; Yin, 2009), as it allows for a triangulation of data, thus filling gaps in the method and reducing biases.

Participants

In total, 15 case studies were conducted in 10 different regions of Québec. The schools in each regions have been selected through purposeful sampling. Each case had specific characteristics: grade level, institution type, and geographical area. That variability among the cases allowed to draw comparisons between the different characteristics (Roy, 2010). Three types of institutions have been visited: regular elementary schools ($n = 5$), regular high schools ($n = 6$), and specialized institutions which enroll students with disabilities only ($n = 4$). These schools were chosen in four geographical areas and according to precise characteristics: rural schools with few or no sports programs and activities ($n = 2$), rural schools with a varied selection of sports programs and activities ($n = 4$), schools located in urban territory with sports and activities offered within proximity ($n = 5$), and finally, schools located in outer urban regions within proximity of urban centers ($n = 3$).

Forty-seven young students were observed during gym class for a total of 267 periods of about 10

minutes (each student was observed for at least 4 periods of 10 minutes). In addition, 52 open-ended interviews were conducted with young people with disabilities (n =10), parents of a child with disabilities (n =8), school principals (at least one in each school), and practitioners (at least one rehabilitation staff or physical educators in each school). Table 1 provides more details on the participants studied.

Evaluation tools

The addition of semi-directed interviews to the quantitative data from the observation grids has allowed to deepen the knowledge.

Semi-directed interviews

Individual semi-directed interviews were conducted

with the principals, physical educators or rehabilitation staff, parents, and students with disabilities over 14 years old. These interviews lasted between 30 and 90 minutes depending on the interviewee. Nine prominent topics were addressed during the interviews: natural and man-made environments, equipment, presence of accompanying professionals, economic aspects, emotional and psychological aspects, information, programs, sports and physical activities participation and adoption of a healthy lifestyle. These topics derive from the theoretical framework and the literature review. In order to adapt to the type of person interviewed, four different interview guides were elaborated. The interview guide for students was shorter and focuses on their experience within practicing sports and physical activities and their perception of their social environment. It is however important to note that subjects living with a more severe functional limitations were helped by a

Table 1. Characteristics of participants

School types	Regular elementary schools		5
	Regular high schools		6
	Specialized elementary schools		1
	Specialized elementary and high schools		3
Location and characteristics of the schools	Rural schools with a varied selection of sports programs and activities		2
	Rural schools with few or no sports programs and activities		4
	Schools located in urban territory with sports and activities within proximity		5
	Schools located in outer urban regions within proximity of urban centers		3
Participants interviewed	School principals		16
	Accompanying professionals		18
	Young people with disabilities		10
	Parents of children with disabilities		8
Young people with disabilities	Gender	Boys	27
		Girls	20
	Type of disability	Intellectual disability	9
		Physical disability	11
		Autism spectrum disorder	10
		Language disability	6
		Sensory impairment	4
		Down syndrome	1
		Others	7
		Age of participants	4 - 7 years old
8 - 11 years old	17		
12 - 17 years old	16		
18 - 21 years old	7		

parent or a guardian. The parents or the guardians could help the interviewer when the questions were not understood by the interviewee. The interviews were registered and transcribed.

Field observations

Observation is the other evaluation tool. Observation grids were used to document the impact of the environment (physical as well as social (friends, peers, etc.)) in which the young people with disabilities have evolved. Observation has been divided into three different methodical grids.

Adapted Soplay grid

The first grid focuses on events that took place during physical education classes. It is divided into 13 variables and is based on the SOPLAY (System for Observing play and Leisure Activity in Youth) observation tool (McKenzie et al., 2000), which observes relationships and dynamics between kids. SOPLAY “is based on momentary time sampling techniques in which systematic and periodic scans of individuals and contextual factors within pre-determined target areas are made.” (McKenzie, 2006 : 2). This grid has been adapted in order to observe relationships between young people with disabilities and the other students. Variables concerning the quality level of the experience were developed according to Csikszentmihalyi’s theory of “Flow” (Csikszentmihalyi, 2006). It takes into account how the proposed activities allow a balance between challenge and potential. All these variables were evaluated according to specific indicators using the Likert scale. Table 2 provides details on the indicators and scales used to code these variables.

This grid has been subject to two pretests that helped ensure that the observers involved in the study had the same understanding of the grid and that their mode of codification was equivalent.

