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**Systematic review in education : How does verbal communication between teacher and student affect their self-esteem and commitment to practice?**

*Systematisk granskning inom utbildning: Hur påverkar verbal kommunikation mellan lärare och elev deras självkänsla och engagemang i praktiken?*

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# Abstract

The words exchanged between teachers and students don't just stay in the classroom, they weave the invisible threads that shape learners' educational climate and self-confidence, paving the way for a future of success and fulfilment.

The aim of this thesis is to understand how verbal interactions between students and PE teachers impact on students' gendered self-esteem, and what the consequences are for their investment in practice. Recent studies have revealed that specific feedback and encouragement from teachers can positively boost students' self-esteem, thereby promoting their engagement in the learning process. However, gender disparities in verbal interactions have also been observed, with different consequences for boys and girls. An in-depth analysis of these dynamics will provide a better understanding of how verbal interactions in the classroom can be optimized to create an inclusive and stimulating learning environment, fostering the personal and academic development of all students.

Through a systemic review of qualitative and quantitative studies conducted over the last 20 years, I will identify gender differences in students' perceived verbal interactions and their positive or negative consequences on students' psychological well-being and investment in sport. The study helps to understand the role of the teacher as a facilitator of students' self-esteem and engagement, as well as providing a framework for effective and caring verbal interactions.

**Key words:** physical education, verbal interaction, self-esteem, gender difference, investment

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# Introduction

Self-esteem is a complex concept that develops throughout life but has its foundations in childhood and adolescence. Its construction is influenced by many factors, such as family, social, cultural, and educational environment, and life experiences. Self-esteem is defined as a general feeling of personal worth; it is a measure of a person's esteem, approval, appreciation, value or love for him or herself" (Adler & Stewart, 2004). In other words, it is simply a person's attitude towards themselves, which may be favourable or unfavourable (Nurra, 2011). This self-esteem can fluctuate over time, which is perfectly normal. In fact, despite good parental intentions, children may present difficulties that test their self-esteem, which may or may not be beneficial in the future. Continuing to develop self-esteem at school is an important factor in ensuring that children succeed and flourish. In addition, the verbal interactions that children receive from their teachers and/or peers can affect their self-esteem. Indeed, teachers can play an important role in encouraging their students to take the initiative, valuing their work, and offering them motivating challenges. Verbal interactions have a significant impact on the development of self-esteem. Indeed, the words that individuals use to talk about themselves, and others can strengthen or weaken self-esteem (Cockenpot & Cartau, 2017). In PE, verbal interactions between teachers and students, as well as between students themselves, can play an important role in the development of students' self-esteem. Verbal interactions can also enhance self-esteem by promoting social acceptance and encouraging students to feel included (Ouyang et al., 2020). In addition, good self-esteem is an important factor in students' engagement in PE. Teachers can foster the development of self-esteem by providing opportunities for success, encouraging students to persevere, and promoting positive verbal interactions.

Engagement also refers to a person's active and ongoing investment in a specific activity, in other words the extent to which an individual becomes involved, concentrates, and persists in a given practice (Poirier, 2018). This concept can be applied in various contexts such as the school environment, thus qualifying a student's active and motivated involvement in his or her educational journey. A student who is committed to his or her education/practice is more likely to succeed academically and to develop skills and in-depth knowledge (Motivation And Commitment - Success network Montréal, 2023).

This commitment can manifest itself in different ways and can be assessed by the teacher, such as active participation in class, perseverance in the face of challenges or intrinsic motivation (motivation that comes from the student and not from others).

Engagement at school benefits both the student and the education system. Children who are more committed tend to achieve better results at school, develop their capacity for reflection and have better self-esteem. For schools, student engagement fosters a positive and stimulating learning environment. It is understandable that the teacher and the classroom atmosphere play an important role in students' engagement in school activities (Brault-Labbé & Dubé, 2010).

Also, I engage in this research because of deep personal motivations. My goal is to become a physical education teacher, and my professional and personal experiences have made me aware of the powerful impact of adults' words on the development of young people. From the age of 4, children begin to form their identity and self-esteem by integrating the feedback they receive, a notion called “identity introjection” (Famose & Bertsch, 2017). It is essential to recognize that the words used at school and in daily life influence the construction of children's identities. Individual beliefs shape actions, and these actions, in turn, influence the beliefs of others, creating a Pygmalion effect (Meram et al., 2017). For example, a child labeled "bad" by a teacher will have lower expectations from that teacher, which will reinforce the child's beliefs and behavior.

When examining verbal interactions between teachers and students in physical education, there are numerous articles on the impact of these interactions on students' self-esteem and engagement. However, few studies address the relationship between these two characteristics. Self-esteem and engagement are interdependent, mutually influencing each other (Bardou et al., 2012). In a school setting, positive self-esteem encourages engagement because it builds students' confidence and motivation. Investment in an activity can also boost self-esteem, while negative experiences can decrease it, thereby affecting engagement. However, the relationship between self-esteem and commitment is not unidirectional, as these two factors can influence each other in a reciprocal manner.

# Presentation of the problem

## Interest and objectives of the research

Many studies have been conducted on the verbal interactions received by students, whether among peers or with their teacher. School learning involves communication and interaction between the teacher and his students. Indeed, researchers state that the quality of teacher-student interactions plays an important role in the effectiveness of student learning (Needles, 1988; Darling Hammond, 2007). The teacher has a multiple role, ie educational, social and motivational. The teacher influences the pedagogical development of the students as well as the collective atmosphere which also influences learning.

The study developed in this work consists of understanding how students' self-esteem and their commitment to practising PE are affected by the different verbal interactions they engage in, depending on their gender. However, it will first be necessary to understand the link between these elements and to define the different types of verbal interaction that can be observed in PE. Of course, this study is based on previous studies and considers the variants that were studied there.

Therefore, understanding how verbal interactions between PE teachers and students can influence students' self-esteem and investment is of great importance for several reasons. First, high self-esteem is key to fostering students' motivation to participate and engage in PE activities, which can translate into improvements in their physical performance as well as their psychological well-being. In addition, students' investment in PE is important for their overall health and well-being. By understanding how verbal interactions can influence these two key factors, teachers and educators can adjust their practice to create a positive and motivating learning environment for students. This can have a lasting impact on students' physical and mental health and their attitude towards physical activity in general (Roorda et al., 2011).

## The aim of the Research

The aim is to conduct a literature review in the field of physical education to deepen our understanding of what existing research reveals about verbal exchanges between teachers and students during PE lessons. This systematic review integrates the analysis of the number, type and consequences of the verbal interactions examined in the various included studies. Indeed, verbal interactions between teachers and students play a crucial role in the field of physical education. These interactions can influence how students perceive their own competence, their involvement in sports activities and their sense of belonging in the classroom. Previous studies have shown the link between positive and supportive interactions and improved students' self-esteem and intrinsic motivation. In short, this study aims to shed light on verbal interactions and their impact on the self-esteem and engagement of students in PE, while considering elements such as gender. The results could have practical implications for teachers wishing to create positive and motivating educational environments for their students.

## Research Objective

Attitudes and behaviour may vary depending on the environment, the gender, and the age of the children. The teacher will therefore ensure that the child's development (emotional, affective, and intellectual) is respected by proposing appropriate situations. The objective of this literature review is to:

Explore what collective research reveals about differences in verbal interactions based on student gender.

Understand how teachers' communicative adaptations can contribute to improving students' self-esteem and engagement in physical education.

Examine, through the selected articles, the influence of teacher-student verbal interactions on students' overall perception of physical education, particularly on their attitude towards physical activity in general.

To determine whether positive verbal interactions during physical education lessons have a long-term favorable impact on students' self-confidence, participation, and attitude towards physical education, regardless of gender.

## The theoretical framework

Here I will explore the different theories behind the impact of these verbal interactions on the development of students' self-esteem and engagement in physical education. This theoretical framework provides us with a solid theoretical orientation for the research, highlighting key concepts and theories that help situate the review within the broader context of existing research (Debret, 2021).

### The Pygmalion effect.

This self-fulfilling prophecy, also called the Rosenthal effect, is a psychological phenomenon where one person's expectations of another person influence their behavior and performance. Positive expectations encourage favorable treatment, increase self-confidence, and stimulate better performance, while negative expectations lead to unfavorable treatment, decreased self-confidence, and lower performance (COSTA G, 2015).

The Pygmalion effect can be observed in various contexts such as education and the professional environment. In a school context, the Pygmalion effect occurs when teachers' expectations influence student performance. Positive expectations result in support and increased confidence, promoting self-confidence and better performance. Conversely, negative expectations lead to unfavorable treatment and inferior outcomes. The Pygmalion effect highlights the crucial role of the teacher in student motivation and success, highlighting the impact of expectations on student potential. It highlights the importance of impartiality and equity to create an environment conducive to the realization of the full potential of each student (Trouilloud & Sarrazin, 2002). It emphasizes the importance of objectivity and fairness in the treatment of individuals, avoiding judgments based on preconceived expectations. In summary, the Pygmalion Effect shows how our beliefs can become reality for others.

