

THE CRITICAL THINKING IN PHYSICAL EDUCATION AND SPORTS TEACHERS

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ABSTRACT. The inner world of the teacher of physical education and sports has become a determining variable in the understanding and justification of the pedagogical act of these professionals. Thus, the critical thinking of these social actors is presented as a privileged indicator likely to reflect not only the mental processes at stake by these teaching professionals but also the nature of the issues on which they deliberate the most often during the teaching-process learning. The present study tries, first, to describe the form and substance of critical thinking deployed by physical education and sports teachers (PES), then to analyze the relationship of this form of thinking and the teaching process.

Keywords: *Critical Thinking, PHE Teachers, Professionalism inking to the professional status of these teachers.*

INTRODUCTION

In light of the current modernization of information and the terrible technological development that the world is witnessing in all fields in general and in the field of educational curricula in particular, we note that the educational process has become a prominent place among the priorities of this development and this is an issue of interest to the issue of preparing professors and studying their teaching competencies at the present time due to the importance of the role of Professor Guy of the teaching process (Benguenab, 2021), where this preparation

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requires a special priority to demonstrate their abilities, skills and the extent to which they use the art of teaching from developments and changes (Haiman, 2017). This movement has become an effective force in the reality of the wheel of the educational process and in the preparation and preparation of the future teacher and raise his career level, and this process requires a broad and comprehensive view where the necessary competencies are determined for the teacher of sports education to exercise his role to the fullest (Atalah, 2001). Since the change is an important, objective and orderly process, the professor within his class and during his class has been given full freedom to act using what he sees as appropriate educational methods to achieve the technical and scientific competencies required by the good conduct of the course, in addition to the opinions and beliefs that accompany the subject of the lesson. This enabled the professor to employ competencies consistent with his personality and abilities.

Criticism of teachers' unprofessionalism and lack of competence is growing (Gauthier, 1997). This uncomfortable situation in which teachers find themselves invites, for some time now, all school stakeholders to look in depth at the reasons for this state of affairs and explore new avenues to better arm teachers in initial training (Daniel & Cormack, 2001) or in continuous training (Carlier & Paquay, 2000) in order to properly accomplish their task and help the School meet the challenges it faces. However, while the behavioral paradigm has inspired researchers and education professionals for more than a quarter of a century to identify behavioural indicators related to teacher competence and effectiveness, the cognitive-constructivist approach presents itself today as a promising and unavoidable alternative (Crum, 1995; Durand, 1996a, 1996b; Florence, Brunelle & Carlier, 1998; Rémigny, 1998; Tsangaridou & O'Sullivan, 1994, Tsangaridou & Siedentop, 1995). Thus, the focus in this new approach is placed, among other things, on the reflexivity of the teacher and the teacher when they perform their pedagogical act. Researchers and educators in education are showing great interest in taking into account, from now on, the cognitive processes of teachers that are underlying the behaviours observed in the classroom.

The inner world of the teacher and the teacher has become a determining variable in the understanding and justification of the pedagogical act of these professionals. Thus, the critical thinking of these social actors is presented as a privileged indicator likely to make account only of the mental processes at stake by these teaching professionals but also of the nature of the questions on which they deliberate the most often in their professional practice (Gohier et al., 1999; Sebren, 1992; Tsangaridou & O'Sullivan, 1994).