This observation tool has been filled every ten minutes for an hour-long period of physical education. Questions were asked to the physical education teachers to

understand their experience teaching to youth with disabilities, and to evaluate how the observational period would compare to a “normal day” in terms of the students’ behavior. Comments from the observers have also been added to the observation tool.

General accessibility evaluation grid

The second grid, which has been elaborated by the research team, draws inspiration from existing tools. It is divided into four sections: observation of accessibility quality, layout of physical activity areas, locker rooms, and available material. This grid, qualified as a non-repeated observational grid, has been completed once for every school visited. It was used in order to evaluate meso environment as the physical opportunities in the school. It was based and applied via static field surveys (accessibility and planning of practice spaces, types of material put into disposition, etc.) and not through dynamic observations as for the grid number 1 presented earlier.

Physical accessibility grid

The third one is a field statement grid filled out once for every school. Its purpose was to verify if the norms created and established by the Guide pratique de l’accessibilité universelle of Québec were respected and properly put in place. This particularly focuses on architecture (access ramps, main entrances to observation areas, interior layout of physical activity practice areas, layout of locker rooms, lobbies and corridors, restrooms, signs, mechanical transportation devices (elevators and aerial platforms), handrails and guards, interior and exterior stair wells, exterior circulation corridors, street crossings, paths, and landscape design of outdoor areas for physical activity). Furthermore, observers added comments on what they had perceived.

Analysis

The transcripts were analysed using the analytical questioning method (Paillé & Mucchielli, 2003). This approach

Table 2. Repeated grid variables and indicators

Variables	Indicators
1) Practice area	Indoor Outdoor Locker rooms
2) Noise	Very noisy Noisy Quiet
3) Instructorship	Active coaching with a student who pays attention Active coaching with a distracted student Presence of an accompanying person only No coaching
4) Attitude of the accompanying person	Positive Negative Neutral Distant
5) Efforts in integrating the students	Very significant Significant Medium Low Does not apply
6) Student's practice dynamic	Active practice in group Passive practice in group
7) Group dynamic towards the student	Ongoing support Casual support Distant Intimidation
8) Individual dynamic	Very active Active Passive Motionless
9) Level of enjoyment expressed	Intense pleasure Moderate pleasure Indifference Displeasure
10) Involvement of other students	Relationship of equals Helper/helped relationship Passive participation Set back
11) Challenge-potential balance	Optimal experience (flow) Situation of boredom Situation of failure
12) Group or individual activity	Group activity Individual activity
13) Activity structure	Unsupervised Organized Competitive

involves a systematic process of collecting, regrouping and examining the themes in the verbatim transcription. Each transcript was analyzed line by line independently by two researchers for each category of participant (child, parent, principal, and accompanying professional). Then codes from each pair of researchers were merged to construct common list of codes and themes. This approach has allowed to minimize the biases linked to the researcher (Lincoln & Guba, 1985). These codes and themes were then compared and contrast through re-readings of each transcript. One of the researchers analyzed all the interviews in order to get a broader perspective of the results. NVivo 9 software was used to process the data obtained through the interviews.

SPSS Software (ISM SPSS Statistic 20 version) was used for the quantitative data from the three observation grids in order to process and analyze each case study and discover trends and tendencies. Descriptive and inferential analyses (Chi-square's and Fisher's tests) were completed. A mixed analysis was then performed in order to put the qualitative data from the interviews with relation to the data from the field statements.

Ethical statement

All subjects gave their informed consent for inclusion before they participated in the study. The study was conducted in accordance with the Declaration of Helsinki, and the protocol was approved by the Ethics Committee of Université du Québec à Trois-Rivières (CER-12-178-16.14).

Results

The analysis of qualitative and quantitative data has allowed to identify certain determining factors that promote and encourage an active lifestyle within the school setting. Actually, four main themes have emerged from the study: adapted environment and universal accessibility, help and support, social interactions, and

quality of the experience.

Adapted environment and universal accessibility

The first elements that emerged as determining factors are adapted environment and universal accessibility. Whereas the former directly relates to the physical environment, the latter considers the way activities are being led and animated.