### The self-fulfilling prophecy

This prophecy developed by Merton in 1948 illustrates how an initial belief, often based on stereotypes, becomes reality through a multi-step process. It all starts with the formation of this belief, which is then influenced by authority figures. Individuals react based on this belief, thereby reinforcing the self-perpetuating cycle. In a school setting, this prophecy manifests itself when a teacher's expectations of a student influence the student's behavior in such a way that those expectations are realized. This creates a vicious cycle where the student's actions appear to confirm the teacher's expectations, reinforcing stereotypes.

To avoid this, it is essential that teachers provide their biases, establish positive and equitable expectations for all students, and provide equal support, creating an environment conducive to everyone's success.

### Self-determined motivation

Self-determined motivation is characterized by the ability to find one's own motivation based on personal interests and values, rather than being influenced by external rewards. It is divided into intrinsic (personal pleasure) and extrinsic (external rewards) motivation and is based on satisfying psychological needs for competence, autonomy, and social relationships, according to Deci and Ryan's self-determination theory. Psychologists evaluate this motivation through questionnaires, behavioral observation, and analysis of emotional reactions.

It promotes behaviors such as perseverance, creativity, and personal satisfaction, and it is beneficial for psychological well-being, exceeding motivation based on external rewards or constraints (Dupont et al., 2010). In schools, self-determined motivation refers to students' intrinsic engagement in their learning, based on their genuine interest and skill development, not external rewards, or pressure from teachers. It thrives in an environment that provides choice, autonomy, and positive relationships, and it is linked to better academic performance, greater student retention, and increased psychological well-being. It encourages in-depth learning focused on the understanding and mastery of knowledge, rather than the simple quest for good grades (Biddle et al., 2001).

### Self-efficacy theory

Self-efficacy theory, developed by Albert Bandura in 1977, focuses on a person's personal belief in their ability to accomplish a task or achieve a goal. This self-belief directly influences a person's behavior, motivation, and perseverance. It is reinforced by personal experience, observation of others, and can be assessed using specific scales. This theory has important implications in education, training and psychotherapy, because strengthening a person's belief in self-efficacy can boost their motivation and success in achieving their goals. This theory is of great importance in the educational environment. It affects students' motivation and performance, influences their academic choices, and plays a key role in effective teaching. Teachers can strengthen students' beliefs in self-efficacy through positive feedback and a supportive learning environment.

This theory is also relevant to classroom management and resilience to failure. In short, it has a significant impact on learning, teaching and student well-being. (Marchis and Balogh, 2010).

This theoretical framework provides a solid basis for understanding how verbal interactions between teachers and students in PE can impact their self-esteem and engagement. By identifying relevant theories, this systematic review aims to shed light on pedagogical strategies and teaching practices that foster a positive learning environment conducive to the development of self-esteem and student engagement in PE.

# Methodology

This study is a Systematic Review, which consists of bringing together the results of several scientific studies on a specific subject. This method aims to bring together all the available evidence on a given subject, evaluate it critically and provide a complete and impartial analysis of the results, while considering possible biases (Nambiema et al., 2021). This provides a solid basis for informed decision-making in research. This rigorous approach is very often associated with health fields, but the production of scientific reviews also extends to social science disciplines such as social work, urbanisation, environmental sciences, and education (Gore and Jones, 2015).

The objectives of systematic reviews are diverse and each aim at different goals according to the typology proposed by Munn et al. (2018), conducting a systematic review is motivated by one of the following objectives (Needleman, 2002):

- To assess the effectiveness of an intervention, treatment, practice, or programme
- To determine the costs associated with an intervention, treatment, practice, or programme, generally in terms of cost-effectiveness.
- Understand a population's experience of a phenomenon.
- Examine and synthesise policies or expert opinion relating to a phenomenon.
- Examine current research methods and their impact on research quality.
- Determine the prevalence or incidence of a disease or problem.
- Determine the association between one or more risk factors/exposures and a given outcome.
- Determine how well a screening/diagnostic test works for a given diagnosis.
- Assess the psychometric qualities of a measurement tool.
- Determine the overall prognosis for a given disease or problem.

Several tools or resources can be used to carry out systematic reviews, but these depend on the nature of the research question, the field of study and the researcher's personal preferences (Needleman, 2002):

- Bibliographic databases such as PubMed
- Academic search engines (Google Scholar)
- Systematic reviews on similar subjects, in which it is also interesting to use the bibliographic review to find similar articles.
- Systematic review guides and manuals (PRISMA), which provide guidelines for conducting a systematic review.
- Reference management tools (Zotero, Mendeley), which make it easier to organise, manage and cite articles identified during the literature search.
- Quality assessment scales (Jodad scale), which can be used to assess the methodological quality of the studies included in the systematic review.
- Meta-analysis software (RevMan, CMA)
- Articles and books on the subject

This methodology is based on various steps usually used during its drafting (Petticrew & Roberts, 2006).

The first step is to formulate a clear and precise research question, i.e. a problem focused on a specific and well-defined subject in order to guide the research in a methodical way. Once the problem has been defined, it's a good idea to draw up a protocol. This includes the objectives of the review, the selection of inclusion and exclusion criteria for the studies, data analysis methods and literature search strategies. This protocol serves as a guide and enables a coherent methodological approach. Next comes the literature search, which can be carried out using various scientific databases and considers the elements chosen in the protocol for a logical search. This organised literature search results in the selection of articles corresponding to the predefined criteria, in other words the eligibility criteria used to select the studies to be included in the review and corresponding to the type of study, the population studied, the type of intervention, etc. The methodological quality of the studies must also be analysed, and their validity must be ensured. The relevant data from the selected studies are then systematically extracted. This data extraction involves collecting information such as the characteristics of the study (authors, years of publication, etc.), the methodology used by the author (qualitative, quantitative, etc.) and the key results. This data can be organised in a table or database to facilitate later analysis.

The studies included in the systematic review are then assessed for their methodological quality. This is done using various standardised qualitative assessment tools, such as the Jodad scale for clinical trials. This enables the researcher to determine the level of confidence in the results of the selected studies. Khan et al (2011) define quality as "the degree to which a study employs measures to minimise bias and error in its design, conduct, and analyses" (Boland et al., 2017).

This is followed by an analysis of the data extracted from the studies, which can be analysed in different ways, depending on the nature of the data and the objectives of the systematic review. Analyses may be quantitative, i.e. involving statistical meta-analyses<sup>1</sup> to combine the results of the studies, or qualitative, i.e. a narrative summary of the results. Following this stage, the results are interpreted and discussed in relation to the initial research question. Here the implications, gaps and recommendations for future research can be published. Finally, the last stage consists of conscientiously writing up all the results obtained and the answer to the research question.

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<sup>1</sup> Meta-analysis is often confused with systematic review. Meta-analysis is always part of a systematic review and consists of combining data from at least two studies to extract statistical conclusions. However, it is not always possible to carry out a meta-analysis since the data used must be sufficiently homogeneous or similar to be combined (Petticrew & Roberts, 2006).

## Search Strategy

This systematic review uses a narrative synthesis of the data collected and was carried out in accordance with the guidelines of the PRISMA model (2020). An exhaustive search of various databases was carried out (PubMed, Google scholar, Cairn, DUMAS, SCOPUS, SportDiscus) as well as a search of the series of journals publishing work in the field of physical education and sport psychology. Finally, I relied on many bibliographies of articles relating to my problematic to collect as many articles as possible on my study subject and to facilitate my selection of inclusion and exclusion criteria.

This search strategy included a combination of terms: verbal interactions between teacher and student, physical education, self-esteem, sporting commitment and academic commitment. Each term was linked and then researched, leading me to various specific articles relating to my problem. This study also included concepts related to this subject, such as the Pygmalion effect and intrinsic motivation, since these are components of the concepts of self-esteem and commitment.

The study considers both qualitative and quantitative research over the last 20 years to gather sufficient elements and knowledge to answer our question. The qualitative studies enable us to analyse and understand these phenomena in relation to our subject, while collecting data through numerous observations and/or interviews. Quantitative studies demonstrate or prove facts by quantifying a phenomenon. They are often carried out using surveys and questionnaires and are expressed in the form of tables, graphs, or statistics (Nambiema et al., 2021). I will therefore study, analyse and compare all the elements and results obtained from this literary analysis in order to respond as precisely as possible to the problematic of the subject.

Extending this documentary research over several years offers several advantages, such as an understanding of developments in the field of study, a historical perspective for a better understanding of contemporary problems and societal issues, validation of the results, which are considered more reliable, and a reduction in time bias. However, extending research over a long period can also present challenges, particularly in terms of data collection, management, and analysis. It was therefore essential for me to clearly define the objectives of the study and to choose the research period wisely to answer the research questions appropriately (Needleman, 2002). Lastly, these articles are written in French and/or English, a personal choice as I wanted to extend my research internationally and identify any differences between France and other English-speaking countries on this research question.

## Inclusion and exclusion criteria

In accordance with the PRISMA framework, detailed inclusion and exclusion criteria were defined. Both the articles analysed, and the grey literature<sup>2</sup> published between 2000 and 2023 were examined to determine their relevance. The search for grey literature is an important part of a systematic review, as it provides a balanced picture of existing evidence (Paez, 2017). Inclusion and exclusion criteria were therefore as follows:

Inclusion criteria	Exclusion criteria
Analysis of verbal interactions between teacher and student(s)	Analysis of non-verbal interactions
Use a physical education-based intervention/programme	Analysis of verbal interactions between peers
Studies that take into account the gender of students	Use an intervention/programme based on subjects other than physical education
Studies taking into account the gender of teachers if the results are relevant	
Explore student self-esteem and engagement in PE and related phenomena as a primary outcome	
Involve children/young people aged 10-17 yo	
Use a qualitative, quantitative or mixed approach.	

