

Overweight students in post-primary and secondary schools in burkina faso: pedagogical strategies for addressing this issue during practical physical education and sports sessions

Ouambi Charles ZONGO ^{1,*}, Amidou SAWADOGO ² and Koama TIENE ¹

¹ Teacher-Researcher at the Higher Teacher Training College (ENS) /Burkina Faso.

² Lecturer-Researcher at ISSDH, Joseph Ki-Zerbo University (UJKZ) / Burkina Faso.

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Abstract

This study examines the pedagogical differentiation implemented by PE teachers in the context of the care of overweight students at PE sessions. The main objective of our study was to establish a typology of didactic- pedagogical practices implemented by PE teachers in the context of the care of overweight students. To do this, we postulated that PE teachers implement differentiated teaching-learning practices. To test the hypotheses, we collected data from teachers, PE supervisors and overweight students. The analysis of the data revealed that teachers, in order to manage overweight students, differentiate between learning and assessment tasks by acting on their characteristics such as intensity, volume or duration and purpose. It also shows that the intervention with these pupils is specific and more frequent. Our study remains partial because it was limited to athletics and gymnastics. It could be extended to other APSAs taught in the various post-primary and secondary schools.

Keywords: Overweight; Teaching Strategies; Physical and Sports Education; Teaching-Learning

1. Introduction

The need to consider the individual characteristics of students in a methodological approach is essential for any teacher concerned with achieving the specific objectives assigned to the discipline. "The myth of the single method, the miracle method, or the ideal content cannot withstand this necessity of better taking into account the individual characteristics of students." (PIERON M. et al 2000, p. 36).

The physical education teacher, more than any other teacher, should therefore take into account the individual characteristics of students with regard to their educational action, which is exerted on all dimensions of the student (physical, intellectual, social, moral, etc.). The act of teaching in physical education is thus multifaceted, drawing on the physical, intellectual, psychological, and other resources available to learners in order to improve them. Since these students do not have the same level of resources or abilities, they cannot all have the same pace of knowledge acquisition or the same pace of improvement in motor skills. What room for maneuver does the physical education teacher have to help all students progress? "While the need to adapt content and methods to students' characteristics is undeniable for most teachers, the way these are implemented in daily practice is a real concern." (PIERON M. et al., 2000, p. 36). It is therefore necessary to examine physical education practices in relation to student heterogeneity. How do physical education teachers take into account the specific educational needs of these students? And what about the case of overweight students? These are some of the questions that lead us to focus on the following topic: "Overweight students in post-primary and secondary schools in Burkina Faso: pedagogical strategies for addressing their needs in physical education classes."

* Corresponding author: Ouambi Charles ZONGO

Our work comprises two main parts. The first part is devoted to theoretical aspects, namely problem definition, methodological approach, conceptual clarification, the theoretical framework, and the literature review. The second part deals with practical aspects, including methodology, presentation, analysis and interpretation of results, verification of research hypotheses, and suggestions.

1.1. State of the problem

The professional training of physical education teachers enables them to teach physical education in regular post-primary and secondary school classes. While all students participate in the classes in one way or another, only able-bodied students acquire motor skills.

To learn, each able-bodied student should therefore perform the motor tasks assigned by the teacher, regardless of their abilities. Thus, very often, some students experience difficulties performing certain motor tasks due to insufficient physical, psychological, or intellectual resources. While the teacher may consider the level of difficulty to be moderate and allow all students to progress, for some students it is quite challenging. The teacher is therefore faced with the need to adjust the motor skills tasks. But how can this be done when also dealing with time and administrative constraints? According to Tant (2018), faced with this difficulty, teachers often decide to adopt an approach that either excludes the student from physical education (PE) activities or includes or integrates them. Why do teachers adopt different approaches when they have received the same professional training? How do others go about including or integrating these students into PE sessions? Such questions lead us to examine teachers' pedagogical practices in order to identify those that allow them to support certain students, particularly those who are overweight. How do PE teachers take these students into account in PE sessions? This is the main question our study will attempt to answer. To do so, we need to answer two secondary questions, which are:

- What teaching practices do physical education teachers implement to accommodate overweight students during physical education sessions?
- What teaching methods do physical education teachers use in pedagogical situations to accommodate overweight students during physical education sessions?