Although Kpazai and (Attikleme, 2012) indicated the existence of three broad categories of conceptualization of critical thinking in education and training, only the first two conceptions of this form of thinking will be conveyed in this text. The first conception, that put forward by philosophers, conceives critical thinking as a form of intelligence, a formal or informal argumentative logic, an intellectual capacity deployed by any individual who is concerned to scrutinize the strengths and weaknesses of an argument or the results of a thinking activity. John Dewey, on whom some of the critical thinking work is based, used in the early twentieth century in *How we think* (Reissue, 1933), the expression of reflexive thought in opposition to a mechanical and spontaneous form of thought. For Dewey, spontaneous thinking appears when an individual agrees to establish an opinion without trying to establish the basis and without trying to look for reasons that support it. Conversely, reflexive or critical thinking, according to (Dewey,1933), is considered to be the result of careful, prolonged, precise examination of a given belief or hypothetical form of knowledge; review in light of the arguments that support them and the conclusions reached. In this line of thinking, (Ennis, 1985) conceives of critical thinking as a form of thinking that causes a person to believe (or not believe) in a certain thing, not because of himself, but because another thing testifies to it, is the evidence or proof, and is the basis of belief. McPeck (1981) defines critical thinking as “the ability and propensity to engage in activity with reflective skepticism.” For this author, reflexive skepticism aims to establish the true reasons for various beliefs, these adequate reasons depending on epistemological norms. Siegel (1988) agrees by defining the critical thinker as an individual who thinks and acts appropriately for reasons (Paul,1992). Emphasizes that critical thinking is self-guided, disciplined thinking and represents the perfection of thinking appropriate to a certain mode or field of thought. The author distinguishes two forms of critical thinking: 1) weak critical thinking, which is self-centered and therefore serves the interests of a particular individual or group, 2) strong critical thinking, which is sociocentric and takes into account the interests of a diversity of people and has, moreover, integrated into critical thinking skills the values of truth, rationality, autonomy and personal knowledge. Finally, for (Lipman, 1991), critical thinking is a thought that helps an individual to make good judgment, because it is governed by criteria, self-correcting and sensitive to a context. All in all, in the view of philosophers of education, critical thinking is perceived as a process of investigation whose purpose is to explore a situation, a phenomenon, a question or a problem. The product of thought can be a conclusion or a hypothesis and its justification. The second conception of critical thinking is that which comes from psychology. For cognitive psychologists, critical thinking is seen as a cognitive or mental process of problem-solving and decision-making. What seems important in critical thinking

research among cognitive psychologists such as Beyer (1987), Brookfield (1987) and Sternberg (1985), it is the identification of the cognitive operations used by an individual when he is faced with a problematic situation. Critical thinking, for the majority of these psychologists, conveys the idea of an active cognitive process that is triggered by a disruptive event and follows at least five steps: 1 (perceived cognitive dissonance), 2 (information search), 3 (linking new elements and dissonance), 4 (formulating and evaluating a new personal theory), 5 (resolving dissonance).

While these educational researchers and trainers promote the importance of this teacher-centred approach to the teaching process-learning, few empirical investigations were interested in the description of critical thinking with regard to the form and substance of this thought deployed in educational interaction in the field of physical education. This would help to understand the real manifestations of critical thinking in the practice of teachers. In this study, using the theories of praxeologists that teachers demonstrate critical thinking (Argyris, 1995; Argyris & Schön, 1976; Schön, 1994, 1996) during their professional act, we seek to identify the characteristics of critical thinking in the practice of physical educators. The questions the study attempts to answer are:

- 1) what is the form of critical thinking in the educational practice of physical education and sports teachers?
- 2) What is the purpose (or focus) of the critical thinking of these teachers in the teaching-learning process?

Critical thinking

1) the presence of criteria, 2) sensitivity to context, and 3) self-correction of thought.

For Lipman (1991, 1995), critical thinking is governed by criteria that are rules or principles that underlie judgment. Thus, the teacher does not make an intuitive and free decision. Criteria are therefore essential to critical thinking because they give it weight. As for the second characteristic relating to "sensitivity to context", Lipman (1991, 1995) emphasizes the idea that critical thinking is thinking adaptable to an environment and its main variables. Here the teacher "critical thinker" recognizes, in fact, that the different contexts require different applications of rules, principles and educational acts. Finally, the «autocorrective» character of critical thinking conveys the idea that critical thinking is not rigid but flexible because it is sensitive to its own limits and inclined to correct its mistakes. For the teacher «critical thinker», it is not a weakness to recognize his fallibility and to engage in a conscious modification of his point of view, of the education offered to students for improvement.