## Eligibility

Eligibility was assessed in three stages throughout the reading selection process. Firstly, a search based on keywords corresponding to the subjects was used to pre-select all the relevant articles. Then, in the second stage, the abstracts of these articles were scrutinised to ensure that they were relevant to the subject of our study. In other words, articles that did not meet the previously established inclusion criteria were discarded. For the final stage, I chose to retain the readings that met the ethical standards required for all the studies and articles. It is essential to adhere to strict ethical guidelines, particularly when it comes to studies conducted in schools and involving children.

<sup>2</sup> Documents may be produced by universities, research institutes, government bodies, companies, or individuals, and are often distributed outside traditional publication channels. They can be a source of additional information for researchers, as they often cover subjects not covered in traditional publications.

The consent of all participants, including subjects and organisations, must be obtained explicitly, and particular attention must be paid to minors, who require parental permission (Sloan & Quan-Haase, 2016, chap. 5). In addition, it is imperative to ensure the integrity of research subjects and protect them from any potential harm or risk (Swedish Research Council, 2023, website).

Following these three steps, 39 studies<sup>3</sup> were selected for our analysis.

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<sup>3</sup> Appendix 1 : Presentation of selected studies

# Results

## The different types of verbal interaction in PE

In PE, verbal interactions between teachers and their students play an essential role in the transmission of knowledge, the development of skills and the creation of an enriching learning environment. These interactions vary depending, for example, on the educational objective, the grade level, the sporting activity, or the teaching context. These articles have enabled us to gain a better understanding of the different types of verbal interaction that can occur in PE classes. It is interesting to present the main types of interaction to better understand this subject of study.

- **Directive or instructive interactions:** The teacher gives clear instructions to the students on what they should do during a given activity. This may involve explaining the rules of a game, showing how to perform a technique, or giving instructions on how to do an exercise.
- **Feedback and correction:** The teacher provides feedback to the students on their performance. This may include technical corrections, advice on how to improve a posture or technique, or comments on how to better engage in the activity.
- **Question and answer interaction:** The teacher encourages student reflection and engagement by asking questions that cover the rules, strategies, and benefits of exercise. Similarly, students seek clarification by asking questions about activities, rules, and techniques, which the teacher answers clearly.
- **Motivation and encouragement:** The teacher can motivate students and encourage them to persevere by using positive words. Encouragement, praise, and verbal acknowledgement serve to boost self-confidence and commitment.
- **Promoting communication between students:** The teacher can encourage verbal exchanges between students by stimulating discussions, promoting team problem-solving and organizing collaborative activities.
- **Reflective dialogue:** The teacher can encourage reflective dialogue about the aims, achievements, and experiences of the students during physical activities, encouraging them to think critically and evaluate their own performance.
- **Encouraging autonomy:** The teacher can guide students towards autonomy and responsibility by encouraging them to make decisions and plan their activities, thus fostering their personal commitment to sport.

- **Correcting inappropriate behaviour:** The teacher can intervene verbally to correct inappropriate or unsafe behaviour during physical activities, thus ensuring a safe learning environment.

The work of Trottin & Cogérino and Nicaise & Cogérino has identified various forms of feedback in PE, providing students with feedback on their performance, techniques, and behaviours. These various forms of feedback are crucial in guiding students towards continuous improvement of their skills and outcomes in PE (Trottin & Cogérino, 2009, Nicaise & Cogérino, 2008). Here are some of these forms:

- **Corrective feedback:** this identifies errors and shortcomings in the students' performance and offers specific advice on how to correct them.
- **Positive Feedback:** highlights the well-executed aspects of the students' performance. It builds confidence, motivates, and encourages students to persevere in their efforts.
- **Descriptive feedback:** provides detailed descriptions of student performance, focusing on technical aspects, posture, and movement. It helps students visualise and understand their own performance.
- **Comparative feedback:** compares the student's performance to a reference model or desired standard. This can help highlight gaps and areas for improvement.
- **Process Feedback:** This focuses on the efforts, strategies and processes the student used to complete the task. It encourages reflection on how the performance was achieved.
- **Outcome Feedback:** This primarily assesses the result of the performance. This can help to assess the achievement of the set objective and identify areas for improvement.
- **Consistency Feedback:** this assesses the consistency of performance from one session to the next. It highlights the progress made over the long term.
- **Goal-oriented feedback** focuses on the achievement of specific learning goals. It helps students focus on areas relevant to their progress.
- **Real Time Feedback:** This is given immediately after performance, allowing students to make instant adjustments.

## Are there gender differences in the teacher's verbal interactions during PE lessons?

Verbal interactions between teachers and students are crucial for the acquisition and development of skills in the classroom, including in physical education. However, these interactions vary depending on the sex of the children. Gender stereotypes and social expectations can influence the way teachers communicate with students, significantly impacting their engagement, motivation, and perceptions of learning.

Studies, particularly in the Anglo-Saxon world, have revealed notable differences in interactions between teachers and students based on gender: boys often receive more attention, information, and criticism than girls. Some researchers have even suggested that girls and boys learn to conform to the social expectations of their own gender (Levrey, 2018). Some authors affirm that “girls and boys learn to be their own gender” (Trottin & Cogérino, 2009). Disparities, both qualitative and quantitative, depending on the sex of the children.

An analysis of the results shows that when it comes to disciplinary incidents, boys have more interactions with teachers than girls. Regarding the duration of interactions, boys maintain a predominance, but this does not essentially result in longer interactions than those with girls. Regarding the initiation of interactions, there is no significant difference between boys and girls. Finally, regarding the nature of the feedback, no significant difference was recorded in the results of this study.

Furthermore, the study by Nicaise and Cogérino (2008) also highlights significant differences depending on the gender of the students, with a clear preference for boys in approximately 78% of interactions. This research also examines timeliness of intervention, demonstrating that boys benefit from more rapid intervention than girls, especially when it comes to off-task behaviors. These significant differences reveal that teachers may be less tolerant of boys who disengage from the activity, while they may perceive girls as passive and vulnerable (Scraton, 1986, Joux and Cogérino, 2005). In other words, the lower the expectations, the more directive the interventions, valid for both sexes. On the other hand, as expectations increase, the level of control decreases.

## Are there disparities between teachers' expectations and students' perceptions?

Gender differences in teacher-student interactions may be closely related to teachers' expectations of their students. The preconceived expectations a teacher may have of a particular gender group can influence the frequency and nature of interactions they initiate with those students. The cognitive mediation model suggests that teachers and students have divergent perceptions of classroom events. Students' interpretations of the feedback given by the teacher could play an intermediary role in the impact of this feedback on student performance (Lee, Keh & Magill, 1993). Research has shown that 14% of students do not receive feedback and 44% do. Furthermore, studies have shown that children do not correctly register or retain a significant proportion of the feedback they receive (Nicaise & Cogérino, 2008). Girls and boys interpret the tasks assigned to them differently, placing more value on certain dimensions based on their gender identity (Verscheure & Amade-Escot, 2004). According to Nicaise and Cogérino (2008), boys feel they receive more criticism while girls report receiving more technical feedback, regardless of the type of physical activity offered. These results suggest that both girls and boys seem to have internalized the idea that physical activities tend to be perceived as predominantly masculine. This could explain why teachers tend to expect more from boys, leading to more criticism of them. Unlike girls, boys seem to have less latitude to disengage from activity, as indicated by research by Nicaise & Cogérino (2008). Interaction patterns between boys and girls reflect this trend, showing that boys receive feedback more frequently and more harshly when participating in activities traditionally associated with their gender (Nicaise et al., 2006). It is important to note that these disparities are not simply due to school habits or common stereotypes but result from pedagogical interactions where exchanges between teachers and students regarding the subjects taught can reveal information about the mechanisms behind differences in success between girls and boys (Verscheure & Amade-Escot, 2004).

This research explores the concept of self-fulfilling prophecy (Merton, 1948), referring to a false expectation that leads to its own fulfillment, illustrated by the Pygmalion Effect in educational settings (Rosenthal & Jacobson, 1968). Four key steps are identified for teacher expectations to become self-fulfilling: teachers form expectations at the beginning of the school year, these expectations influence their interactions with students, students perceive these differences in treatment, and if it persists, this impacts student motivation and performance, confirming initial expectations (Sarrazin et al., 2009).

The study by Trouilloud et al. (2002) assessed the relationship between teachers' expectations, students' confidence, and their performance in physical education. Students first assessed their confidence and took a standardized test. Next, teachers wrote down their expectations of students. At the end of the course, students reassessed their confidence, took a final test, and grades were recorded. The results showed that 58% of the variation in teacher expectations was related to prior student performance. Additionally, 65% of predictions based on these expectations turned out to be accurate, with no evidence of a self-fulfilling prophecy. In other words, even when prior performance and perceived skills were similar, students for whom teachers had high expectations performed better on standardized tests than their peers with lower expectations. This study thus confirms that teacher expectations are reliable predictors of student success in physical education, largely due to their accuracy, which arises from interactions between teacher and student, allowing teachers to quickly assess and specifically the overall athletic skills of students.