The main objective of our study is to establish a typology of the differentiated practices implemented by teachers in this area. We cannot achieve this main objective without first achieving two other secondary objectives:

- Identify the types of teaching situations implemented when supporting overweight students;
- Identify the teacher's intervention methods or the ways in which these students are grouped in the classroom.

To achieve these objectives, we need to formulate hypotheses. The main premise is that physical education teachers implement differentiated teaching and learning practices. From this hypothesis stem a first hypothesis: that teachers differentiate learning and assessment situations, and a second: that they adapt their interventions and student grouping methods to the difficulty of the task.

Conceptual clarification, a literature review, and the theoretical framework are prerequisites for a coherent methodological approach in this study.

2. Theoretical framework and methodology

This section covers aspects related to the theoretical framework and the methodological approach.

2.1. Theoretical Framework

Our study is based on two main theories: socioconstructivism and differentiated instruction.

2.1.1. Socioconstructivism

Socioconstructivism originated from Piaget's constructivism (1886-1986). It starts from the premise that learning is based on prior knowledge. Therefore, individuals must understand new situations using their existing knowledge in order to transform it into new knowledge. As for Vygotsky's (1978) socioconstructivism, it is based on these postulates while also taking into account social interactions in the construction of knowledge.

2.1.2. Differentiated Instruction

Differentiated instruction is based on the fact that "students learn best when the tasks presented to them are appropriate to their learning level, related to their own experiences and interests, and when the learning situation is meaningful and natural" (NOOTENS et al., 2012, p. 272). Differentiated instruction aims to improve the student-teacher relationship, enrich social interaction, and foster learner autonomy. It therefore operates at the level of the learning process, content, and structures.

3. Methodology

We adopted a qualitative research approach, given the nature of our study, and proceeded using a hypothetico-deductive approach, which consists of first formulating hypotheses and then confirming or refuting them by examining the facts in the field. The study area is the city of Ouagadougou, and the target population is all physical education teachers in this city, totaling 298 teachers.

Sampling was carried out using purposive sampling. Thus, by telephone, we were able to contact thirty physical education teachers out of a total of 298, representing one-tenth of the target population. Of these thirty teachers, eighteen are relevant to the study because they are the ones who are responsible this year for overweight students. The teachers involved have varying levels of status and seniority. We then formed two control groups. The first control group consisted of eighteen students whom we formed into three focus groups of six each. We selected the students based on their physical characteristics after obtaining consent from the administration and their parents.

To gather more data and compare it with other data, we approached physical education (PE) instructors, given their professional experience. These seven instructors are, for us, valuable resources and constitute the second control group.

It is therefore important to note that the data collected through focus groups will be used to verify that the teachers' statements are translated into action on the ground. As for the data collected from the instructors, they serve as safeguards regarding the veracity and feasibility of the teachers' statements concerning the inclusion of overweight students. Finally, the data from observation will confirm or reinforce the information gathered in one way or another.

For data collection, we used tools such as interview guides and observation grids for direct observation.

Our study, given the sample size and the number of disciplines involved (jumps, running, and floor gymnastics), appears to have limitations. This is due to the time allotted to the study and the wide variety of disciplines taught in Physical Education. As a reminder, not only the disciplines included in this study are taught, but also team sports such as football, handball, etc.

4. Conceptual clarification

Several key concepts warrant clarification to ensure their consistent meaning within this study. These include: overweight, differentiated instruction, the motor task, and the characteristics or variables of the task.

