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The Development of Critical Thinking Skills during Practical Training: The Perspectives of Pedagogical Supervisors and Sports and Physical Education Trainees

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Abstract

In the Republic of Congo, formal teacher training is comprised of both theoretical and practical components. Theoretical training takes the form of theoretical courses within the training institution itself. On the other hand, practical training takes place in professional settings such as secondary school. The purpose of this comparative study was to identify the conceptions of critical thinking development held by pedagogical supervisors and student trainees. Rooted in a qualitative methodological approach, this research was based on Eric Lavertu's (2013) conceptual approach to the development of critical thinking during internships. Eight (08) pedagogical supervisors and nineteen (19) student-interns voluntarily participated in the study via focus groups. The results revealed a categorization of several didactic-pedagogical devices for the development of student-interns' critical thinking, according to both the pedagogical supervisors and the student-interns themselves. To foster the development of critical thinking in student trainees, the devices mentioned specify that the supervisor must implement a supervisory pedagogical approach anchored in a socio-constructivist

paradigm to accompany the student's development while employing a reflective approach in coaching. In addition, these systems stress the importance of placing the student at the center of their learning, making them a real player in their own development.

Keywords: Critical thinking, internship, educational supervisor, student-intern

Introduction

The development of critical thinking in formal Sports and Physical Education (SPE) teacher training is a general requirement in most training curricula (Forges *et al.*, 2013, 2018). However, as Soukup (1999) stipulates, it is difficult for supervisors to accurately measure the level of critical thinking development in practicum students. Although the development of critical thinking is recognized as an important goal of education, it is often difficult to assess it accurately. Supervisors may observe certain aspects of critical thinking development, but it is difficult to ascertain its precise level. This highlights the complexity of assessing critical thinking and the need to develop suitable tools to measure this important concept. Factors such as the absence of a common operational definition of critical thinking among supervisors, the lack of clear expectations regarding students' critical thinking development, and the absence of didactic-pedagogical devices to assess the level of development and mobilization of critical thinking in students, contribute to this difficulty (Soukup, 1999).

Moreover, educational supervisors are not sufficiently trained to encourage critical thinking in their student trainees, and may sometimes lack this skill themselves. They find it difficult to determine and define a minimum level of attainment. This in turn leads to variations in terms of requirements and assessment during the internship. It is therefore essential to improve the training of educational supervisors and provide them with the skills they need to encourage the development of critical thinking in their students. In addition, the lack of didactic-pedagogical devices to assess the level of development and mobilization of critical thinking is also part of the problem. Although the development of students' critical thinking skills is not mentioned in the Congo's academic goals, we note that several of the objectives mentioned are closely linked to ~~it~~ to the evolution of these skills (Nziengui *et al.*, 2022). Acquiring a comprehensive understanding of the student and then proposing an individualized approach based on critical judgment and the use of reflective thinking requires a level of development of critical thinking beyond a minimum threshold. In the context of current professional practice, proposing the right approach in a particular case may mean proposing quite the opposite in a slightly different situation.

Educational objectives must therefore highlight the need to develop critical thinking skills during internship training.

A few authors have taken a more general approach to the question of the supervisor's role in developing the trainee's critical thinking skills. Moon (2004) discusses the importance of critical thinking in professional development. She emphasizes the importance of supervisors in supporting this process by encouraging trainees to question their own beliefs and seek alternatives. Yelon (2004) explores the role of the supervisor in the development of critical thinking in psychotherapy trainees. She stresses the importance of supervisors asking open-ended questions, encouraging trainees to examine different perspectives, and helping them develop a reflective attitude. Brauer and Ferguson (2015) examine the strategies used by clinical supervisors to promote critical thinking in trainees. They emphasize the importance of encouraging them to question assumptions, analyze the evidence supporting clinical decisions, and seek perspectives. Although these authors offer an interesting discussion of the role of supervisors in the development of trainees' critical thinking, there is still a lack of information on the perspective of student-trainees with regard to the development of their critical thinking. Faced with this gap, in 2020 and 2022, Nziengui, Mandoumou and Kpazaï conducted two studies on the development of critical thinking in internship settings, in which they took into account the perspectives of the two co-present actors: the pedagogical supervisor and the student-intern.