Nevertheless, teachers' expectations could have a direct impact on students' perceptions of abilities and performance, even after accounting for their backgrounds. For example, teachers may pay more attention to students for whom they have high expectations (Jussim, 1986; Rosenthal, 1974), which, although moderate, is consistent with previous research (Trouilloud et al., 2002). The study by Barrière-Boizumault and Cogérino (2012) reveals a gap between teachers' perception of their interactions with students and the reality of their practice. Teachers have clear opinions on how they initiate these interactions, including the types of feedback given. However, semi-structured interviews showed that what they say does not always correspond to what they do in class. This discrepancy can be explained by the initial training of teachers, which places more emphasis on the transmission of knowledge than on pedagogy. Additionally, teachers adapt to the unique personalities, characteristics, and motivations of their students, leading them to focus on different aspects of the instructional relationship. This adaptation often occurs unconsciously, with little self-reflection or analysis of their own practice to identify these tendencies (Barrière-Boizumault & Cogérino, 2012).

## Impact of verbal interactions on students' self-esteem and engagement

Several factors influence students' self-esteem, particularly in the context of physical and sports education (PE). Feedback, whether positive or negative, is beneficial to students' perceptions of competence, and time spent with a student also reinforces this perception. However, gender disparities in teacher comments are observed, although these are more related to academic and social factors than physical attributes (Vigneron, 2006). Gender reflects social rather than intrinsic distinctions (Mathieu, 2002). The study shows that the degree of masculinity of children, particularly among girls, encourages teacher-student interactions in PE, thus promoting their self-esteem.

Regarding differences by gender and educational level, boys generally benefit from higher scores in assertiveness, self-efficacy and sports participation compared to women. Results also vary depending on school level, with marked differences in terms of sports practice and self-sacrifice. Additionally, various aspects of body image, such as fitness evaluation and appearance adjustment, are positively associated with self-esteem, self-denial, as well as self-affirmation and personal effectiveness (Ouyang et al., 2020). PE teachers play a crucial role in improving self-esteem by developing perceived sporting competence and strengthening students' perceived physical worth.

When looking more closely at the underlying mechanisms, it is important to note that self-efficacy prophecy also plays a role (DARNIS, 1991). This means that if teachers have high expectations of their students in terms of sports competence, this can have a positive effect on the actual performance of those students. Indeed, high self-esteem is associated with active engagement in sport, while low self-esteem is linked to disinterest and exclusion from sporting activities (Isambert, 2018). Also, the influence of reflective and personalized teaching by physical education teachers, as well as the positive impact of inclusion in class on students' self-esteem, by assigning responsibilities to students with self-esteem of oneself weaker. This ties in with the self-efficacy prophecy, where positive teacher expectations can improve student performance, playing a role in developing PE students' self-esteem. Additionally, the Pygmalion effect, which refers to the idea that teachers' expectations of their students can influence how those students view themselves and behave, may also be relevant. If teachers have high expectations for certain students, they are more inclined to develop positive self-esteem and become more involved in sports activities (Trouilloud & Sarrazin, 2002).

Finally, a study highlights the importance of teacher training in iterative and reflective pedagogy in PE. This training can have a positive impact on pedagogical reflection and the personalized approach of teachers towards their students, which in the long term can contribute to the development of self-esteem (Rubeli et al., 2020). The study also confirms that high self-esteem encourages participation in sport through commitment and attachment, unlike low self-esteem, which is linked to disinterest and exclusion from sport. Korkmaz, 2014; You et al., 2017) and highlights the positive role of self-esteem in promoting sports participation (Ouyang et al., 2020).

Engagement and motivation are closely related concepts that influence students' participation in physical activity. Engaging in sports involves long-term perseverance, going beyond simple frequency of participation. It takes time, energy, and effort, and is influenced by various factors such as motivation, experience, sporting environment, social interactions and personal expectations. Self-determined motivation, where individuals find their own intrinsic motivation to engage in the activity, plays a central role in this dynamic.

Regarding motivation in sport, it can be of different natures, notably intrinsic (motivation based on pleasure or personal interest), extrinsic (motivation linked to external rewards or sanctions), integrated (aligned with values personal), identified (motivation guided by the understanding of the importance of an activity), introjected (motivation based on guilt or the preservation of self-esteem) and external regulatory (motivation based on concrete rewards or punishments ) (Famose, 2003). It is important to note that these different forms of motivation are not mutually exclusive and can coexist depending on situations and individuals. When it comes to teachers' expectations of students, this may be influenced by the Pygmalion effect. This theory suggests that teachers' positive or negative expectations of their students can influence students' actual performance. In other words, when teachers believe in a student's ability to succeed, that student tends to perform better. This may also be linked to the self-efficacy prophecy, where teachers' expectations influence students' perceptions of their own skills (Trouilloud et al., 2006). If teachers have high expectations of a student, he or she is more likely to develop high self-efficacy, which is the belief in one's own ability to succeed in an activity.

The results of a study suggest that the quality of students' motivation largely depends on the motivational climate created by the teacher in the classroom. A teacher who promotes student autonomy can have a positive impact on their self-determined motivation by meeting their needs for autonomy, competence, and relatedness (Parish & Treasure, 2003). This involves listening more to students, giving fewer strict directives, promoting student choice and responsibility, and fostering autonomy in their work, including in verbal interactions during physical education sessions (Sarrazin et al., 2006). In contrast, a teacher who creates a more controlling environment by using authoritarian language, imposing strict rules, and encouraging competition may harm students' intrinsic motivation by making them feel like they are being manipulated, which may also reflect in their verbal interactions and engagement in practice.

Perceived empowerment of teacher support appears to have a significant impact on students' effort, which in turn influences their physical self-esteem (Furtak & Kunter, 2012). Strengthened intrinsic motivation through perceived autonomy support from teachers may encourage students to invest more effort in physical activity (Sarrazin et al., 2006).

Regarding the need for competence, it is a key component of intrinsic and self-determined motivation, and when this need is satisfied, it stimulates intrinsic motivation while reducing extrinsic motivation. It is essential to provide positive, accurate and sincere feedback to students, including in verbal interactions, to create a non-competitive environment and to promote interaction with teachers to justify their choices and encourage intrinsic goals (Mouratidis et al., 2008).

Students' expectations of physical education are influenced by various factors, including initial performance, stereotypes related to gender, appearance, ethnicity, and socioeconomic status (Trouilloud & Sarrazin, 2002). Teachers tend to be more supportive of students they consider motivated by promoting their autonomy, while they adopt a more controlling style towards students considered less motivated. However, it is essential to consider the Pygmalion effect, where positive teacher expectations can encourage student success and strengthen student engagement (Trouilloud & Sarrazin, 2002). Past experiences also influence students' current perceptions of skills; positive experiences reinforcing the perception of competence for similar tasks (Dupont et al., 2009). Disparities also manifest by gender, with girls receiving less feedback, showing lower perceived competence and higher extrinsic motivation in physical education than boys. Motivation is stronger when activities corresponding to gender stereotypes influence perceived competence. In physical education, the motivation involved is positively linked to pleasure, self-esteem, engagement, performance, and positive emotions (Dupont et al., 2009).

The perception of the compatibility of a sporting activity with gender can influence the confidence and perception of skills of students, particularly girls (Lirgg, 1993; Solmon et al., 2003). Teachers sometimes have different expectations for student behaviors based on their gender, which can influence how they interact and respond during verbal interactions to student behaviors.

Ultimately, students may disengage from physical activity for a variety of reasons, including lack of personal interest, past negative experiences, inadequate educational climate, lack of skills, lack of autonomy, complexity activity or lack of encouragement. It is important to consider these factors and adopt an inclusive teaching approach to maintain student engagement in physical education (Weiss, 2000).

## Discussion

Observation of numerous studies has revealed that there are indeed differences in the number and type of interactions depending on the gender of the children and the expectations of the teachers. These expectations are often influenced by the Pygmalion effect, where the teacher bases his expectations on his first impression of the student, his previous experiences, and sometimes unconsciously, on the gender stereotypes present in society. In other words, verbal interactions between teachers and students are often tinged with gender stereotypes, which can have distinct repercussions depending on the sex of the students. As a result, teachers' implicit expectations for boys and girls may create gaps in how students perceive their own value and skills, thereby contributing to the prophecy of self-efficacy.

Positive interactions are crucial for reinforcing students' perceptions of competence, which in turn influences their enjoyment and behaviors toward physical activity. Therefore, interventions should focus on improving students' self-assessment of physical abilities to support their continued engagement and self-esteem. Verbal exchanges also contribute to the classroom atmosphere, and a respectful and supportive environment reinforces the feeling of belonging and unity. However, gender stereotypes and discrimination can hinder the creation of this positive climate, thereby affecting group cohesion and commitment, which is an essential aspect of self-determined motivation (Balliger, 1981).