4.1. Overweight

Overweight is the abnormal and excessive accumulation of body fat. In the field of health, overweight is characterized by the Body Mass Index (BMI). This is the ratio of mass (in kg) to height (in meters) squared. An adult is considered overweight or overweight when their body mass index (BMI) is greater than 25. They are considered obese when it is equal to or greater than 35. For children aged five (5) to nineteen (19) years, BMI is no longer the only indicator used to determine obesity or overweight. It is necessary to refer to growth charts or the so-called reference growth charts established by the WHO. Overweight is defined as a BMI for age more than one standard deviation above the median reference growth chart. Obesity corresponds to a BMI for age more than two standard deviations above the WHO reference growth chart. However, some athletes may have a high BMI but are neither obese nor overweight. This may be due to their muscle mass, which is developed as a result of athletic training.

As mentioned earlier, overweight and obesity have varying degrees of health consequences, often requiring support from a health, social, and educational perspective for those affected. Educationally, this can be achieved through differentiated instruction, which allows for consideration of their individual learning needs.

4.2. Differentiated instruction

According to Legrand (1995, pp. 47-48), "to differentiate is, in a way, to force oneself to take into account the student's nature, in contrast to their inherent abilities and the knowledge content established by the institution." In Physical Education, differentiated instruction therefore refers to diversifying or varying motor tasks or physical exercises, teaching methods, and student groupings so that each student truly learns, regardless of their resources or the difficulties they encounter.

Here we address differentiation through the diversification of methods, resources, learning situations, the distribution of roles, and the creation of support workshops.

4.3. Motor task

Leplat and Hoc (1983, p. 51) define a task "as a given goal under specific conditions." According to these authors, the conditions of completion, as well as the objective itself, are therefore inherent to a given task.

As for Famose, cited by Deligneres (2004, p. 87), in Physical Education, "A task is a series of conditions prior to the implementation of the skill that trigger and organize motor behaviour." For him, its function is to elicit from the student the mobilization of certain resources, that is to say, knowledge, abilities, and mechanisms that they possess and that they can modify and use to their advantage.

For us, the motor task in Physical Education is an important element of the pedagogical situation. It engages human motor skills and aims to achieve a specific objective under given conditions. An example of a motor task in football might be to take a shot on target into a goal guarded by a goalkeeper against one or more defenders at a minimum distance of eleven (11) meters. In Physical Education, for students to learn, they must be subjected to motor tasks that are adapted to their motor abilities. This requires a near-constant adjustment of these tasks through the variation of a number of parameters called task variables or characteristics.

4.4. Variables or characteristics of motor task

According to Merrill, cited by Famose (1990, p. 61), "Whenever, in order to promote learning, we teach using an artificially designed environment, we manipulate the task variables." The task is therefore not fixed; it can be varied in order to adapt its difficulty to the students' abilities and capabilities.

In Physical Education (PE), we mean task characteristics, including the task's objective, its volume (which could be expressed in distance, duration, or total number of repetitions), its intensity (which could be expressed in speed of movement or execution), and so on. These characteristics are all elements that PE teachers use to construct not only learning situations but also assessment situations.

5. Literature review

Several authors have addressed the issue of supporting students with special educational needs, particularly overweight students. For example, Hébrard (1986) focused on the professional and pedagogical training of teachers in relation to supporting these students. He argues that this training is a prerequisite for better support of these students. The quality of teacher training should therefore enable them to address the learning difficulties these students experience. In the absence of adequate training, Tant (2018) states that teachers very often decide to adopt an approach that either excludes students with special educational needs from physical education classes or includes or integrates them.

There is no doubt that initial and ongoing teacher training is therefore necessary if these students are to be effectively supported. However, this training alone is insufficient, to the point that teachers neglect certain tasks such as designing, preparing, and leading sessions that take into account the needs of overweight students. Marsenach (2005), through a retrospective analysis, had already highlighted this need to progressively adapt physical education classes to social values and the needs of learners. FAMOSE and DELIGNERES (1991, p. 63) take the reflection further by stating that "adapting the level of requirement of the tasks to the resources of the students is a permanent concern of the PE teacher".