The results from the interviews show how access to adapted infrastructure as well as the matter of transportation and costs associated with it, remain as limiting factors in many schools. Universal accessibility is difficult to achieve in many schools, making it especially difficult for students who use wheelchairs. A school principal expands on the topic: "In terms of adaptation [...] I do not believe the school property has been altered in any single way for physical education and sports [...] Very few things are done in order to effectively adapt our environment..." (Principal 1)¹

Quantitative data from accessibility grids showed some issues with accessibility across most of the school. Data analysis revealed that five spaces out of the 10 yield an average correspondence ratio inferior to 0.7 based on the scale of importance for visual impairment developed (SIMI).² Moreover, according to the scale of importance for motor impairment developed (SIVI), quantitative data revealed that nine spaces out of 12 have an average ratio of correspondence of less than 0.7 (see table 3).

In regular schools, accessibility mainly means adapting the activities and materials that are already present: "[...] If we don't have it, we don't have it [...] in terms of adapted material [...] we mainly have standard basic material and we adapt the activity to those students." (Principal 8). Such an approach calls for teachers' creativity : "I would say people show great imagination when it comes to [...] adapting material to

¹ The interviews were in French and translated into English for the purpose of this paper.

² The SIMI and SIVI scales allowed to estimate the gap between the analyzed spaces and the standards in force when it comes to universal accessibility (Roult et al, 2014)

Table 3. *Level of accessibility observed*

Space	Global average SIMI	Global average SIVI
Gymnasium	0,89	0,91
Main entrance	0,64	Not applicable
Recreation area	0,86	0,88
Elevator	0,66	0,57
Ramp	0,59	Not applicable
Adapted washroom	0,64	0,76
Common washroom girls	0,54	0,7
Common washroom boys	0,64	0,67
Locker room girls	0,57	0,66
Locker room boys	0,63	0,25
Circulation School-Park	0,8	0,74
Park	0,5	0,2

[...] students with disabilities” (Principal 15). Talking about his experience while playing soccer, a young person with disabilities said: “We take a big ball to play soccer. An exercise ball [...] because a small ball goes under my wheelchair” (Student 6). He added: “It’s fun to be active.”

It can, therefore, be said that the issue of space development and accessibility is often dealt with by adapting the way of doing things. Most prominently, planning physical education classes by setting up workshops and by pairing participants appears to be an efficient way of integrating students with disabilities and increasing their participation level. On top of that, observations during physical education classes have shown that subgroups or small groups also increase participation. Indeed, participation is greater when the groups are made up of five individuals or less (47.3%) in comparison with teams of six to 10 individuals (39%).

Furthermore, interviews revealed that specialized material is often scarce in regular schools, simply because of a lack of knowledge. Indeed, many teachers report not being aware of the adapted material that can be found on the market. “I’d say there are not a lot of resources in terms of adapted educative material and ideas” (Phys. Ed. Teacher 2).

Specialized schools, however, tend to have more

adapted equipment, which tends to encourage students with disabilities to lead active lives: “I think [...] the equipment we’ve made available [...] motivates children to push themselves physically [...]” (Principal 5). Nonetheless, even if such specialized schools are well-equipped and adapted to students with disabilities, some professionals still deplore some aspects of the infrastructure. More specifically, spaces dedicated to sports and physical activities are often limited, as stated in the following quote: “There are few things which are done effectively to facilitate or modify our environment [...] for sports and physical education” (Director 13).

Help and support offered

The nature of the help offered to young people with disabilities greatly affects the quality of their participation in sports and physical activities. Notably, the study revealed that signs of intense pleasure is observed for a total 67.7% of the observational periods, when a specific coaching was offered and youth with disabilities attentive, whereas the level of intense pleasure dropped to 26,9% when there was no specific coaching (See table 4 for more details). This difference is statistically significant (Fisher test, $p \leq 0.000$).

However, the form of coaching offered is not necessarily equivalent; it depends on the limitations that are being dealt with. For instance, it seems to be generally detached when in the presence of students with a language disability (see table 5).

The problem seems to be that physical educators are often not very informed of the limitations of their students with disabilities. The study has shown that only 50% of the physical educators interviewed in regular schools knew about the disabilities of their students. Most of the teachers interviewed mentioned that they are not taken into account when elaborating integration plans for these students. A physical educator explains: “[...] the special care counsellor and I often talk about the situation of young people in order to know what their needs are and how to adjust. I haven’t had access to the case files, I don’t even know what they look like” (Physical educator 10). This not only limits the possibility of integrating an objective of increased

physical activity within the action plans of students with disabilities, but it also limits their teachers’ ability to adapt the activities due to a lack of knowledge about their situations. Regardless of this, most of the physical educators interviewed have demonstrated commitment in trying to adapt their activities to the needs of students with a disability. They lack, however, the necessary resources and knowledge to adequately do so. Many have claimed that training opportunities and exchanges between physical educators from different school sectors are insufficient as shown in the following excerpt: “I miss seeing other teachers and having the opportunity to talk with them and share our successes” (Physical educator 13).