Van Manen's levels of reflexivity. The levels of reflexivity of Van Manen (1977) which are three in number (technical, practical and critical) are situated on an evolutionary scale of the reflexive capacity of an individual ranging from the technical aspect (level 1) to the critical aspect (level 3) from rationality to hermeneutics or practicality (level 2). In technical reflexivity (level 1), the thought of the teacher and the teacher are polarized on a questioning limiting to the micro-aspects of the teaching-learning process. Teacher reflection focuses on the best means or appropriate educational strategies to implement to solve an identified pedagogical problem. The main concern of the teacher, at this level of reflexivity, concerns the themes of classroom effectiveness, and this, demonstrated through measurable results. The aims and objectives of teaching are not investigated, nor are their long-term consequences. As for hermeneutic or practical reflexivity (level 2), it encourages teachers to take into account individual and cultural experiences, perceptions, meanings, prejudices, etc., with the aim of guiding or guiding practical action. At this level, attention is focused on a comprehensive interpretation of both the nature and quality of the educational experience and decision-making. The explanation of an event is based on pedagogical principles and also includes contextual factors such as student characteristics, as well as community factors. Reflexivity, at this level, therefore requires contextualization of teaching, local and institutional, on the part of teachers. Here they are expected to reflect on the practical choices they make in teaching. How are these choices, for example, the result of institutional, social and historical influences or constraints? What is implicit in their teaching practices as well as in the norms of the institution? In short, this level of reflection goes beyond the questions of effectiveness associated with particular purposes; it tends towards a thoughtful examination of the influence of the context on learning and teaching and towards a valuable study of competing educational objectives. Finally for Van Manen (1977), the third level of reflexivity, critical reflexivity considers a deliberate reflexivity in educational practice. Here reflective practice implies the presence of a value system that leads to a constant critique of power, institution and repressive forms of authority. At this level, the questioning seeks to combat the repressive distortions in teaching and learning. We are in the presence of an environment without repressive dominance between participants in the educational process. The explanation of a phenomenon or educational situation takes into account political or ethical aspects. It is the highest level of reflexivity, the ideal of rationality that the promotion of educational purposes pursues in self-determination, in the community and in the basic principles of justice, equality and freedom. It is at this level of reflexivity that a teacher can become, according to the expression of Giroux (1988), a «transforming intellectual», that is to say, able to examine the ways in which schooling, in general, and his personal pedagogical practice, more specifically, contribute or fail

to promote a human and just society. This level of reflexivity is therefore expected to enable teachers to transcend everyday experience, that they can imagine what teaching should be without simply accepting it as it is and that these images or projections can help shape their practice and reflection on practice. Thus, the pedagogy of physical and sports education in a critical perspective must lead teachers to question and analyze their practices, and to consider educational alternatives within a political and ethical framework.

METHODOLOGY

Participants

The research strategy

We preferred the qualitative approach because of the methodological limitations of quantitative approaches on the issue. To this end, Van der Maren (1996) argues that quantitative data are certainly essential, particularly for measuring certain behaviours, but they remain insufficient in education because they cannot explain the reasons for the emission of behaviours. The author goes on to say that the qualitative approach allows a more in-depth analysis of the social and individual processes in which choices or decisions are inserted (p.56)

A research strategy focused on the analysis of multiple cases

More and more, in order to better describe, better understand and better explain a phenomenon, qualitative researchers work at the scale of several sites (multisite or multi-case). For Huberman and Miles (1991), the researchers thus increase the generalizability of the results and, consequently, prove that the events and processes observed are not purely idiosyncratic. Obviously, this methodological approach (multisite or multiple cases) gives greater explanatory power of a phenomenon such as it occurs in various environments or contexts than in an approach monosite (or in a case study). Indeed, the fact of choosing several sites (several teachers practicing in various professional environments), gives us a very broad and real portrait of critical thinking.

Data collection and analysis strategies

The preferred analysis approach is that of qualitative analysis in the form of content analysis of the data collected. Three steps were observed by the principal investigator to obtain this corpus: 1) observation of three teaching sessions for each participant in the study. These observed teaching sessions were all filmed on video. 2) A semi-structured interview of sixty to ninety minutes, using the stimulated recall technique, to gain access to the cognitive

processes underlying certain behaviours observed in the classroom. The semi-structured interview that was recorded on videotape took place no later than two days after the teaching. 3) Full transcript of all interviews and coding of verbatims obtained. This coding was done using the frame of reference presented in section 2 and which takes into account the characteristics of critical thinking according to Lipman (1991, 1995) and the levels of reflexivity in teaching of Van Manen (1977).