However, simply offering physical exercises or motor tasks adapted to students' needs or abilities will not adequately address this concern if the teacher does not demonstrate knowledge, skills, and interpersonal abilities in leading the session. This view is shared by some authors, such as Postic (1977, pp. 11-13), who states, regarding teachers, that "depending on the tone they adopt, the gaze they direct, and the gestures they make, their message takes on a specific

value for all students and a particular resonance for some of them." And this gaze, according to some authors, must be changed. Furthermore, Buixuant and Mikulovic (2007) believe that adapting teaching to the level of students with disabilities for their integration into physical education requires "first and foremost restoring the individual's identity." According to Lefevre (2019, p. 28), "the weight of perception, the weight of words regarding the specific characteristics of adolescents, reinforces these processes of stigmatization."

Rather than casting such a stigmatizing gaze upon the student, it would be better to cast it upon the teaching itself. "Students do not have the same aptitudes, the same skill levels, the same motivation, the same abilities and learning methods. Consequently, teaching cannot be identical for everyone." (Seners, 1993, p. 121). Hence the need to differentiate teaching to adapt it individually or collectively to each student's resources. Vienneau (cited by Nooens et al., 2012, p. 270) acknowledges this necessity when he states that "The need to adapt teaching in regular classrooms to promote the success of each student is no longer in doubt." From all of the above, it is clear that supporting students with special educational needs, including those who are overweight, requires appropriate teacher training, well-designed and effective physical education sessions, differentiated instruction, and a positive attitude from the teacher towards these students. However, our concern remains regarding how teachers should approach these students in a context marked by constraints related to overcrowded classrooms, the principles and rules governing the operation of our education system, and socio-cultural pressures.

Here, we present the results of our empirical field research, followed by a discussion.

6. Results

Regarding the interviews with teachers and supervisors, five main themes were identified. This involves defining overweight, differentiating learning tasks, assessment practices and methods, differentiating interventions and student grouping methods, and making suggestions. For the focus groups, student responses were selected based on their relevance to the theme. Here, only three themes were considered: differentiating learning tasks, assessment practices and methods, interventions, and student grouping methods. As for direct observation, the criteria were developed in accordance with the selected themes.

Regarding the definition of overweight, teachers and supervisors perceive it as excess weight or obesity. "For me, overweight is excess mass. You can recognize an overweight person by their build. Overweight students are generally obese." This also confirms what supervisor 1 stated: "Overweight is the excess weight a person may have, and this can be due to their diet, their heredity, or a lack of physical activity." These answers reassured us and allowed us to move on to the other topics.

However, simply offering physical exercises or motor tasks adapted to students' needs or abilities will not adequately address this concern if the teacher does not demonstrate knowledge, skills, and interpersonal abilities in leading the session. This view is shared by some authors, such as Postic (1977, pp. 11-13), who states, regarding teachers, that "depending on the tone they adopt, the gaze they direct, and the gestures they make, their message takes on a specific value for all students and a particular resonance for some of them." And this gaze, according to some authors, must be changed. Furthermore, Buixuant and Mikulovic (2007) believe that adapting teaching to the level of students with disabilities for their integration into physical education requires "first and foremost restoring the individual's identity." According to Lefevre (2019, p. 28), "the weight of perception, the weight of words regarding the specific characteristics of adolescents, reinforces these processes of stigmatization."

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Regarding the theme of differentiating learning tasks, several practices aimed at differentiation were identified: creating variations of exercises, extending learning time for overweight students, increasing the number of repetitions, varying

the intensity or volume of work, and simplifying the task. These practices align well with the principles of differentiated instruction. The teacher's comments

14 corroborate this when he states: "To enable students to learn, we modify variables such as intensity, duration, space, and pace for running and jumping, and we also give them more time to complete tasks, especially in floor gymnastics."