The aim of this comparative study is to identify the conceptions of critical thinking development held by pedagogical supervisors and student interns in order to gain a better understanding of the complexity of critical thinking development in internship settings. The main question put forward in our research is as follows: how do pedagogical supervisors and trainees conceive the development of critical thinking? From this main question we have identified three sub-questions (SQ). SQ1: What didactic-pedagogical devices do pedagogical supervisors see as likely to develop trainees' critical thinking during practical teaching placements? SQ2: According to the trainees themselves, what didactic-pedagogical devices are likely to develop trainees' critical thinking during their practical teaching placements? SQ3: How can the development of critical thinking be theorized in the light of the conceptions of pedagogical supervisors and student trainees during practical teaching placements?

1. Conceptual framework

The conceptual framework of a comparative study is an essential element that situates the study in the context of existing research and provides a sound theoretical basis for the analysis of the results. The

framework for this comparative study is based on Eric Lavertu's (2013) research relating to the assessment of critical thinking in the context of nursing internships. In addition, he shows how to assess critical thinking. Firstly, he does this by identifying the assumptions underlying arguments and bringing to light new perspectives or problems. Secondly, by detecting and evaluating the relevance of assumptions, whether explicitly or implicitly formulated. Finally, for this author, thinking critically is a primarily rational activity, based on questioning and challenging prejudices and "ready-made" opinions. This requires, according to Lavertu (2013), thinking about one's own thought processes, in order to detect flaws and be able to correct them if necessary.

2. Methodology

For this study, we opted for a qualitative methodological approach, as qualitative research seeks to better understand a phenomenon, to become familiar with people and their concerns (Poupart *et al.*, 1997). According to Gohier (1998), research should be defined not so much by the instruments used to capture and interpret data, but rather by the researcher's epistemological position, which enables them to propose the interpretative and positivist approaches as subdivisions.

2.1. Data collection strategy

The comparative study was carried out in Brazzaville. Eight (08) pedagogical supervisors and nineteen (19) student trainees voluntarily participated in the study. The pedagogical supervisors had professional experience ranging from 9 to 15 years. As for the student trainees, ten (10) were in their third year of the SPE Bachelor's degree and nine (09) in their first and second year of the SPE Master's degree. Their internship experience ranged from 3 to 5 years. The focus group was used as a data collection instrument. With the supervisors, we used a focus group lasting 60 minutes. For the students, we used three focus groups: a) a declarative focus group with Bachelor's students (duration: 90 minutes), b) a declarative focus group with Master's students (duration: 90 minutes) and c) a confirmatory focus group grouping Bachelor's and Master's students (duration: 60 minutes). These focus groups were recorded using a dictaphone.

These focus groups took place in a safe space where participants felt respected and stimulated. The setting was carefully designed to encourage discussion and the active participation of each member. Participants' opinions and ideas were listened to attentively and given fair consideration. Efforts were made to create an inclusive space where every voice was heard, and where the diversity of perspectives was valued. In fact, participants were encouraged to express their thoughts and feelings freely. Their contributions

were welcomed with interest and consideration. Overall, the empowering environment of the focus group enabled productive collaboration and quality collective reflection.

2.2 Data analysis strategy

The analysis strategy for the corpus collected was based on a content analysis for a case study (Yin, 1994). It took the form of a four-stage analysis process: 1) classification according to the research axis (the development of critical thinking); 2) transcription of the group interviews; 3) coding of the units of meaning according to the frames of reference of the two studies; 4) preparation of the coding tools by reviewing the conceptual framework, research questions, and the objectives; and 5) data analysis. Each of the statements collected from focus group participants relating to the supervision actions was coded in order to bring out the informational units linked to the frames of reference of the two studies. The categorization consisted of a rigorous grouping of the different codes, constituting a kind of matrix of meaning and enabling illustrations to be made.

3. Results

3.1. The development of critical thinking in student trainees (ST) according to pedagogical supervisors (PS)

The data analysis identified the following three modalities that the pedagogical supervisor will need to put in place to develop the student trainee's critical thinking (see table 1).