Semi-structured interviews were based on an interview grid that included questions about the characteristics of critical thinking (the form) and some that relate to the objects of critical thinking. Here are examples of questions related to the characteristics of thinking: 1) What are the limits of this way of teaching or this way of proceeding? 2) Do you often or sometimes correct yourself as a result of the students' motor skills? 3) Why did you do this in this context when earlier you had done this? 4) At this very moment, why did you do this or did you use this? 5) On what criteria do you base your pedagogical actions here? 6) Why did you do this, what are your reasons, your support? Questions 1 and 2 refer to manifestations of self-correction of critical thinking; Questions 3 and 4 refers to "context sensitivity" while questions 5 and 6 refer to "criteria-based" critical thinking.

As for information about the objects (or background) of critical thinking, here are some of the questions asked: 1) What were you thinking when you did this? What did you have in mind? 2) What is for you the most important value of physical education that you sought here, through your pedagogical act?

Each of the verbatims collected from the three interviews relating to the three observed teachings was cut out in order to retain the units containing information likely to be classified on the one hand in one of the characteristics of critical thinking according to Lipman (1991, 1995), and on the other hand, in one of the categories of reflexivity as conceived by Van Manen (1977).

In order to validate the data processing, we submitted a number of coded verbatims to the appreciation of a qualitative researcher and expert in the field of critical thinking. The results were compared between the principal coder and the researcher.

This is very satisfactory if we consider the 85% acceptability threshold proposed by Huberman and Miles (1991).

The participants in the research

In an effort to have a wide range of manifestations of critical thinking in interactive practice among physical education and sports teachers, our sample was drawn from a "contrasted snowball" approach (Van der Maren, 1996). This approach, according to this author, consists in investigating the same population

(here teachers in physical education and sports having at least a baccalaureate in physical education teaching) but being a priori different (age, gender, years of experience, professional culture, etc.) so as to be sensitive to dispersion. Which, in our opinion, will allow to have a better knowledge of the studied phenomenon.

Thus, we worked with two physical education and sports teachers, both male. However, the two do not teach in the same school order: one at the primary level (B1) and the other at the secondary level (A1). If the primary school teacher has eight years of experience and is in a public school, the secondary school teacher also has eight years of experience but in a private institution. Both are from the urban community of Montreal to Quebec, and were chosen on the basis of their volunteerism and availability.

More specifically, the data analysis perspective is one of multiple case studies. Each of the two teachers, in fact, represents a specific case in this research.

RESULTS

Results for Primary School Teacher Case: B1

The form of thought of B1

The following table presents a synthesis of the characteristics of the thought (seen from the angle of its form) of the teacher B1 during the realization of the three observed teachings.

Table 1. The thought form of B1

	<i>Self-correcting thinking</i>	<i>Contextually sensitive thinking</i>	<i>Thinking based on criteria</i>
Teaching 1	2 units of direction on 4	1 unit of direction on 4	1 unit of direction on 4
Teaching 2	4 sense units on 13	7 sense units on 13	2 sense units on 13
Teaching 3	0 unit of sense on 1	0 unit of sense on 1	1 unit of sense on 1
Total	6 sense units on 18	8 sense units on 18	4 sense units on 18

With regard to the overall data of the teacher's thought B1 (see Table 1), it can be said that the mode of thought used by this teacher, during the interactive phase of the teaching-learning process, is of a critical type in its form. Indeed, out of a total of 18 units of meaning coded in relation to the characteristics of

critical thinking put forward by Lipman (1991, 1995), 30% relate to self-correction, 44% to sensitivity to context and 26% to the underlying criteria the reflexivity of the teacher B1.

The autocorrection character of the thought of B1 is manifested by the adoption, by this teacher, of a not rigid but flexible thought. He shows sensitivity to the limits of his own thinking and is inclined to correct it and/or try another alternative, unplanned, with his students. The two verbatims below are examples of the autocorrective character of B1's thinking.

But here it works so I take advantage of it. For all kinds of reasons it may not work. But here with this 4th year, it's a very interesting age to do with them. I find that very interesting. There are things sometimes I have to go faster but then I took time because I had things to say and the discussion went in the direction I wanted so we continued. For example, when I saw the notion of everywhere... I come back at that time, I take the word of the child so that they understand. But there was a kind of parenthesis where we veered on the rules of movement to one, that I would have done after and not there but since a child to express the notion of everywhere and integrated it so we continued on this. But in this time I always follow up after. I return to the important point I wanted to clarify, namely the notion of space occupancy (B1e2, p.4).