As for assessment practices and methods for overweight students, these relate to assessment tasks, marking schemes, the number of assessments, and the weighting of grades. This means that adjustments are made to the task and the marking schemes in order to raise the student's average or grade. It is also important to note that these adjustments can apply to the entire class. If they only concern the overweight student, they are made by mutual agreement with the whole class. "For me, if it's a jumping event, I give them a choice between several assessment tasks by using different starting boards. The problem is more complex when it comes to other events. In running, we have to keep the same event," said the instructor. Here, it is noteworthy that all of these practices relate in one way or another to the principles of differentiated instruction.

Regarding the differentiation of interventions and student groupings, these take into account the nature of the task, the objectives set by the teacher, and the difficulties the student is experiencing. The aim here is to create a learning environment where overweight students can learn first independently, and then with others. The teacher relies on social interaction and collaboration to develop motor skills, which is a further example of socio-constructivism.

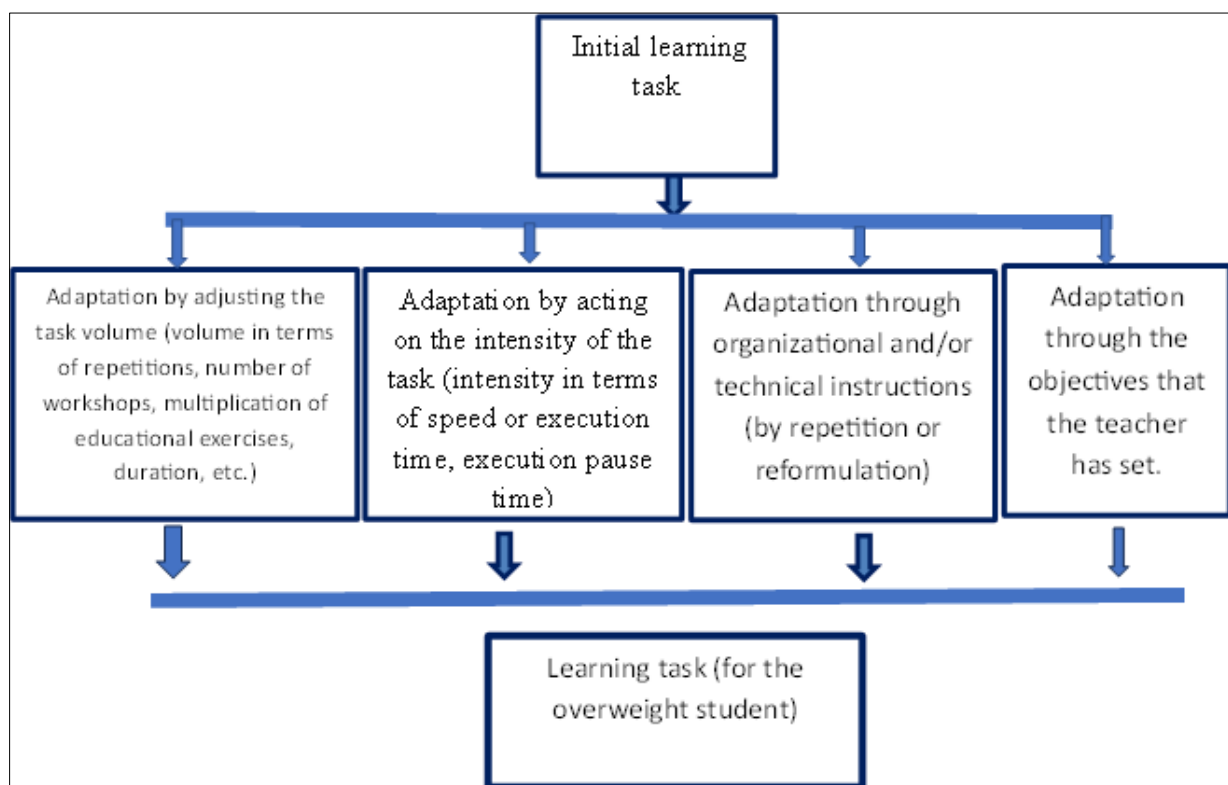


Figure 1 Illustrative diagram of practices related to the differentiation of learning tasks