Social support from teachers is of paramount importance in developing students' self-confidence, enjoyment and motivation. Positive and inclusive verbal interactions boost classroom engagement, as students who feel valued and encouraged to actively participate are more likely to be engaged in their learning. However, failing to encourage girls in the same way as boys can limit their participation, affecting their motivation and long-term success. Therefore, a learning environment that focuses on personal achievement, skill mastery, and enjoyment, rather than external comparisons, proves beneficial for self-esteem, motivation, and consequently, student engagement (Dupont et al., 2009). A student who has good self-esteem and a positive perception of his or her individual skills tends to engage more easily in the activity. These perceptions often result from a sense of self-efficacy, which is reinforced by positive and encouraging feedback from the teacher, as well as high expectations that take into account the student's personal needs. These interaction patterns also nourish the student's self-determined motivation and thus have a positive impact on their engagement in practice.

To maximize these positive effects, it is essential that teachers adopt empathetic and positive communication with their students. By providing positive feedback on individual efforts and progress, teachers can boost students' self-esteem. Authentic feedback that recognizes skills and progress contributes to positive perceptions of achievement. It is essential to emphasize the value of effort and determination rather than final results, thus avoiding comparisons between students, which could lead to negative competition detrimental to self-esteem. Encouraging students to speak up and contribute to the classroom dynamic also promotes integration and engagement, and a reflective and individualized teaching approach has positive effects on student self-esteem and engagement.

Teachers should be careful to avoid gender-differentiated expectations, actively encouraging girls and boys to participate on an equal basis to build self-esteem. They must also consider the individual needs and interests of students, tailoring their interactions accordingly. The skills offered to students must be adapted, neither too simple nor too difficult, to avoid boredom or anxiety. By guiding the progression of physical activity skills and setting realistic goals, teachers can create a learning environment in which verbal interactions build students' self-esteem and engagement, while promoting their general well-being. These positive interactions have a lasting impact on student engagement and self-esteem, regardless of gender. However, it is important to recognize that stereotypes persist in teacher-student interactions, with differentiated expectations. Boys often receive more feedback and are less encouraged to give up, which boosts their self-esteem. On the other hand, girls may be less encouraged, which can limit their engagement, thus affecting their motivation and long-term success. In other words, to promote self-esteem and student engagement, it is essential to create a positive and inclusive learning environment, avoiding differentiated expectations and actively encouraging the participation of all students, regardless of their gender.

However, limitations remain in this systematic review. Initially, it requires time, which may lead to the omission of published studies after the search. Selection biases can also arise, the criteria being interpretable in different ways, influencing the selection of studies. In addition, a careful search of the literature is essential, but time or other constraints may exclude relevant studies. The failure to take gender disparities into account in certain studies requires time-consuming cross-checks to obtain concrete conclusions. In addition, the variable methodological quality of the studies may impact the overall validity. The diversity of methods, participants and results makes it difficult to aggregate and generalize conclusions.

Language barriers made it difficult to understand some studies. Finally, a publication bias emerges, favoring positive or significant results and distorting the summary of results.

This research consolidated various findings and intersected different variables to provide a concrete answer to our research question. Although carrying out a field study can make a significant contribution to the validation of these results, it is recommended, in consideration of the findings, to carry out such a study over an extended period. Moreover, for future studies, exploring variations in non-verbal interactions, which is also a mode of communication adopted by teachers and likely to influence self-esteem and student engagement in PE, could also be useful. turn out to be an interesting lead.

## Conclusion

Verbal interactions between teachers and students in an educational setting have a major impact on student learning, personal development and engagement. These exchanges take various forms, such as encouragement, comments, questions, instructions and feedback. Teachers use them to convey information, guide students, stimulate participation and build self-confidence. These verbal interactions between teachers and students also have a significant impact on students' self-esteem and engagement, taking gender into account. Verbal exchanges in the classroom are not just a means of communication, but also influence students' self-perception and motivation. The Pygmalion effect, or self-efficacy prophecy, plays an important role in these interactions. Teachers who set high expectations for their students, and who encourage them to believe in their abilities, can positively influence students' self-perceptions and motivation. In other words, if a teacher believes in a student's ability to succeed, that student is more likely to believe in themselves, actively engage in learning, and develop positive self-esteem. However, it is crucial to note that these interactions can also be influenced by unconscious bias and gender stereotypes. Student engagement in physical education refers to their level of active, motivated, and participatory investment in physical education activities. This involves their physical, emotional and cognitive involvement, as well as their willingness to actively participate in the exercises, games and learning offered as part of physical education. A high level of involvement reflects interest, motivation, and enthusiasm for participating in physical activities (Weiss, 2000). Student self-esteem refers to an individual's overall, subjective perception of their own value, skills, and personal worth as a learner. It encompasses confidence in one's abilities, belief in one's worth as a person, and how one perceives oneself in relation to others. Positive self-esteem is associated with self-confidence, motivation, and engagement in learning activities (Famose and Bertsch, 2009).

Teachers who use positive, supportive interactions, characterized by constructive feedback, nurturing feedback, and encouragement, help build students' self-esteem. When teachers fairly recognize students' efforts and achievements, they promote the development of a positive perception of their skills and self-esteem. This is particularly crucial for students, regardless of gender, as strong self-esteem is essential to their psychological well-being and engagement in learning. However, verbal interactions can also be influenced by unconscious biases, implicit expectations, and gender stereotypes.

Teachers may unintentionally give more attention to some students than others, based on biases. For example, boys might be more encouraged to participate in more competitive physical activities, while girls might be steered toward more passive roles.

These differences in verbal interactions can have an impact on students' self-esteem, motivation, and engagement, particularly depending on their gender. Considering students' gender, teachers must be aware of their own biases and ensure they provide balanced interactions that encourage all students to express themselves, actively participate, and develop positive self-esteem. By fostering an inclusive environment in which expectations are not biased by gender, teachers can help improve students' engagement and self-determined motivation, while strengthening their self-esteem, regardless of their gender.

In other words, verbal interactions between teachers and students play a vital role in shaping students' self-esteem and engagement. The Pygmalion effect and self-efficacy prophecy can be powerful drivers of student self-perception and motivation. Positive, fair, and encouraging exchanges help cultivate a positive self-image, stimulate motivation and encourage active participation in the learning process. It is important to note, however, that this process takes time, particularly with children or adolescents who are developing their identity, who rely on feedback from their teachers to evaluate their feeling of competence.

Finally, to strengthen the self-esteem and engagement of their students, teachers can implement several strategies. They can offer positive, encouraging feedback that recognizes students' efforts and progress. Individual encouragement, aimed at reinforcing their sense of worth, is also crucial. It is important to accept each child regardless of their abilities and provide appropriate challenges that demonstrate confidence in their abilities. Constant encouragement when difficulties arise encourages perseverance, while open-ended questions encourage active participation. Additionally, empathic validation of emotions and creating a positive learning climate through respectful and encouraging interactions are essential. By fostering such interactions, teachers have a positive impact on students' self-esteem and engagement, creating an environment conducive to learning and personal development.

# Appendix

## 1. Presentation of selected studies

Name of the article	Author(s)/ Date	Nature	Content
<p><b>Filles et garçons en EPS : approche descriptive des interactions verbales entre enseignant-e et élèves</b></p> <p><b>(Girls and boys in PE: a descriptive approach to verbal interactions between teachers and students)</b></p>	<p>B. Trotin, G. Cogérino (2009)</p>	<p>Qualitative</p>	<p>The aim of this study was to highlight any differences in verbal interactions between PE teachers and their children, depending on the gender of the children and teachers, in the French educational context. The initial hypothesis was that boys and girls did not experience the same interactions with their teachers, with boys benefiting from more interaction, information, and criticism than girls. However, boys had a higher number of interactions than girls only if disciplinary incidents were considered. Also, the nature of the feedback perceived by the children from their teachers did not differ according to gender.</p>
<p><b>Les feedback émis par l'enseignant(e) d'EPS et perçus par les élèves : quelle similarité ?</b></p> <p><b>(Feedback given by the PE teacher and perceived by the pupils: how similar is it?)</b></p>	<p>V. Nicaise, G.Cogérino (2008)</p>	<p>Qualitative</p>	<p>This study examines gender disparities in verbal interactions between teachers and students, as well as their perception depending on the gender of the students. The exchanges were analyzed using the adapted Coaching Behavior Assessment System (CBAS), and the teachers gave their feedback through a questionnaire. Results show that, even after accounting for students' physical activity level and perceived competence, girls experienced more positive interactions, including more praise and technical advice, while boys reported received more criticism.</p>
<p><b>The Influence of Sports Participation on Body Image, Self-Efficacy, and Self-Esteem in College Students</b></p>	<p>Y. Ouyang &amp; al. (2020)</p>	<p>Quantitative</p>	<p>This study explores how body image, self-efficacy, and self-esteem influence students' sports participation, considering factors such as gender, grade, and subject studied. The results reveal positive and significant links between body image, self-efficacy, self-esteem and participation in sports activities. In particular, self-efficacy is positively correlated with both self-esteem and sports participation, while self-esteem is also positively related to sports participation. In addition, the study highlights a direct impact of body image on sports participation. The analysis also reveals that self-efficacy and self-esteem play a key role as mediators in the relationship between body image and sports participation. In short, this research highlights the significant influence of body image, personal efficacy, and self-esteem on students' sporting engagement, emphasizing the central importance of self-esteem. in this dynamic.</p>