Table 1. The development of critical thinking in student trainees (ST) according to pedagogical supervisors (PS)

Teaching Aids	**Device Indicators**
1. Communication strategy	- Questioning that sparks dialogue, experience sharing (PS- ST), and debate - Questioning that encourages the search for a solution, justification by the ST
2. Attitude of the educational supervisor	- Open-mindedness - Willingness to motivate ST - Desire to establish a horizontal PS-ST relationship
3. Communication climate	- Respectful, rewarding, motivating, and encouraging free expression - Student-trainee focused

The excerpts from the transcripts below illustrate how the development of critical thinking in student trainees (ST) varies from one pedagogical supervisor (PS) to another.

- Firstly, the critical thinking of the student trainee (ST) is developed by the

communication strategies highlighted by the pedagogical supervisor (PS).

The communication strategies put forward by the pedagogical supervisor during an internship may vary according to his or her objectives and pedagogical vision. However, among the elements that can be included in these strategies we have the encouragement to ask questions where the pedagogical supervisor should encourage the trainee to ask questions and express concerns. This helps to clarify information, solve problems and maintain open, transparent communication. This is exemplified in the following statement from a student.

"... the pedagogical supervisor... faced with the lesson conducted by the trainee... Why did you teach this? Why did you do that? The student at that moment has the right and duty to defend himself, and the educational supervisor also has the right and duty to explain the norm, the facts..." (B6).

With this statement, B6 demonstrates that the trainee can support his or her answers with justifications and concrete examples. This helps the supervisor to better understand the trainee's reasoning and assess their skills and understanding. The trainee can also be open to the supervisor's comments and suggestions. He or she may recognize weak points or areas for improvement and express interest in receiving further advice and guidance moving forward.

- Secondly, the critical thinking of the student trainee (ST) is developed by the attitude of the-pedagogical supervisor (PS).

The supervisor's attitude of openness, their availability, and their willingness to establish a horizontal PS-ST relationship are important tools in the development of the trainee's critical thinking. By creating an environment conducive to discussion, constructive dialogue, and questioning, the supervisor enables the trainee to deepen their thinking, explore new ideas, and develop analytical skills. The excerpt below provides an illustration.

"... when there's this feedback, with the supervisor, where the student starts to discuss, in relation to his form, defending his notional content, to say, if I've chosen such and such an element... I'm orienting, and, I'm demonstrating... And the supervisor says, yes, that's fine and... questions himself. Couldn't we do that? He asks for the student's point of view... we talk, we find a compromise so that tomorrow when I go back to my course, I won't make the same mistakes, because we've decided together...". (B3).

When the supervisor encourages the trainee to ask questions, challenge established ideas, and seek answers on their own, they foster their intellectual autonomy and ability to make informed decisions. Moreover, by providing constructive feedback and supporting the trainee's professional development, the supervisor offers additional tools and resources to strengthen critical thinking.

- Thirdly, the critical thinking of the student trainee is developed by the climate established by the pedagogical supervisor.

By creating an environment where mutual respect, active listening, and valuing opinions are encouraged, the supervisor fosters the trainee's confidence and open-mindedness. Trainees feel respected and valued, and are more inclined to express their ideas, ask questions, and challenge preconceptions. The respectful climate is also a tool that enables trainees to feel confident in expressing their opinions, even if they differ from those of the supervisor or other team members. The following statement testifies to this notion.

"...when we start the debate, we create a climate of debate, we encourage that climate; it helps the trainee to feel free...he can bring out the basic elements of his conception, his opinions...it will create a climate of exchange, a climate of sharing and then...it will encourage the construction" (B8).

Ultimately, the above statement exemplifies how the respectful climate promoted by the supervisor is a catalyst for the development of the trainee's critical thinking. It creates an atmosphere conducive to learning, creativity, and innovation, while fostering respect for others and valuing individual contributions. In this way, trainees are encouraged to develop their critical thinking skills independently, enabling them to become competent, reflective professionals in their field.

3.2 The development of critical thinking according to the trainees

With regard to the didactic-pedagogical devices that the student trainee must put in place to develop his or her critical thinking, the study revealed three devices (see table 2).