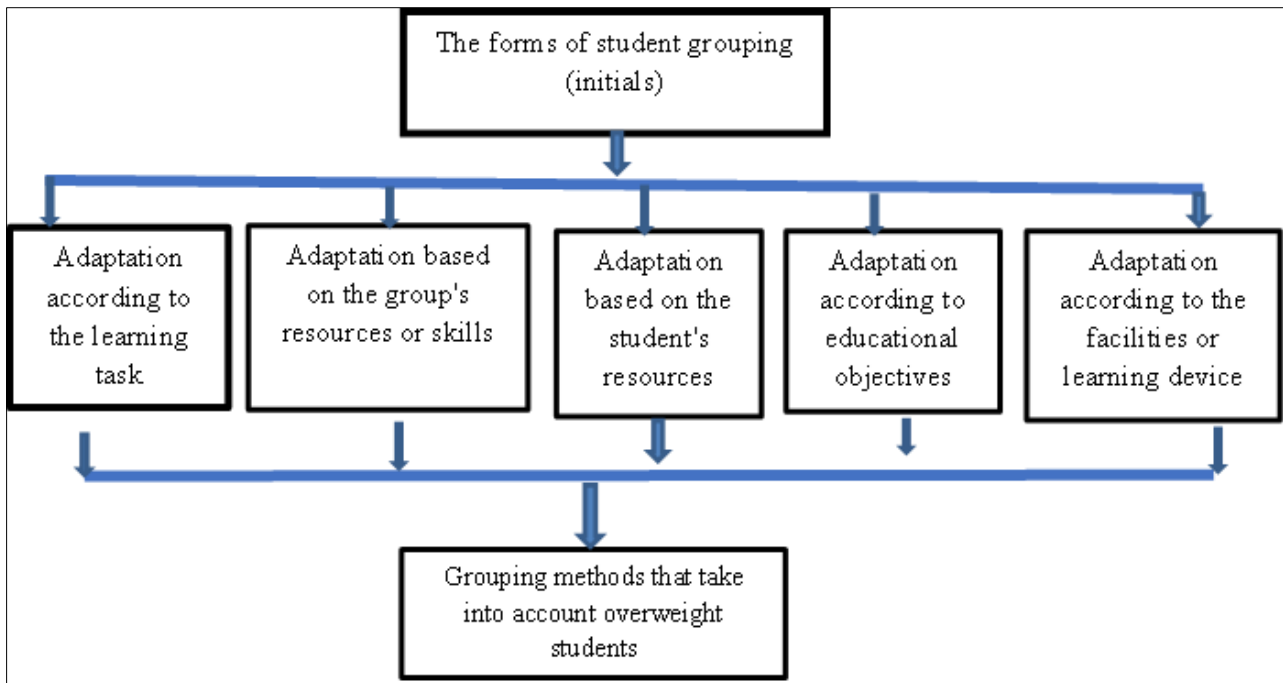


Figure 2 Illustrative diagram of practices relating to the differentiation of modalities and evaluation practices