<p><b>Students' Perceptions of Teacher Feedback and Physical Competence in Physical Education Classes: Gender Effects</b></p>	<p>V.Nicaise &amp; al. (2007)</p>	<p>Quantitative</p>	<p>This study examines the impact of students' gender on their verbal interactions with teachers during physical education classes. It examines how student gender and different physical activities influence the frequency and nature of interactions between teachers and students. After analyzing the filmed sessions, each interaction was evaluated using an adapted version of the Coach Behavior Assessment System (CBAS). The results reveal that verbal interactions between teachers and students vary significantly depending on the gender of the student, the type of activity, the composition of the class and, of course, the teacher in charge.</p>
<p><b>Les croyances des enseignants d'EPS sur les communications verbales et non verbales : décalage avec la pratique réelle ?</b></p> <p><b>(PE teachers' beliefs about verbal and non-verbal communication: a discrepancy with actual practice?)</b></p>	<p>M. Barrière-Boizumault, G. Cogérino (2012)</p>	<p>Qualitative</p>	<p>The text explores interactions between teachers and students, focusing on the pedagogical relationship and the importance of communication in this relationship. The study uses interviews about classroom interactions and analyzes specific moments related to this topic. The results reveal that teachers often have little reflective awareness of their interactions, which may be at odds with their personal beliefs. This highlights the need to re-examine the pedagogy taught and practiced by teachers.</p>
<p><b>Quels sont les types d'interactions professeur-élève qui favorisent l'engagement volontaire des élèves en classe d'EPS ?</b></p> <p><b>(What types of teacher-pupil interaction encourage students' voluntary engagement in PE class?)</b></p>	<p>D. Balliger (2016)</p>	<p>Qualitative</p>	<p>The study examines verbal interactions between the teacher and students during a class session, highlighting students' reactions to instructional content. The results of a qualitative analysis reveal that institutional rules, sports game rules and team formation lead to negotiation-like interactions. The teacher favors a teaching approach focused on respecting the rules, thus creating an environment conducive to cooperation in class. It is progressing towards greater student autonomy in the management of rules, adopting a "delegation of powers" approach. In addition, she prefers direct communication with students in the event of incidents rather than punishment, which promotes their accountability. Finally, she regularly motivates students with encouragement and congratulations.</p>
<p><b>The Influence of Teacher Expectations on Students Achievement in Physical Education Classes: Pygmalion Revisited</b></p>	<p>D. Trouilloud &amp; al. (2001)</p>	<p>Quantitative</p>	<p>This article examines the link between teacher expectations and student achievement in physical education. He points out that teachers' expectations can influence students' performance in different ways, including creating self-fulfilling expectations and affecting their self-esteem. Additionally, students' perceptions of their own abilities play a vital role in this process. The study shows that teachers' expectations have limited effects on students' performance, but they have a significant impact on their self-esteem through verbal interactions. In summary, teacher expectations may impact students' self-perceptions in physical education, although they have limited effects on their direct performance.</p>

<p><b>Liens entre genre psychologique, estime de soi corporelle et interactions enseignant d'EPS-élèves en lycée professionnel</b></p> <p><b>(Links between psychological gender, bodily self-esteem and interactions between PE teachers and students in vocational secondary schools)</b></p>	<p>J. Moniotte &amp; al. (2017)</p>	<p>Quantitative</p>	<p>This study focuses on the teaching of PE in vocational lycées, and more specifically on the self-esteem of children attending these establishments. These schools generally have classes with an unbalanced gender mix, and this study seeks to understand the link between interactions, gender orientation and self-esteem. Using video recordings and questionnaires conducted over two periods during the year, the study takes account of 3 variables: gender, self-esteem and the amount of feedback received during PE lessons. The results show that although the pupil's gender had no significant effect on the number of feedbacks received, it had the greatest impact on self-concepts. In fact, the number of feedbacks received had an impact on the students' feeling of competence in sport.</p>
<p><b>Estime de soi et démobilitation scolaire des adolescents</b></p> <p><b>(Self-esteem and school dropout among adolescents)</b></p>	<p>E. Bardou &amp; al. (2012)</p>	<p>Quantitative</p>	<p>The aim of this study was to identify the psychological processes underlying the notion of school disengagement and to highlight the factors preventing school drop-out, focusing mainly on the impact of young people's self-esteem. The results showed that self-esteem has an impact on school engagement. Indeed, in the school context, the higher the self-esteem, the greater the school engagement. This implies that controlling emotions and evaluating one's own academic skills enable adolescents to fight for recognition and to manage the competitive process they face at school, particularly in the face of their teachers' expectations.</p>
<p><b>Déterminants et effets de la motivation des élèves en éducation physique</b></p> <p><b>(Determinants and effects of student motivation in physical education)</b></p>	<p>J-P. Dupont &amp; al. (2009)</p>	<p>Literature review</p>	<p>This paragraph presents two main objectives. First, it explains in detail the models of self-determined motivation and dynamic and extrinsic motivation. Second, it summarizes current scientific advances regarding the factors that influence students' self-determined motivation in school physical education. Research shows that teachers play an essential role in creating an environment conducive to meeting students' needs for autonomy, competence and social belonging. This satisfaction is crucial because it leads to self-determined motivation, bringing short-term (engagement, performance) and long-term (adoption of an active lifestyle) benefits for students.</p>

<p><b>La construction de l'estime de soi des élèves en EPS : une illustration en ultimate</b></p> <p><b>(Building students' self-esteem in PE: an illustration in ultimate)</b></p>	<p>P. Isambert (2018)</p>	<p>Qualitative</p>	<p>This study examines the development of students' self-esteem in physical education by looking at the means put in place to promote better self-esteem. The results indicate that six students experience slight apprehension about speaking in public and have a negative attitude. This low self-esteem seems to be due to concerns related to integration into the group and the perception of others, as well as a lack of support from the teacher. However, initiatives aimed at encouraging action allowed these introverted students to participate more and integrate into the group by assuming responsibilities, which strengthened their communication with their teacher. This also created a more positive classroom atmosphere, which had a positive impact on student motivation.</p>
<p><b>Promoting schoolchildren's self-esteem in physical education: Testing the effectiveness of a five-month teacher training</b></p>	<p>B. Rubeli &amp; al. (2020)</p>	<p>Quantitative</p>	<p>The aim of this study is to evaluate the impact of a 5-month training course designed to improve the iTFR and their reflective formative intervention on PE teachers. The aim of the study was to understand whether this training had a positive effect on children's perceived sporting competence and overall self-esteem. The results show that the training led to an increase in the teachers' teaching style, but no significant change in iTFR. However, over a period of 8 months, significant positive effects were observed on children's perceived sporting competence and global self-esteem, showing the beneficial impact of teacher training on these aspects in the long term.</p>
<p><b>Les enseignants d'EPS face aux élèves qui décrochent de l'activité : interventions selon le sexe des élèves et discours relatifs aux comportements observés</b></p> <p><b>(PE teachers dealing with students who drop out of the activity: interventions according to the gender of the pupils and discourse on the behaviours observed)</b></p>	<p>N. Bonniot-Paquier &amp; al. (2009)</p>	<p>Quantitative</p>	<p>This article examines how physical education teachers interact verbally with students exhibiting deviant behaviors during lessons. The study analyzes these interactions according to the gender of the students, the level of expectations of the teachers and gender stereotypes. The results reveal that teachers communicate more frequently and quickly with boys who are dropping out of school, adopting a more controlling communication style with girls due to the belief that they are less motivated. Gender stereotypes are also present when teachers explain deviant behavior. This research questions the role of physical education teachers in perpetuating these stereotypes and their impact on student engagement and motivation.</p>
<p><b>Relationships between perceived teacher's autonomy support, effort and physical self-esteem</b></p>	<p>V. Hein, A. Caune (2014)</p>	<p>Quantitative</p>	<p>This text summarizes a study based on self-determination theory that examines the link between autonomy support perceived by physical education teachers and students' self-determined motivation. The study was carried out in Latvia and Estonia among students aged 14 to 16. The results show that teachers' autonomy support is directly linked to students' perceived effort, their satisfaction of the need for autonomy and their motivation. Furthermore, the effect of motivation on perceived effort is partially explained by physical self-esteem. In summary, teachers' autonomy support plays an essential role in students' perception of effort and physical self-esteem, by promoting the satisfaction of the need for autonomy and motivation.</p>