In specialized schools, students benefit from the presence of a special care counsellor even during periods of physical activity, whereas students receive no such support in regular schools. However, the lack of professional resources for physical education seriously limits

Table 4. Form of coaching and level of pleasure

	Intense pleasure (n= 93)		Moderate pleasure (n=100)		Indifferent (n=44)		Displeasure (n = 4)		p*
Specific coaching and youth with disabilities attentive (n=135)	63	67,7%	54	54 %	18	40,9%	0	0%	0,000
Specific coaching and youth with disabilities absent-minded (n=37)	4	4,3 %	14	14%	16	36,4%	3	8%	
Teacher present with no specific coaching (n=43)	25	26,9	19	19 %	8	18,1%	1	2,3 %	
No coaching (n=16)	1	1,6%	13	13%	2	4,6	0	0%	

*Test de Fishe

Table 5. Form of coaching and level of pleasure

	Specific coaching and youth with disabilities attentive		Specific coaching and youth with disabilities absent-minded		Teacher present with specific coaching		No coaching	
Autism	40	28,6 %	19	48,7 %	19	31,1 %	0	0 %
Intellectual disability	26	18,6 %	9	23,1%	10	16,4 %	1	6,3 %
Physical disability	41	29,3 %	5	12,8 %	12	19,7 %	0	0 %
Sensorial disability	5	3,6 %	2	5,1%	7	11,5 %	1	6,3 %
Language disability	4	2,9 %	2	5,1%	10	16,4 %	14	87,5 %
Others	24	17,1 %	2	5,2 %	3	4,9 %	0	0 %

the offer of such activities to young people with disabilities. Numerous specialized schools within this study find fault in the fact that they do not have physical education specialists within their team. A special care counsellor from a specialized school explains: “We don’t have a physical educator [...] it would be good to have at least one person who is trained in that field, someone who knows what stimulates these kids [...] We have lots of equipment [...] but very little knowledge.” So, simply having access to material is insufficient. Therefore, it is important to have at our disposal the professional resources in order to facilitate an optimal development of adapted services. Following this idea, many participants argue that the contribution of professionals within the health network widely facilitates the elaboration of appropriately adapted physical activities. Such collaboration makes it possible to offer activities that are well adapted to students with disabilities, as this physical educator explains: “We had already begun a training program with achievable exercises for the students. She (the physiotherapist) came back and students saw her individually to revise their training plans. That way, the exercises are adapted and safe.” (Physical educator 7)

Qualitative results show that parents of young people with disabilities play an important role in helping their children adopt a healthy lifestyle. Parents volunteering in schools can really make a difference when it comes to the implementation of activities, as this principal states: “We are very fortunate to have dedicated parents who help us at the school, because if it wasn’t for them, I don’t know if we’d be able to make it all happen.” (Principal 11)

Unimpaired students can also help their peers with disabilities by supporting them in their practice of physical activity. Many principals and accompanying professionals refer to successful experiences in which students were paired during physical education classes and extracurricular activities: “[...] an activity we call *vrai copain* (true friend) during which a regular grade

10 or 11 student accompanies a student with disabilities in different types of activities.” (Principal 15). Such approaches appear effective for the inclusion of students with disabilities.

Finally, acquiring a healthy lifestyle really takes on all its meaning when adapted physical activities become accessible outside of school. According to many participants in this study, municipal leisure services as well as community centers play a big part, as this quote shows:

The parents may want to do sports activities with their children on weekends, but this is not always easy to do. They try to join activities, but often, they are not open to them. At (name of the city), it’s interesting because the city not only offers activities for regular students [...] there are more and more activities available to young people with disabilities as well [...] but for the parents, having companionship and more support to participation would be very useful. (Principal 2)

Such an offer is crucial in order to promote an active lifestyle among young people with disabilities. However, when bearing in mind the economic hardships parents with children with disabilities often go through, such as taking care of their child while working full-time, it becomes obvious that this is not always possible.