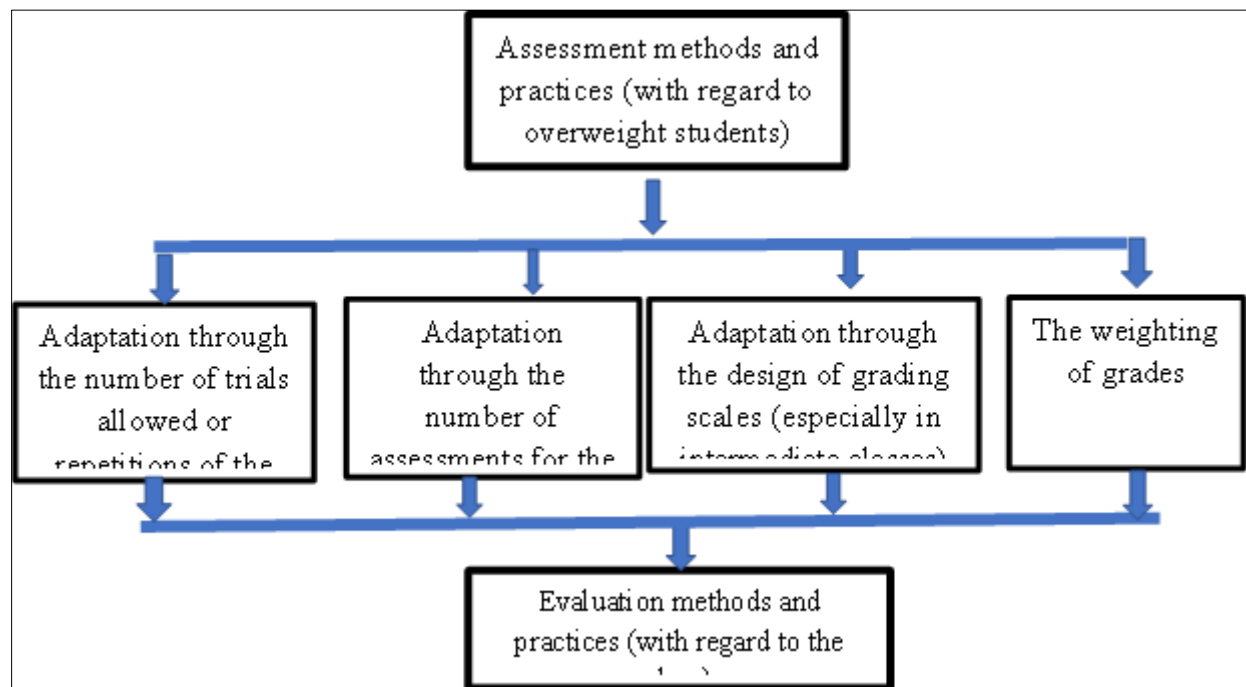


Figure 3 Illustrative diagram of practices relating to the differentiation of evaluation methods and practices

Table 1 Completed observation grid relating to the differentiated practices of three teachers (A, B, C) in three sports disciplines (jumping, floor gymnastics and sprinting) with regard to the overweight student

		A	B	C
Themes	Differentiated practices	Speed	Gymnastics	Leap
Differentiation of learning task	Acting on the volume of the task (volume in terms of repetitions, number of workshops, educational or corrective exercises).			
	To act on the intensity of the task (intensity in terms of speed or frequency of movement execution)			
	Rephrase or repeat organizational and/or technical instructions.			
	Create variations of the task			
	Act on the objectives of the task			
Forms of student grouping.	Form working groups or set up workshops according to the educational objectives of the task			
	Form working groups or set up workshops based on the resources of the overweight student.			
	Form working groups or set up workshops based on the resources or skills of the group.			
	Form working groups or set up workshops depending on the sports facilities or learning system			
Teacher interventions	To intervene in order to provide technical or organizational instructions			
	To intervene in order to demonstrate or to have demonstrated			
	To intervene in order to make corrections through instructions or corrective measures			
Evaluation practices and methods	Develop grading scales taking into account the overall level of the class			
	Modify the assessment task by changing the number of trials or repetitions			
	Increase the number of evaluations			

Criteria; Red: Unsatisfactory ; Blue: Satisfactory ; Green: Somewhat Satisfactory

7. Discussion

To conduct our research, we formulated one primary hypothesis and two secondary hypotheses. The first secondary hypothesis states that teachers differentiate learning and assessment situations when supporting overweight students. This hypothesis used the following indicators: adapting the difficulty of the motor task and implementing differentiated assessment tasks. The second hypothesis is based on the premise that teachers adapt their interventions and student grouping methods to the difficulty of the task when providing educational support to overweight students. For this hypothesis, our criteria are grouping methods that take into account the student's learning difficulties and individualized teacher interventions.

