

Opinions and Pressings of Students in Physical Education on Development of Professional Skills during Internships in Congo

Hubert César Mviri¹, David Sylvain Mabassa¹, Juslain Joël Tira¹, Jean Itoua Okemba², Alphonse Massamba^{3*}

¹Laboratoire de Didactique des Activités Physiques et Sportives, Institut Supérieur d'Éducation Physique et Sportive (ISEPS), Université Marien NGOUABI, Brazzaville, Congo

²Laboratoire d'Études et de Recherches en Activités Physiques Adaptées, Institut Supérieur d'Éducation Physique et Sportive (ISEPS), Université Marien NGOUABI, Brazzaville, Congo

³Laboratoire de Biosciences du Sport, Institut Supérieur d'Éducation Physique et Sportive (ISEPS), Université Marien NGOUABI, Brazzaville, Congo

Email: *mboya53@gmail.com

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Abstract

The role of internships in building professional skills of physical education students in training has led to many reflections. The data from this study, which are part of the field of professional didactics, reflect the development of professionalism of student trainees. The descriptive and interpretive study included 74 physical education trainee students engaged in field placements. The data collection used a professional skills assessment grid and interviews to capture the meaning they attribute to their personal and subjective experience during the internships. The results obtained show that internships have repercussions on the professional skills acquired by trainee students, in relation to the level of communication between trainee and student teachers, the design of teaching situations, the assessment of the progress of learning and learning, and the degree of skill acquisition. In conclusion, the results of this work call for the improvement of conditions for monitoring and developing the experience of trainee students in terms of didactic, psychopedagogical and environmental knowledge.

Keywords

Professional Skills, Physical and Sport Education, Trainee Teacher, Secondary Education, Intervention

1. Introduction

During childhood and adolescence, physical education at school offers through physical and sports activities an opportunity to learn and practice skills that are likely to promote physical fitness and good health throughout life. These daily activities include running, jumping, throwing, swimming, but also more structured games and sports. Early mastery of these basic skills provides young people with crucial assistance to perform and better understand the value of these activities in their subsequent education or in adulthood, at work or in their spare time. Physical education, however, is not limited to the training of physical skills; it transcends the purely recreational dimension. Today it has a rewarding function in the educational system because it develops the personality of the child, his body, his mind, his organs [1]. Moreover, physical education, at all levels of schooling, aims at the success of all students and contributes, with the other disciplines, to the education, training and education of each. However, its implementation requires high-level training for all teachers, improved teaching conditions (facilities, class size), and substantial hours for discovery, practice, learning and transformation.

In Subsaharian African countries, the lack of developed space forces students to practice physical education only at school, where analysis of educational projects reveals that teachers generally try to offer their students relatively restricted activities during schooling [2]. According to Martinand [3], the cultural approach to education is linked to two the following connotations of culture:

- The descriptive dimension with a culture in anthropological sense and that which refers to the works and productions of humanity. The normative dimension reflects the training of the citizen by the school in relation to social values and spatiotemporal context;
- Culture as a report deals with the construction of a relation to knowledge, to oneself, to the social and/or physical environment. In physical education, teacher training requires learning that can foster the acquisition of declarative, procedural and conditional knowledge in a professionalization perspective related to body knowledge, physical and sports activities, planning, pedagogical intervention, the environmental context of pedagogical relations (didactic transposition, didactic contract, etc.).

In the Republic of Congo, physical education is a separate discipline in the education system. His teaching is based on the sports method; the physical development of the child is based on the practice of physical and sports activities. Participation in the development of the student by improving his motor, social, psychological, etc., becomes an imperative. However, the observations of the ministerial authorities in charge of the teaching of physical education and sports in the Congo, through inspection reports and symposia, join the results of several authors at the level of the relationship theory-practice among the student trainees in physical education [4] [5]. The main complaint expressed by the trainee teachers against the initial training concerns the too theoretical aspect of

a training perceived as being often far removed from the conditions of exercise of trade. However, evaluation of training during the courses is a real “post observation” to highlight the impact of training programs in the construction of professional skills. However, this question of the evaluation of vocational training in physical education in the Congo has not been explored until now, either in the field of student learning, in the field of evaluation of teaching at university or in that of the evaluation of professional skills developed at the institute in charge of the training of teachers of physical education as part of the initial training.