Social interactions

Both quantitative and qualitative results reveal that the quality of interactions that students with disabilities have with others while taking part in physical activities, directly affects their level of interest and participation. Indeed, the more they are included into activities, the greater their feeling of belongingness will be, thus increasing their desire to actively participate. Here’s what a student had to say on this subject: “It’s really helpful when someone from the regular program actually offers someone like me, in the adaptation program, to join him in playing sports. Often, they’ll just say: ‘oh, but he always sits and does nothing during gym class.’ People who say that just really don’t know me at all!”

(Student 10).

Although there has been some improvement on this point, plenty of progress still needs to be made. Accompanying professionals deplore the fact that, even in this day and age, students with disabilities are often set aside and laughed at:

There are those students who understand them [the disabled] [...] and who have a positive attitude towards them. They stand up for them, valorize them, compliment them, etc. But on the other hand, you have those who don't really have any information about these kids' condition, so they intimidate them and make jokes of poor taste about them; they'll do anything to dissociate themselves. It's sort of black or white. On one side you have those who are friends with them and love them to death, and on the other, you have those who are in fact scared, so they tease them and generally try to avoid them. (Physical educator 10)

Such intricate relationships often lead to a marginalization of students with disabilities during physical activity. This is especially true in the case of team sports, in which the objective is competitive. A teacher says: “[...] generally, these students will be put aside during the practice of team sports” (Physical educator 12). The quantitative data have shown the group dynamic to be distant from the observed students with disabilities for 40.8% of the observational periods. Those who suffered the most from such seclusion were generally students with autism or with language impairments. Students seemed to have less understanding of non-visible limitations, therefore, less sympathy.

The attitude of regular students toward their peers

with disabilities also varied according to the type of school studied. For instance, the quality level of the social interactions varied significantly ($p = 0.000$) between regular elementary schools and regular high schools. Indeed, elementary school groups were observed as being distant towards the young people with disabilities for 53.1% of the observational periods, whereas this average dropped to 17.6% in high schools (see table 6). It is also notable that the quality of interactions was qualified as distant for only 11.6% of the observation time in rural schools with few or no sports programs and activities, whereas the variable for the three other subgroups averaged 55.8%.

The way an organizer directs a given activity can have an impact on this situation, as this example shows: “[...] but this is my job to be able to say [...] ‘Listen, I told you that all five of you have to get involved. But you just play with four and put one aside, you did not respect the instructions’” (Physical educator 12).

The involvement of those without disabilities contributes to integrating those who have one. Awareness-raising measures and information for the students without disabilities, as well as for their parents, would play a huge role within this context. A principal explains: “One of the chapters in my educational book is to accept; [...] it's about trying to live everybody's differences, whatever they may be.” (Principal 1). Activities where young people without disabilities live the experience of having a disability by taking part in adapted activities have proven to be interesting avenues for raising awareness.

Table 6. Comparison elementary and high schools

Variables	Elementary schools	High schools	Combined school	P*	
Dynamics of others students regarding the youth with disabilities	Regular support	6 (5,3 %)	15 (16,4 %)	4 (6,5 %)	0,000
	Occasional support	17 (14,9 %)	16 (17,6 %)	14 (22,6 %)	
	Distant	62 (54,4 %)	16 (17,6 %)	30 (48,4 %)	
	Intimidation	4 (3,5 %)	1 (1,1 %)	0 (0 %)	
	Not relevant	23 (20,2 %)	43 (47,3 %)	14 (22,6 %)	

It may be difficult for students with disabilities to develop bonds in regular schools, but that doesn't mean specialized schools do not face issues of their own. It is true that such specialized schools provide more adapted services, but the flip side is that students attending these schools are secluded from their neighborhood schools, making it difficult for them to make friends in their neighborhood. Regarding this, a parent indicates: "If he had friends in the neighborhood whom he liked and who practiced sports, he would probably get into them as well." (Parent). Families with children with disabilities often suffer from such isolation. Distinctive measures which would facilitate and encourage out-of-school relationships as well as help build connections between parents with children with disabilities would, therefore, be helpful. A principal from a specialized school expands: "These are often very isolated families. They come from all over and, it isn't like when you stay in your neighborhood and everyone from the area goes to the same school and knows each other [...] Families of our students don't usually mingle because they live too far from one another" (Principal 4). Therefore, supporting links among families would also be beneficial to these parents who experience severe isolation.