Thus, the verification of these two hypotheses is based on the analysis and interpretation of the data collected. This analysis reveals that teachers differentiate learning situations by adjusting variables in the motor task used for learning

or assessment (intensity, volume, duration, distance, number of repetitions, etc.) to adapt it to the resources of overweight students. Furthermore, the data analysis also shows that teachers individualize their interventions for these students. Grouping methods are linked to their abilities or the difficulties they encounter. Finally, regarding assessment practices and methods, it appears that teachers adapt the assessment task and then rely on fair and consensual evaluation arrangements to motivate and reward overweight students according to their efforts.

However, the skills acquired by teachers during their training do not allow all of them to create differentiated learning situations. This is why some teachers disregard their presence in the classroom or simply exclude them by somehow facilitating their exemption from certain activities, as evidenced by the high number of teachers who claim not to be responsible for these students. Tant (2018) noted this attitude on the part of teachers when he stated that, when faced with a student with special educational needs, the teacher adopts three approaches: either they decide to exclude them, or they decide to integrate or include them. Our results align with those of Bruant (1986, p. 228), who states that "Teachers confronted with disabilities often have few solutions to offer based on their own practical experience." According to him, teachers are not sufficiently experienced or equipped to handle these cases, and this is due to the fact that "the relatively limited practical training they have received does not help them to move beyond the usual framework of physical activities." They are reluctant to modify the conditions, the rules, or to propose new ones.

Our results corroborate those of Famose and Deligneres (1991, p. 63), who state that "adapting the level of task demands to students' resources is a constant concern for physical education teachers." According to them, lacking reliable tools to assess the demands of a motor task, teachers do so subjectively by varying the goal, distances, durations, number of repetitions, etc., so that it adapts to the learners' biomechanical and bioenergetic resources. Furthermore, the data analysis also shows that teachers individualize their interventions with these students. The grouping methods are linked to their abilities or the difficulties they encounter. Finally, with regard to evaluation practices and methods, it appears that the teacher adapts the evaluation task and then relies on fair and consensual evaluation arrangements in order to motivate and reward, according to their efforts, the overweight student.

8. Conclusion

If there is one real challenge teachers face, it is taking into account the individual characteristics of students in the teaching and learning process. This challenge is further complicated for physical education teachers given that these characteristics exist on several levels (intellectual, physical, moral, social, etc.). How do teachers manage this heterogeneity? This study is part of a firm commitment to examine practices related to student heterogeneity. The main objective is to establish a typology of differentiated practices concerning the educational support of overweight students. Thus, we formulated the following as our main research question: how do physical education teachers support overweight students? To answer this question, a primary hypothesis was formulated and then developed into two secondary hypotheses: one states that physical education teachers differentiate between learning and assessment situations when addressing the needs of overweight students during practical sessions, and the other that physical education teachers adapt their interventions and student grouping methods to the learning difficulties of overweight students during physical education sessions.

To test these hypotheses, we collected data and then analyzed and interpreted it using a predefined method or technique. The results obtained reveal that teachers differentiate between learning and assessment tasks by adjusting variables such as intensity, duration, volume, distance, and goal when working with overweight students. They also reveal that physical education teachers intervene specifically and frequently with these students, employing methods of instruction and grouping that take into account their difficulties.

These results thus confirm the two secondary hypotheses and, consequently, the primary hypothesis.

However, we acknowledge limitations in this study related to the sample size and the fact that it did not include all physical, sporting, and artistic activities (APSA).

Compliance with ethical standards

Disclosure of conflict of interest

All the authors acknowledge that there is no conflict of interest. They all agree with what is written in this article. In accordance with the requirements of transparency and scientific integrity, we, the authors of this study, declare that we have no conflict of interest, whether financial, commercial or otherwise, that could influence the results or

interpretations of our research on initiation rites in Benin, thus guaranteeing the independence and objectivity of our work and ensuring the credibility of our conclusions.

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