Table 2. The development of critical thinking according to the trainees

Teaching Aids	**Device Indicators**
Supervision Environment	- Pedagogical supervision based on social cooperation - Pedagogical supervision based on exchanges - Pedagogical supervision based on questioning strategies
The profile of the educational supervisor	- Attitude - Character - Cognitive skills - Pedagogy and supervisory leadership
Student trainee profile	- Awareness - Disposition: open-mindedness, willingness to learn, etc.

The results are supported by the following statements from the trainees.

- Firstly, we examine the pedagogical supervision environment on which the pedagogical supervisor relies to develop the critical thinking of the student trainee.

The pedagogical supervision environment is an essential tool for developing the trainee's critical thinking skills. By creating a stimulating learning climate (one that fosters the exchange of ideas), the supervisor encourages the trainee to think deeply, question preconceived ideas (questioning strategy), and develop independent critical thinking skills (social cooperation). The following statement illustrates this point.

"... it can happen that the advisor asks me why I did such and such an exercise. For example, in the warm-up, he asks me first to demonstrate the exercise I've done, and then he tells me that this exercise you've chosen, aren't there other, more appropriate exercises? Because the exercise I had to choose may or may not be adapted, or it may be a more difficult exercise and there may be other easier exercises that I can adapt..." (V8).

The above statement reinforces the idea that a pedagogical supervision environment that is based on reciprocity, questioning, and cooperation fosters a positive exchange of ideas. Open, critical reflection and collaborative learning are essential for the professional development of trainees. The application of these principles enables trainees to acquire the skills and knowledge they need to become reflective, competent, and innovative teachers in their future teaching careers.

- Secondly, the profile of the pedagogical supervisor based on his/her attitude, character, cognitive skills, and adopted pedagogy, is a tool conducive to the development of critical thinking in students.

To develop a trainee's critical thinking skills, it is essential that the educational supervisor adopt a supportive and encouraging attitude. An educational supervisor must be open, receptive to different ideas and opinions, and ready to challenge preconceived ideas. In terms of character, it is important for the educational supervisor to be fair, equitable, and impartial in his or her assessments and feedback. He or she must also be patient and tolerant of the trainee's mistakes and shortcomings, recognizing that these are an integral part of learning and the development of critical thinking. In terms of instruction, the pedagogical supervisor must favor interactive and participative teaching methods that stimulate the trainee's critical thinking and analysis. The following sentiment expressed by a student illustrates this point.

"I'd say that having a soft advisor won't encourage you to work well. But having an advisor who's rigorous, in fact when you do something, he blames you and you take it seriously and not an advisor, whether you do it

wrong or not, he's not going to talk to you, for me I find he doesn't help me and he won't be a good advisor" (A2).

The attitude, character, and pedagogy of the educational supervisor are key to developing a trainee's critical thinking skills. A supportive educational supervisor who is open, rigorous, and encouraging will impel the trainee to develop critical thinking skills and make informed decisions throughout the learning process.

- Thirdly, the student-trainee's profile, reflected in their awareness and affective attitude, is a tool that encourages critical thinking.

The trainee's affective attitude - their willingness to be open, curious, and questioning - is a crucial element in fostering critical thinking. A trainee who is willing to question their own beliefs, accept constructive criticism, and actively engage in the learning process will be more likely to develop critical thinking skills in a meaningful way. Trainee self-awareness is another important tool for developing critical thinking skills. By becoming aware of their own biases, prejudices, and limitations, trainees can be more attentive to the information they receive, and be able to evaluate more objectively and critically the arguments and ideas presented to them. Awareness also enables trainees to recognize gaps in their knowledge and to actively seek to fill them, thus contributing to their critical thinking. The verbatim comments below support these assertions.

"For me, when the advisor gives me criticism... sometimes it... gets on my nerves, because you realize that you've also done your research and that what they're saying doesn't match up with all that. I've read three or four books, for example, and when he compares them to these three authors, for example, it doesn't match up with what I'm trying to feel myself, it really annoys me. But seeing as he's the superior to me, I act as if I've accepted to go and do some more research, to try and convince him...". (A7).