As for the character of the sensitivity to the context, the teacher B1 manifests during the interaction with his pupils a mode of thought which is influenced by variables specific to the place of its intervention (school, school system), at the time of its intervention (beginning or end of a teaching cycle), to the nature of the activity practiced as a means of education (Kinball, basketball, etc.) and to the psycho-psychological characteristics social-motor skills of the students with whom he interacts (their level of comfort with physical activity, level of education, emotional and cognitive characteristics, etc.). The excerpt below gives us a good illustration of the sensitivity to context.

I think a teacher has to adapt. I think that in physical education it is even more true because as soon as you change your environment, everything changes. I teach basketball here, but the gym gives me constraints while if I go to a bigger gym then it's another thing. So I always adapt the rules because there my gym is lower, if I go to another gym everything changes. Yes the pedagogy is still oddly influenced by your surrounding environment. And so you change because if my students can't play as a team, for example, then how I'm going to teach it. Because there's rooms where I can't play basketball as a team when what am I doing *Do I teach it?* Then my pedagogy will take another form. I taught it here more in game situations and I correct them but there I will explain more and then we will do educational. So this is a completely different approach. (B1e1, p.6).

The thought of the teacher B1, during the interaction with his students, is also a thought based on criteria, that is to say on reasons that underlie his educational practice. When reading the verbatims of this teacher, the nature of these criteria is bidirectional: a criterion being more technical, because relating to the quality of the motor response given to an educational task and a second, which is more of the socio-ethical order (general education of pupils, diversity in working groups). The extracts of the verbatims of B1, given below, suggest the presence of criteria in the thought of the teacher B1.

Yes, I have criteria! When I evaluate, it's to see the exercise versus what I showed. Is the exercise well done? Is it well done? Well compared well move. Did the one who won the point really hit the knee in this case? Is the achievement correct? Has he done the right thing? Is he moving? If not, is he able to avoid it or not? Because when we talk about opposition it is the art of avoiding, of foiling or avoiding the opponent. In this case, we try to touch or not to be touched. The task is this. He does or does not do it. Is it well done, yes or no. Those are the criteria I use, namely travel and pretending. Am I able to touch or avoid? (B1e1, p.8).

That is to say, I am still a girl-boy. That is a principle I established earlier this year. If at first you choose a girl, your second choice must be a boy, then the third a girl, etc. They know it but the problem is that when they make their choice they forget in the long run if their previous choice was a girl or a boy, so I remind them every time. It must always be mixed, alternated girl-boy. And also it avoids wars, you know at that age, for me there is no difference between girl or boy. It has to be mixed in teams always. (B1e2, p.2).

The essence of the teacher's thought B1

What is the object of the teacher's thinking during the interactive phase with his students? A synthesis of B1's thinking is presented in Table 2 below.

Table 2. The thought form of B1

	<i>Technical reflexivity</i>	<i>Practical reflexivity</i>	<i>Critical reflexivity</i>
Teaching 1	5 sense units on 11	6 sense units on 11	0 sense units on 11
Teaching 2	7 sense units on 26	8 sense units on 26	11 sense units on 26
Teaching 3	6 sense units on 8	2 sense units on 8	0 sense units on 8
Total	18 sense units on 45	16 sense units on 45	11 sense units on 45

The data (Table 2) on the background of B1's thinking reveal that, on the whole, this teacher demonstrates a thinking oriented towards several objects of reflection in his educational practice. Table 2 indicates, in fact, that 40% of the objects of his thought in interaction are of a technical nature, 36% of a practical nature and 24% of a critical nature.

The technical reflexivity of the teacher B1 relates essentially to the pedagogical aspects of the teaching-learning process, either to the effectiveness of his teaching act or that relating to the learning of students. Elements of class-group management and learning climate are also part of this order of reflexivity in B1. This type of thought of the teacher is translated in the verbatims below:

Of course, I see the task being done. Is it done right?