<p><b>Dynamiques différentielles des interactions didactiques selon le genre en EPS. Le cas de l'attaque en volleyball en seconde.</b></p> <p><b>(Differential dynamics of didactic interactions according to gender in PE. The case of attacking volleyball in the second year of secondary school.)</b></p>	<p>I. Verscheure, C. Amade-Escot (2004)</p>	<p>Qualitative</p>	<p>This study examines the differences between girls and boys in learning volleyball in high school using didactics concepts. It analyzes the interactions between the teacher and the students, focusing on the construction of attacks. The results reveal that sex differences are influenced by factors such as context and attitudes towards physical activity. The teacher's attitude, which encourages autonomy, promotes the development of skills such as self-organization and decision-making, but it must also provide appropriate support to ensure the success of students in their projects and activities.</p>
<p><b>Attentes de motivation et comportements différenciés de l'enseignant d'Éducation Physique et Sportive à l'égard de ses élèves : une étude en contexte naturel d'enseignement.</b></p> <p><b>(Motivational expectations and differentiated behaviours of Physical Education and Sport teachers towards their students: a study in a natural teaching context.)</b></p>	<p>P. Sarrazin &amp; al. (2009)</p>	<p>Quantitative</p>	<p>The objective of this study was to analyze the expectations of a teacher in physical and sports education towards his students and to understand how these pre-existing expectations influence the way in which PE lessons are taught. Results indicate that positive teacher expectations are related to a technical approach and a teaching style that encourages student autonomy, while negative expectations are associated with negative affective feedback and a controlling teaching style. These factors play a critical role in the Pygmalion effect in physical education, where teacher expectations can influence student performance. In conclusion, this study highlights the importance of teacher expectations and teaching style in PE, as well as their potential impact on student motivation and performance.</p>
<p><b>Research Digest Motivating Kids in Physical Activity</b></p>	<p>M. Weis (2000)</p>	<p>Literature review</p>	<p>This article examines the factors that influence children's engagement in physical activity, highlighting the importance of self-esteem, social support, enjoyment and the action itself. Evidence shows that children who are confident in their physical abilities are more likely to enjoy physical activity in the long term, highlighting the importance of creating enjoyable experiences to encourage them and improve their health. Children's engagement in sport is also influenced by other elements such as enjoyment, engagement options, social pressures and participation opportunities. Adults, especially teachers, play a key role in building physical skills, self-esteem and enjoyment, which promotes physical activity. Recommended intervention strategies include creating appropriate challenges, promoting a motivating environment, emphasizing the fun side of physical activity and developing children's autonomy.</p>
<p><b>Les éventuelles différences d'interaction verbale entre l'enseignant d'EPS et ses élèves de 6ème, en fonction du sexe des élèves, dans l'activité handball</b></p> <p><b>(Possible differences in verbal interaction between PE teachers and their 6th year students, depending on the gender of the students, in the handball activity)</b></p>	<p>C. Levrey (2018)</p>	<p>Qualitative</p>	<p>This text discusses the differences between interactions between teachers and students based on the gender of the students. He references previous research that has shown that boys receive more interaction, information and criticism from teachers than girls. The study in question looks at the verbal interactions observed between a male teacher and a female teacher with a group of students made up of 25 girls and 16 boys during two sessions on handball. The results of the study indicate that girls receive more praise from teachers during handball activity, while boys receive more criticism.</p>

<p><b>Psychological Needs and the Quality of Student Engagement in Physical Education: Teachers as Key Facilitators</b></p>	<p>T. Curran &amp; M. Standage (2017)</p>	<p>Literature review</p>	<p>This study uses self-determination theory (SDT) to explain students' engagement and disaffection in physical education. According to SDT, satisfaction of basic psychological needs such as autonomy, competence, and relatedness is essential for optimal motivation and well-being. Teachers and classroom structures are evaluated based on their ability to meet these needs. A “student-teacher dialectic” model is presented to integrate existing literature. Practical recommendations for promoting student engagement in physical education are provided, as well as results from previous interventions in the school context.</p>
<p><b>The impact of nonlinear pedagogy on physical education teacher education</b></p>	<p>B. Moy &amp; al. (2015)</p>	<p>Quantitative</p>	<p>The study aimed to determine whether obstacle-based learning (CLA), based on non-linear pedagogy (NLP), increases self-motivated motivation by meeting basic psychological needs. Two courses, one in CLA and the other in the traditional method, were given by an experienced teacher-researcher to 54 physical education students. After each course, participants answered a questionnaire assessing their motivation and psychological needs. The results showed that the CLA courses generated greater motivation and better satisfied the psychological needs of the participants, acting on the sequence of the courses. In summary, using NLP in CLA-based learning design can help teachers create a more motivating learning environment.</p>
<p><b>Théorie de l'autodétermination dans le domaine du sport et de l'exercice physique</b>  (Theory of self-determination in sport and physical exercise)</p>	<p>S. Biddle &amp; al. (2001)</p>	<p>Literature review</p>	<p>This article examines the key concepts of self-determination theory in the context of physical activity and presents the three main subtheories of this approach: cognitive appraisal theory, organismic integration theory and theory of causal orientations. The article challenges the simplistic view of motivation as intrinsic or extrinsic, emphasizing that similar motives can lead to different behavioral regulations. It highlights the diversity of measures used in studies on physical activity, confirming the existence of a complex continuum between the different concepts of the theory. The article proposes an integrative model and highlights the importance of motivational concepts to better understand motivation in the context of physical activity, while recognizing that much work remains to be done in this area.</p>
<p><b>The influence of teacher-student communication on the importance of Physical education</b></p>	<p>C. Krahe &amp; al. (2020)</p>	<p>Quantitative</p>	<p>The study focuses on the impact of communication between teachers and students in physical education classes during adolescence. The objective is to understand how these interactions influence the perception of the importance of physical education among students aged 10 to 16. The results show that teacher-student communication has a significant effect on the importance attributed to physical education. The most important dimensions of communication are understanding, friendliness and control. These findings are at odds with other studies that suggest that teaching methods that encourage students' autonomy are more effective in boosting their intrinsic motivation toward physical activity. All in all, teacher-student communication plays a vital role in student engagement in physical education, which has important implications for promoting an active lifestyle among adolescents.</p>

<p><b>Estime de soi et apprentissages scolaires : de la revalorisation à la gestion de la classe</b></p> <p><b>(Self-esteem and learning at school: from self-esteem to classroom management)</b></p>	<p>A. Cockenpot &amp; M-L. Cartau (2017)</p>	<p>Qualitative</p>	<p>This dissertation examines how students who devalue themselves in class are handled. Using theories on self-esteem in relation to learning, the school environment and teaching behavior as a frame of reference, a teaching practice was analyzed using the course of action method. A case study was conducted to highlight the impact of school climate on self-esteem, identify signs of devaluation among students, and compare the different interactions between teacher and student. The results of this study were then compared with existing research. Next, the concept of school climate was revisited, followed by a discussion of students' self-sabotaging behaviors. Finally, the study looks at the role of error and explored interactions between teacher and student considering the concepts of transfer and countertransference.</p>
<p><b>The importance of teacher–student relationships, as explored through the lens of the NSW Quality Teaching Model</b></p>	<p>L. Liberante (2012)</p>	<p>Qualitative</p>	<p>The text discusses the model of quality teaching and its three key dimensions: intellectual quality, quality of the learning environment and significance. It highlights that these dimensions are interconnected, and that teacher and student engagement is crucial to improving learning. The text emphasizes the importance of gender in learning, highlighting the impact of positive interactions between teachers and students on academic performance. Finally, it highlights the need to understand students' individual needs and adapt teaching activities accordingly to promote in-depth understanding and self-regulation skills. In short, quality teaching is based on these interdependent dimensions and positive engagement between teachers and students.</p>
<p><b>Classroom management and students' self-esteem: Creating positive classrooms</b></p>	<p>Seyithan Demirdag (2015)</p>	<p>Quantitative</p>	<p>This article discusses the emotional and cognitive changes in adolescents in middle school, which can impact their motivation, self-esteem, and academic performance depending on how their teachers manage their classroom. The author highlights the lack of empirical studies on the relationship between students' self-esteem and classroom management in middle school. To fill this gap, they conducted a study with eight teachers and sixty students from an urban middle school. Study data revealed significant differences in both teachers' classroom management by the Self-Ratings of Classroom Management and in students' self-esteem by the Coopersmith Self-Esteem Inventory.</p>
<p><b>Climat motivationnel instauré par l'enseignant et implication des élèves en classe : l'état des recherches</b></p> <p><b>(Motivational climate established by the teacher and pupil involvement in class: the state of research)</b></p>	<p>P. Sarrazin &amp; al. (2006)</p>	<p>Literature review</p>	<p>This article summarizes research on teaching practices and their impact on student motivation, primarily based on theories of achievement motivation and self-determination. The results show that mastery-promoting environments are beneficial, while the effects of competitive environments are mixed. Additionally, students benefit more from a teaching style that encourages their autonomy rather than a more controlling style. However, the application of these principles in the classroom must be careful due to the differences between the real teaching context and laboratory situations, the constraints weighing on teachers, and the methodological limitations of studies based on questionnaires, which calls into question the ecological validity of this research.</p>