To summarize, the quality of social interactions greatly impacts the likeliness of young people with disabilities to adopt healthy lifestyles. Therefore, the quality level of the experience appears important to consider more broadly.

Quality level of the experience

The quality of the experience that young people with disabilities live when involved in an activity can be very decisive in helping them take steps towards healthier, more active lives. It includes the level of pleasure they experienced in the activity as well as the opportunity they had to reach an optimal experience that mobilized their potential. In fact, many of the interviewed subjects have gone on to claim that the significance this has for the students is, in fact, much broader than that.

They have [...] the possibility [...] of accomplishing something [...] the possibility of discovering new sensations [...] which they don't experience in their everyday life [...] I'll use the example of swimming [...] it's their favorite activity [...] and the reason is simple [...] it's a sensation that they haven't often experienced in their lives." (Principal 15)

A teacher also adds: "[...] it's like for any other young person. It's the feeling of belongingness, being active and having fun while doing it" (Physical educator 7). Talking about her daughter, a parent specifies: "[...] she's part of a team and participates in tournaments. It's all about having fun with the friends she makes [...] even though she has a limitation, she's still as actively involved as everyone else on the team." Physical education teachers describe how engaging in sports can become a motivation to get up in the morning and go to school: "If it wasn't for extracurricular sports, some of these kids wouldn't even be here." (Physical educator 10)

Finding a physical activity which is suitable and adapted to a young person with a disability is central in helping them develop an interest in it. A student explains: "I don't like soccer so much because I can't really play it. The cardio room is much more suitable for me and I like it." (Student 10). Many accompanying professionals emphasize the importance of focusing on the young people's capacities rather than their limitations: "We incite everyone to do their best. [...] Each child with disabilities does it their way in accordance with their potential." (Principal 6). A teacher explains that individualized approaches are more appropriate: "In physical education classes, we look at the student [...] according to what they do and progress according to their capacities." (Physical educator 12)

The quality level of the students' experiences was analyzed during the case studies. The results have shown that for 79.6% of the observational time, students with disabilities have shown signs of moderate to intense enjoyment, which is very positive. In addition, the activities seemed to be optimized for participants with disabilities for an average of 68.1% of the observational periods.

Table 7. Quality of experience relate to type of activities

	Intense pleasure		Moderate pleasure		Indifferent		Displeasure	
Active group activities	62	65,3 %	49	46,7 %	12	25,5 %	0	0 %
Passive group activities	2	2,1 %	16	15,2 %	7	14,9 %	1	25,0 %
Solitary activities	27	28,4 %	33	31,4 %	24	51,1 %	0	0 %
Not relevant	0	0 %	4	3,8 %	0	0 %	0	0 %
Missing data	4	4,2 %	3	2,9 %	4	8,5 %	3	75,0 %

Certain factors appear to optimize the quality level of the experience. Efforts to include participants with disabilities into the activity and to increase their sense of belongingness to the group, directly influence their level of participation. The study reveals that when participants with disabilities had good relationships with their peers without disabilities, their participation level was increased. The data also shows that 65.3% of intense enjoyment among young people with disabilities has been observed during active group activities.

It would be important to develop approaches that would bring students with and without disabilities together during physical activity. Furthermore, the study has shown that the totality of the practiced adapted activities observed do not reduce the amount of pleasure and enjoyment experienced by students without disabilities. Therefore, physical instructors should place emphasis on the importance of accepting and including students with disabilities so these young people don't get the feeling of failure or of being left aside. In addition, the presence of an instructor specifically assigned to students with disabilities seems to have a substantial impact on the experience they live.

Discussion

This study has confirmed that practicing sports and adopting an active lifestyle positively influence the life quality of young people with disabilities. It also sheds light on the importance of the role played by our schools when comes time to include young people with

disabilities in physical activities. According to King and colleagues (2013), it is important to consider how specific environments (social and physical) interact with the quality of the experience in order to maximize inclusion. In order for this inclusion to be adequate, the environment needs to be adapted to these participants. The limitations of this study include the relatively small number of cases study (n=15) according to the multiple variables (such as type of schools, type of area, type of disabilities). Also, however if the observational grid was based on an existing validate tools, the new version used in this study need to be validate. One strength of this study is that it actually deepens the understanding of how the experience of young people with disabilities develops within school environments. Combination of quantitative and qualitative data also reinforces the value of this study. Furthermore, this study brings to light more knowledge on the impact of the quality of social interactions and experience on the amount of pleasure felt by the students with disabilities during activities, which contributes to motivating them in adopting a more active lifestyle.