Is it badly done? Is there something to correct then I will go see them. But this one especially, it is one of the educational which is the simplest but already at the beginning there were two to three additional questions and I thought I should intervene during the practice. I make sure that the realization is done correctly because I know that by making a quick demonstration as I did (so as not to waste the maximum time) one can always have things to correct, actions to correct and perhaps to show. Some do not understand, some do not move. Some do not understand exactly what needs to be done, we can see. Do they know exactly what to do, which is to move? If someone attacks me, that is to say, comes towards me, can I move? Is there anyone who realizes it? See that, see the difficulties of each other, see if this activity is at their level. Do students understand the concept of opposing or attacking an opponent Do they understand? I make sure that this task is well done to see if it works. (B1e1, p.7).

As for the reflexivity of hermeneutic or practical order, the teacher B1 expresses the concern to take into account, during his teachings, either theoretical pedagogical principles (for example, the importance of pupils' cognitive involvement in their learning, communication in pedagogy) or contextual factors (the time allocated to teaching, the specificity of the teaching environment, the specificity of the educational activity) or either the student characteristics (past experiences of students, emotional and cognitive characteristics of students).

Again, we are in a physical education class, we are here to learn. When I am the teacher I do not referee in the sense of referee of a BB match outside the school. We are in a phase of education, once again, of learning and not of sports competition. This is what drives me: to set up situations and adopt behaviours so that all students learn (B1e2, p.7).

Finally, the B1 teacher expresses a thought incorporating the critical (or politico-ethical) questions of his educational intervention. The analysis of this teacher's verbatims shows that he is concerned, in his teaching, with equity, justice and freedom in his class.

You've seen Grades 6 play basketball. Basketball league is mixed, Grades 5 and 6. God knows there are gaps. I will have children as young as 11 and others as young as 13. The gap is big but the teams will be made equally, it is very important. We are not here to make champions, but we are here to give everyone, equally, the opportunity to invest and learn. This is very, very important (B1e2, p.2)

Yes, that's right, because it's unfair to the receiving team. Do we agree? Because if you say the color of the team that receives after hitting, their reaction speed is decreased, it penalizes them and it is unfair. That's the idea. So as an impact, it's a huge impact. And I have problems with this kind of behavior in managing my group in this game. (B1e2, p.6).

The form of the teacher's thought A1

Table 3, below, presents the synthesis of the form of thought of the teacher A1 during the teaching-learning process of the three observed teachings.

Table 3. The thought form of A1

	<i>Self-correcting thinking</i>	<i>Thinking sensitive to context</i>	<i>Thinking based on criteria</i>
Teaching 1	5 sense units on 12	5 sense units on 12	2 sense units on 12
Teaching 2	5 sense units on 13	6 sense units on 13	2 sense units on 13
Teaching 3	6 sense units on 10	2 sense units on 10	2 sense units on 10
Total	16 sense units on 35	13 sense units on 35	6 sense units on 35

Table 3 shows that the three characteristics of critical thinking according to Lipman (1991, 1995) are present in A1. Indeed, out of a total of 35 informational units of the form of critical thinking, 46% of these units relate to the character autocorrection, 37% to the sensitivity to the context while only 17% of these units of meaning indicate the criteria on which the teacher's thinking is based. We can say that at the level of form, at least, this teacher demonstrates critical thinking during his teachings. However, we find that the (criteria-based) character has a low percentage. Below are examples of verbatims illustrating respectively the characters (autocorrection), sensitivity to context and "based on criteria of the thought of A1.

I did the 5-to-5 situation here, which I hadn't anticipated before, because the initial situation wasn't working. The students couldn't get organized when I thought they were capable. The initial 3-on-3 situation seemed not to allow them to properly deploy the demarcation behaviours I was working on (A1e2, p.2).

The essence of A1's thought

Table 4 below describes the objects of reflection of A1 during the teaching-process-learning.

Table 4. Levels of reflexivity in A1

	<i>Technical reflexivity</i>	<i>Practical reflexivity</i>	<i>Critical reflexivity</i>
Teaching 1	18 sense units on 21	2 sense units on 21	1 sense units on 21
Teaching 2	13 sense units on 15	2 sense units on 15	0 sense units on 15
Teaching 3	6 sense units on 15	8 sense units on 15	1 sense units on 15
Total	37 sense units on 51	sense units on 51	2 sense units on 51

In view of the reflexivity data of A1 mentioned in Table 4, it is plausible to say that in almost all cases, teacher reflection is directed towards concerns about the effectiveness of the teaching process-learning, or towards the technical dimension of this process. Indeed, out of a total of 51 informational units of the level of reflexivity, 72% relate to the technical level of reflection, 24% to the practical level while 4% are directed towards the critical aspect of reflection. The level of critical reflexivity is almost absent in this teacher. Table 4 indicates that there were only 2 units of meaning out of a total of 51. This shows the virtual absence of this level. Below, verbatims illustrating respectively the technical, practical and critical level of A1 thinking.