<p><b>Effects of Autonomy-Supportive Teaching on Student Learning and Motivation</b></p>	<p>E-M. Furtak &amp; M. Kunter (2012)</p>	<p>Quantitative</p>	<p>Although teaching focused on autonomy has often been associated with student performance, this relationship has not yet been the subject of an in-depth experimental study. This article presents the results of a pre/post experimental study using a control group to evaluate the impact of teaching promoting both procedural and cognitive autonomy on student learning and motivation during a science lesson on movement, as part of a reform in 7th grade.</p>
<p><b>Physical Activity and Situational Motivation in Physical Education: Influence of the Motivational Climate and Perceived Ability</b></p>	<p>L.E. Parish &amp; D.C. Treasure (2003)</p>	<p>Qualitative</p>	<p>This text discusses the influence of perceptions of motivation and personal ability on adolescents' physical activity. The study included 213 boys and 229 girls (12.56 years old), in physical education classes for 3 days. The results show that physical activity declines as students move from sixth to eighth grade, with a steeper decline among girls. Furthermore, students who perceive an educational environment encouraging mastery are more autonomous in their motivation for physical activity, while those who perceive a performance-oriented environment are less autonomous in their motivation. The analysis also showed that gender, perception of personal ability, and mastery climate are important factors in understanding variations in physical activity. It is therefore essential to promote a mastery-oriented educational environment to encourage adolescents' self-determined motivation and engagement in physical activity.</p>
<p><b>L'effet Pygmalion existe-t-il en Education Physique et Sportive ? Influence des attentes des enseignants sur la motivation et la performance des élèves</b></p> <p><b>(Does the Pygmalion effect exist in Physical Education and Sport? The influence of teacher expectations on student motivation and performance)</b></p>	<p>D. Trouilloud &amp; P. Sarrazin (2002)</p>	<p>Quantitative</p>	<p>The objective of the study was to analyze how the expectations of physical education teachers influence the motivation and performance of their students. Three hypotheses were examined: Expectations can create self-fulfilling prophecies, perceptual biases, or simply predict performance. The study also sought to understand the role of student motivation in this process. The results of the study, carried out with 124 students and 7 teachers during PE swimming lessons, showed that teachers' expectations had a limited effect on student performance. There was no evidence of perceptual biases, but teacher expectations were accurate in predicting performance. Furthermore, student motivation, in terms of perceived competence and self-determination, seemed to play an intermediary role in confirming teachers' expectations.</p>
<p><b>Interactions Teachers/Pupils EPS: Variations by Gender and Gender.</b></p>	<p>S. Couchot-Schiex &amp; B. Trottin (2005)</p>	<p>Quantitative</p>	<p>This study examines how teachers interact with students, particularly girls and boys, when teaching Handstand in middle school gymnastics. It builds on previous research that has shown that school can contribute to creating gender inequalities. The sample included eight PE teachers, equally divided between men and women, as well as 176 eighth grade students. The analysis of teachers' communications (their organization, their encouragement, discipline and pedagogical content) reveals significant differences linked to the sex of the teachers. Context plays a critical role in these interactions, influencing both the teacher's behavior and the students' reactions. These two factors interact to shape teacher-student interactions during learning activities.</p>

<p><b>The Roles of Perceived Teacher Support, Motivational Climate, and Psychological Need Satisfaction in Students' Physical Education Motivation</b></p>	<p>A.E. Cox &amp; L. Williams (2008)</p>	<p>Quantitative</p>	<p>This study examines the factors that influence student motivation in physical education. She finds that the perception of competence, autonomy and the mastery climate have positive effects on motivation, while the performance climate has a negative effect. It explores the role of perceived teacher support and interpersonal relationships. The results show that perceived competence, autonomy, and relatedness act as mediators between perceived teacher support and self-determined motivation, while mastery climate has a direct relationship with self-determined motivation. In sum, the study highlights the importance of teacher support, mastery climate and relationships in motivating students in physical education.</p>
<p><b>Interaction et apprentissage (Interaction and learning)</b></p>	<p>F. Darnis (2010)</p>	<p>Literature review</p>	<p>This book examines the results of studies on learning within social interactions, whether between students or between adults and children. It also discusses intervention methods. It is based on numerous concrete examples from the school context, in particular physical activities, as well as sports training. Emphasis is placed on the crucial role of socio-cognitive processes in the development of motor skills.</p>
<p><b>Relation entre les stéréotypes sexuels associés aux pratiques sportives et la motivation autodéterminée des élèves en éducation physique et sportive</b></p> <p><b>(The relationship between gender stereotypes associated with sporting activities and students' self-determined motivation in physical education and sport)</b></p>	<p>A. Chalabaev &amp; P. Sarrazin (2009)</p>	<p>Quantitative</p>	<p>This study examines the relationships between the stereotypical image linked to the masculine or feminine genders in the context of sporting activities and the self-determined motivation of students in Physical Education and Sports classes. It also examines the role of two factors, namely the perception of competence as a mediator and the level of endorsement of the stereotype as a modulator in this relationship. A total of 178 middle school students participated in this study by completing a questionnaire during their participation in a cycle of sporting activity, either football or dance. Analyzes reveal that students are more self-determinedly motivated when they engage in a sporting activity that matches the gender stereotypes associated with their sex, compared to activities that do not. This relationship is influenced by the perception of their own competence, although the student's adherence to the stereotype does not have a modulating effect.</p>
<p><b>L'estime de soi : une controverse éducative</b></p> <p><b>(Self-esteem: an educational controversy)</b></p>	<p>J-P. Famose &amp; J. Bertsch (2009)</p>	<p>Literature review</p>	<p>The text addresses the issue of self-esteem as a source of personal and social problems, a subject widely discussed by education and mental health professionals. He points out that many educational programs around the world currently aim to improve self-esteem. However, there is debate and controversy regarding this unique approach. Some researchers instead recommend focusing on developing skills in socially important areas, believing that this will boost self-esteem and bring about improvements in individuals' lives. The text also mentions a unique textbook that offers a critical analysis of different perspectives and presents an alternative explanation based on evolutionary psychology, a new scientific paradigm combining psychology and theories of evolution. The text explores debates around self-esteem and presents an alternative perspective based on evolutionary psychology.</p>

<p><b>The Motivating Role of Positive Feedback in Sport and Physical Education: Evidence for a Motivational Model</b></p>	<p>A. Mouratidis &amp; al. (2008)</p>	<p>Quantitative</p>	<p>This study, based on Deci and Ryan's (2000) self-determination theory, explores how positive feedback on skills influences well-being, performance, and participation intention. Two studies were carried out, one with middle school students in physical education and the other with talented sports students.</p> <p>In the first study, positive feedback was associated with skill satisfaction, promoting vitality and participation intention through autonomous motivation, but without improving performance. In the second study, autonomous motivation was identified as a mediator between skill satisfaction and well-being, while another form of motivation was identified as a mediator between skill satisfaction, well-being, and performance.</p> <p>These studies highlight the importance of positive feedback on skills to encourage satisfaction, autonomous motivation, well-being, and participation intention, especially in the areas of sport and physical education.</p>
<p><b>L'estime de soi chez les filles dans un contexte mixte en éducation physique</b></p> <p><b>(Girls' self-esteem in a mixed physical education context)</b></p>	<p>S. Clément (2012)</p>	<p>Quantitative</p>	<p>This Thesis explores the issue of school diversity in physical education and its impact on the self-esteem of adolescent girls. It addresses the history of school diversity, highlighting the differences in girls' involvement depending on their school environment. The theoretical framework is based on self-esteem, focusing on the perception of sporting competence. The results of the questionnaires indicate that self-esteem evolves depending on the type of physical activity, with different impacts depending on the initial level of perceived sporting competence.</p>
<p><b>Perceived Feedback and Motivation in Physical Education and Physical Activity</b></p>	<p>V. Hein &amp; A. Koka (2007)</p>	<p>Literature review</p>	<p>This article explores how to foster student motivation by using peer feedback to enhance student autonomy in physical education. In a case study with 14 students from a Danish sports high school, peer feedback was used during a volleyball lesson. The results of this study, based on qualitative data such as observations, interviews, and student logs, highlight that peer feedback stimulates student engagement in physical activity and maintains their learning. and their volleyball skills. However, further research is needed to evaluate whether these results can be applied to other contexts.</p>
<p><b>L'adaptation des contenus en EPS aux besoins et intérêts des filles favorise-t-elle un meilleur engagement et un regain de motivation ?</b></p> <p><b>(Does adapting PE content to the needs and interests of girls encourage greater commitment and renewed motivation?)</b></p>	<p>M. Christen &amp; L. Diallo (2012)</p>	<p>Quantitative</p>	<p>The study analyzes how a hip-hop dance sequence affects the motivation and engagement of 7th grade students in physical education and sports. Conducted in five secondary school classes, the study revealed that girls showed a strong interest in new physical activities, particularly those popular outside of school. They are more motivated than boys and prefer outdoor activities, ball games and physical expression. Hip-hop dancing particularly appealed to girls because of the music, group activity and partner work. Finally, the study demonstrates that the choice of body activities does not have a significant impact on students' body satisfaction. In conclusion, it is essential to adapt PE programs to girls' interests to strengthen their motivation.</p>

<p><b>Relation Between Teachers' Early Expectations and Students' Later Perceived Competence in Physical Education Classes: Autonomy-Supportive Climate as a Moderator</b></p>	<p>D. Trouilloud &amp; al. (2006)</p>	<p>Quantitative</p>	<p>The study examines how teachers' expectations at the beginning of the school year influence students' perceptions of competence, considering the motivational climate created by teachers during naturalistic physical education lessons. Data were collected over a period of one year from 421 students and 22 teachers from 10 French high schools. The results show that when teachers have positive expectations, this influences how students perceive their own competence, especially when the motivational climate in the classroom does not support student autonomy. In summary, positive teacher expectations impact students' perceptions of competence, especially when autonomy support is limited in the classroom, with important implications for future research and educational practices.</p>
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