Adaptation of the environment and universal accessibility: Known factors which are not always taken into consideration

This study has shown the necessity of adapting the environment and equipment for students with disabilities. It's also exposed that the lack of funds, the deterioration of sports grounds, and the lack of knowledge about students with disabilities' specific needs, can explain why schools are not always offering suitably accessible

activity environments and adapted material. Nonexistent or inadequate layouts have proven to have a negative impact on the autonomy, the perseverance, and the inclusion of students with disabilities. As Saebu (2010) recalls, people with special needs have to constantly deal with extremely limiting factors (fatigue, lack of energy, injuries, medical complications), which can be severely amplified when the layout of their environment is inadequate.

Universal accessibility also requires the adaptation of the methods used by teachers. Their creativity becomes a major tool when offering adapted activities that are suitable and pleasurable for everyone. This confirmed the need to adapt the activities in order to maximize the potential of people with disabilities (Fougeyrollas, 2010). Pairing students or placing them in small groups can be remarkably helpful. Adapting activities to those with disabilities requires better training in physical education and a more effective sharing of information about the students' limitations and needs. This is coherent with the results from other studies (Bouvard, 2007; Bourgoin, 2007; Rimmer et al., 2004) and introduces the crucial role of support. There is more to be done by informing the accompanying professionals about adapted materials available and approaches specifically designed for young people with disabilities.

Available support and adjustments to be made in terms of instructorship

Besides the consideration of adapted materials and suitable layouts of sports grounds, the presence of specific instructorship can have a substantial impact on the experience of a student with disabilities during physical activity as well as on their level of enjoyment. Without denying the importance of the physical environment, Bouvard (2007) considers the importance of the quality of the help offered to people with disabilities. Indeed, it has an impact on the social and psychological benefits from the activities. The study has also shown how students with language deficiencies

seem to be more often than not participating in physical activities without any specific instructorship. Given the conclusions of Bouvard (2007) and Bourgoin (2007), this supports the fact that the visible appearance of a given disability and the social representation of the disability the teacher in charge may have, will influence the nature of the support offered.

Results obtained through the study point in the same direction as the ideas of Goodwin (2001) and those of Bui-Xu  n and Mikulovic (2007), to the effect that non-oppressing help can have a tangible effect on the level of involvement in an activity of a student with a disability. Indeed, data emerging from the observations show the positive impact of specialized support. Bui-Xan and Mikulovic (2007), as well as Fougeyrollas (2010) have acknowledged the importance of stimulating adapted coaching which is oriented around the capacities of the students instead of performance.

However, adjustments need to be made in certain sectors in order to fully meet the needs of these students. Many of the observed teachers in regular schools do not know much about the disabilities of some of their students, making it difficult for them to offer adequate support. Furthermore, many of these teachers deplore the lack of information, but show interest in learning more. Opportunities for exchange between accompanying professionals and the pooling of know-how need to be systematically developed in our schools.

Present social interactions, which are not universally accessible

Physical education classes bring forth many opportunities for social interactions between students with and without disabilities. This study has shown that interactions are often intermittent and are not necessarily available to every student with a disability. Moreover, they do not always generate the same impact on every student. Indeed, the group's social interactions towards students with disabilities are often limited or distant,

notably towards those with developmental or language disabilities. This is even more worrisome when we consider the concepts drawn by Junker and Carlberg (2011), which highlight the importance of including students with disabilities within the group during periods of physical activity. This is fundamental in order for these students to gain all the social and physical benefits from the activities. According to Buffart et al. (2009), the sense of belongingness brings these students a feeling of pleasure, which is essential in order for them to desire to partake in such activities again. Hassan et al. (2012) also add that feeling recognized as part of a group helps increase the participants with disabilities' self-esteem.