The above excerpt from the interviews underscores how the combination of a favorable affective attitude with an awareness of their own biases and limitations will allow trainees to develop their critical thinking in a deeper and more meaningful way. They will be able to question information, formulate sound arguments, and critically evaluate different perspectives and points of view. This will give them the skills they need to make informed decisions and contribute thoughtfully and critically to their field of study or work.

Discussion

This study reveals several didactic-pedagogical devices for developing critical thinking in student trainees, according to both the pedagogical supervisors and the student trainees themselves. These are directed at the educational supervisor, the student trainee, and the

supervision environment. In this pedagogical supervision, the supervisor must take into account the professional network in which the accompaniment takes place and the interrelating resources, looking at the formal and informal learning spaces supported by the trainee. To develop student trainees' critical thinking skills in this way, the devices listed indicate that the pedagogical supervisor must adopt a supervisory pedagogy in line with a socio-constructivist paradigm of student development support, using reflective accompaniment (Borges and Lessard, 2005). As Campanale (2007) indicates, it must lead the student-trainee to: 1) identify "repetitive situations" and acquire automatisms to manage them; and 2) respond appropriately to a singular, unstable, or complex situation that can destabilize them when a tension arises between the situation experienced and their values. Student trainees and educational supervisors also emphasize the value of critical thinking for professional development. Their comments reinforce the need for learning strategies that support the student's reflexive process (Bocquillon & Derobertmasure, 2018). The latter must consciously and voluntarily engage in this reflexive process. Drawing on the work of Bourgeois (2013), Parent (2016), and Fredricks *et al*. (2004), this commitment can be seen in three dimensions. Firstly, affective commitment: this dimension reflects the trainee's values, interests, and motivation with regard to the type of learning offered by the educational supervisor. The trainee's affective commitment will depend on the proposed activities and what they can bring in terms of goal attainment. Their involvement is therefore influenced by a sense of belonging and by the security of the proposed support framework, so the supervisor must be conciliatory and show empathy towards the student. Secondly, behavioral commitment: this dimension is manifested in the trainee's concrete behavior, their desire to get involved in the internship and actively participate as well as in their level of engagement in the relationship with their pedagogical supervisor.

Thirdly, cognitive commitment: this type of commitment concerns the student-trainee's relationship with knowledge. It is linked to metacognitive strategies. Consequently, it is difficult to observe. Cognitive engagement is mobilized in particular when the student is asked to make links with the theory seen in the course in order to analyze his or her practice. However, the commitment of these two actors is not just a state, but rather a dynamic process in which the three dimensions interact with each other, and which, in a given context, manifests attachment to the profession.

Conclusion

The aim of our comparative study was to identify the conceptions of critical thinking development held by pedagogical supervisors and student interns in order to gain a better understanding of the complexity of critical

thinking development in the practicum environment. We discovered that the development of critical thinking in student trainees during teaching placements is a complex undertaking, requiring collaboration between two main participants and an appropriate learning environment. Although teaching supervisors and student trainees have different roles during practical placements, this research highlights that there is considerable scope for pooling their different skills. Current theories on practicum learning emphasize socioconstructivist practices, i.e. a learner who constructs their knowledge, not in isolation, but with peers and in a supportive environment where everyone participates in learning (pedagogical supervisor and student trainee). Based on our results, four points demonstrate that current theories on internship learning emphasize socioconstructivist practices. Firstly, learning through active participation: trainees are encouraged to engage in practical experiences, observe and interact with pedagogical supervisors, with supervision based on the cognitive skills of both the student trainee and the supervisor. Secondly, the encouragement of learning through reflection, a questioning-based supervision that prompts dialogue and experience sharing, motivates the trainee to reflect on their experiences, analyze their actions, and learn from the challenges encountered. Thirdly, collaboration and social interaction based on a climate of rewarding exchange. This translates into opportunities for trainees to work in teams, exchange ideas with the educational supervisor, and benefit from the knowledge and expertise of their supervisor. And fourthly, the role of the supervisor as a guide. The educational supervisor helps the trainee to make the most of their experiences, guides them in learning, provides constructive feedback, and facilitates interaction and collaboration with other students.

If the research is based on the study of conceptions (and therefore of declared practices), future studies that examine actual practices in pedagogical supervision will be relevant to better investigate the issue of the development of critical thinking during internships.

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