I need to see what's going on. I need to walk around and I want them to feel my presence, to feel that I look at everyone in the gym because they are stimulated like that. They are engaged in the task when they feel observed (A1e2, p. 7).

By asking my students to do this transfer, I want to be able to get them thinking in order to make good decisions in the game. It can also be making good decisions in another context, for example, analyzing a situation in life, any situation, being able to develop a critical sense (A1e3, p. 7).

DISCUSSIONS

What can we say about the presence of critical thinking in the interactive phase of the teaching-learning process in these two physical education and sports teachers?

First, when we consider the form of critical thinking, we find that all the characteristics of critical thinking as identified by Lipman (1991, 1995) are present. These two teachers, at this level, demonstrate critical thinking in teaching. Indeed, of a total of 53 informational units of the form 44% relate to the character.

What can be said about the object or the substance of teachers' thinking? The data in Tables 2 and 4 reveal that throughout the teaching-learning process, teachers' objects of thought are of various natures. Indeed, out of a total of 96 informational units relating to the objects of thought, 57% of these relate to the first level of reflexivity (technical reflexivity) of Van Manen (1977), 29% to practical reflexivity while only 14% concern only the critical nature of reflexivity. In view of these data, it is plausible to say that these two teachers are mostly focused on the technical dimension of teaching and learning. Indeed, teachers care more about the effectiveness of their teaching and students' motor learning than about the educational aspect of teaching. Secondary (A1) teachers have a much higher score than their primary (B1) counterparts for this level of reflexivity which is technical. The presence of the practical dimension of reflexivity in these teachers suggests that they are also concerned to incorporate in their practice the theoretical principles of pedagogy but also contextual considerations of the teaching-learning process. However, these teachers show very low critical reflexivity (14%). However, this dimension is decisive not only in the construction of the teacher's competence but also in its professionalism and the evolution of society (Ennis & Chen, 1993; Gohier et al., 1999; Tinning, 1995). Indeed, individuals who demonstrate the critical dimension of reflection are people who are aware of social problems and take steps to be real agents of change in society in a better perspective. I am not saying that the goal of sport or physical education is to stem the enormous social and economic problems of the world. Of course, this is ridiculous. Rather I affirm that as teachers and trainers, we have a responsibility to recognize that our professional practice is often involved in larger social problems and that such recognition comes with a moral responsibility to try to change our practice (Tinning, 1995, p. 24). Moreover, with regard to the development of their competence, these people present themselves as true co-constructors of it. Moreover, we must remember that physical and sports education is a school subject and therefore it finds its legitimacy in the purposes pursued by the school. In short, if for Tinning (1995), the school must contribute to a transformation of society then we think that this role is also the task of teachers of physical education and sports.

CONCLUSION

The results obtained suggest that, on the one hand, these two teachers demonstrate the characteristics of a critical thinking in its form, that is, a self-correcting thinking, sensitive to the context, based on criteria and leading to a judgment; and on the other hand, the object or concern of these teachers is almost centered on elements of technical level and elements of practical level. The main object of reflexivity seems to be only at the micro-aspect level of the teaching-learning process (Tsangaridou, 1993). Analysis of the data reveals that these teachers show little attention to the political and ethical role of teaching and learning. This last data challenges us about the professionalism of these teachers if we consider the social role of any professional (Giroux, 1988; Kirk, 1986). Thus, these results suggest that if nowadays the consideration and development of the cognitive process of teachers in physical education is growing (Carlier, Renard & Paquay, 2000; Paré, 1995), it appears necessary and useful for physical education researchers and trainers to go beyond mere reflection (or simple reflective practice, although it is important) to arrive at a critical reflection that incorporates the political and ethical dimensions of teaching-learning. Taking into account the critical dimension of reflexivity in today's world, an indicator of the professionalism of teachers, because this dimension makes them real social actors.

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