Results show the current urgency for teachers to raise awareness among students towards those with non-visible disabilities such as developmental or language deficiencies. This is important if we want these students to remain interested in pursuing physical activity. The Direction Régionale de la Jeunesse et des Sports (2007) has stated that awareness-raising efforts need to be systematic and based on the teacher being a positive leader who reinforces certain rules (such as the obligation of passing to every player). Moreover, the study has shown that adapting an activity to students with disabilities (such as playing soccer with a bigger ball) does not compromise the amount of pleasure other students have. This correlates with Fange et al. (2002), who pointed out that organizing unacquainted physical activities can be beneficial on many levels. Indeed, such activities can help support the inclusion of students with disabilities within activities while raising awareness among regular students about their peers with disabilities. The study has also shown how reducing the number of participants in an activity can be beneficial. Breaking the group into smaller groups or into pairs can indeed be very helpful in achieving higher involvement from students with disabilities as well as raising awareness among regular students. Following the ideas of Hassan and colleagues (2012), it can be stated that the activities which involve interactions between participants,

are beneficial in encouraging students with disabilities to participate, especially when the groups are small (10 individuals or less).

On a different note, students with disabilities might develop some good social connections at school, but these do not necessarily thrive in their everyday life. This is even truer for those who attend specialized schools, since their classmates are usually not from their neighborhood. These students are often affected by social isolation. Measures that promote physical activity among young people with disabilities need to be taken within the community.

An experience that proved to be generally positive

The analysis of data puts into perspective the importance of pleasure during the practice of sports and physical activity with relation to the expectations and aspirations of students. The correlation between personal interests and proposed activities appears crucial. King et al. (2009) show the importance of interests according to age and abilities in the adoption of physical activities among young people with disabilities. These statements confirm the necessity of pleasure and enjoyment, as Howie et al. (2012) have brought forth. For these authors, pleasure and enjoyment are important sources of motivation for young people with disabilities to pursue physically active lives. King et al. (2014) argue that the quality of the experience is more important than quantity. They add that optimal participation is defined by the quality of the interaction between young people with disabilities and their environment. King et al. (2013) add that the activity must be meaningful.

Interactions during physical activity are another important aspect to consider. For most students, they only mildly influenced the amount of pleasure expressed. For others, however, they directly correlated with their sense of enjoyment. Results have shown that young people with an autism spectrum disorder or language disability show more signs of indifference when an activity does not call for interactions. As Bouvard (2007) and Bourgoin

(2007) explained, the non-visible aspect of such disabilities might contribute to this situation. In addition, qualitative data shows that friend relationships are important for these people in order to engage in sports and physical activities outside the school setting.

Results have also proven that teachers play a key part in making physical activity a good experience for students with disabilities. Although proven to be beneficial, it is important that such help not diminish their autonomy. Goodwin (2001) explains how too much help can actually negatively affect a person with disabilities' physical autonomy. These observations have also shown that active help and support during the first few minutes can really help someone with a disability to get involved in the activity. In this case, the teacher helps a given student integrate the group. Increased participation and expressed pleasure are practically assured when such integration is followed by positive support. Considering the results obtained in regional schools, where students with bigger limitations benefited from little specific instructorship during activities and yet seemed to feel a certain pleasure, it is important to put this analytical statement into perspective. This can be explained by the proximity between families in such regions as well as their strong sense of exchange and support. The measures put in place in some schools seem to be beneficial for students with and without limitations. Marcellini, Leselec, and Gleyse (2003) also acknowledge the important role local communities play in the growing up and development of young people with disabilities.

Many school principals call for the development of partnerships with the community. This is important when taking into consideration the heavy load parents who have children with disabilities have to bear and the support they might need to overcome it. Devine (2004) explores the role of inclusive approaches that allow for greater integration and shows the importance of allowing young people with disabilities to develop to their full potential within the community. Scholl, Dierse, and Davison (2005) have proposed a model that allows greater

integration of young people with disabilities by taking into account their needs and those of their families through the involvement of specialized leisure professionals.

Conclusions

Results emerging from the study have shown that young people with disabilities are often subject to social isolation. Although friendships might develop at school, they do not often flourish back home. This is especially true in the case of young people who attend specialized schools, which often enroll students with disabilities from outside of town. Such a situation can prevent young people with disabilities from engaging in sports and physical activity because of the lack of companionship.

It appears essential to direct our attention towards students with disabilities having a positive experience during physical activity. This proves to be just as important for their well-being as it is for their motivation to do well in school. Engaging in sports and physical activities can even lead to new opportunities for a person with disabilities' family. Improvements need to be made in terms of accessibility to adapted activities in schools as well as within the community. More research is needed to develop and validate new approaches to support inclusion of youth people with disabilities in sports and physical activity.

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