Unrated training leaves physical education teachers free to act without awareness of the pedagogical intervention that may induce a motivation that is characterized by a lack of motivation. This is a fundamental concern that has raised the question through the following question: Does the professional training of student trainees in physical education allow them to build professional skills that can intervene in the field?

In consideration of the above, we thus make the assumption: the construction of the professional skills necessary for pedagogical intervention in the field is conditioned by quality of professional training received by trainee students. It is to test this hypothesis that this study was conducted. The objective of the study is to identify the professional skills developed during the initial training, necessary for the educational intervention in physical education among student trainees.

The interest of this study is to make the administrative authorities and the teaching staff of the institutes of physical education and sports and the educational community aware of training biases of future teachers.

2. Focus on Studies Associated to Student Trainee Competencies

There are several studies on the teaching of physical and sports activities in general [6]. This work was conducted in different theoretical fields. Some works based on “product-research” paradigms have made it possible to analyze the correlations between the behavior of teachers in binary (teacher-knowledge) interaction, in ternary interaction (teacher-pupil-knowledge) and the resulting behaviors (between the interactants), their knowledge and motivation (product) [7]. Other studies, based on methodological approaches, have identified novice and expert teachers [8]. From these types of research emerged the current of studies of the understanding of didactic and didactical phenomena, founded by cognitive psychology, aimed at understanding the cognitive mechanisms underlying the observable behaviors of teachers [9].

In teaching, such types of studies have been developed from a knowledge model, the command model [10] where action is conceived as execution of a preliminary program, a representation of the world in which the subject acts. Amade-Escot [11] argues that it is the teacher’s cognitions, knowledge, and be-

liefs that are at the root of particularly automated “routines,” or his decisions in action [12]. This theory postulates that the teacher’s action is under cognitive control, which has the naïve consequence of considering that the change in professional practices is dependent on the beliefs and knowledge of teachers.

The works of Durand [9] and Touboul *et al.* [8] based on this theory, have shown that the functioning of a teacher and especially an expert teacher is different from that of the novice, worse a technician or an engineer applying rigorously and methodically the rules reflecting the principles efficiency or operationalizing academic and technological knowledge. In contrast, teachers demonstrate their functioning based on improvisation, even if general plans frame their actions. Hence pedagogical and didactic excellence appears to be part of an irrational, improvised and creative functioning, rather than rational, deliberate and programmed. This work shows a coupling between the actor and the action context, so that it is not possible to identify the actor’s knowledge independently of the action context. Knowledge emerges from action.

Other types of work resulting from the evolution of methodological research in teaching are of a didactic nature. They aim to highlight the processes underlying teaching. It is an epistemology of the action according to which the disposition to act of humans is not only underlying, but encompasses or is situated on the register of the relation between the individual and the medium [7]. In physical education and sport, such a model was tested in France by Durand [9]. He led to the theory of situated action. Thus, the action of the teacher can not be studied independently of the context of action.

3. Material and Methods

3.1. Framework of the Study

The study was conducted at the Higher Institute of Physical Education and Sport, establishment of the University Marien Ngouabi, in charge of the training of teachers and supervisors of physical education and sport. This university structure assigns each year students in secondary schools and colleges of Brazzaville for courses of educational application.

Our research is in the field of action of the future teachers of physical education, evolving in the high schools of Congo. However, only public high schools in Brazzaville were selected for the preparation courses for future physical education teachers, in training at the Higher Institute of Physical Education and Sports during the 2017-2018 school year.

3.2. Sampling

The population of our research consisted of 223 student interns (145 men and 78 women) assigned to Brazzaville high schools by memo No334/DB/P/SG/DDSEP-SAP of January 9, 2018, relating to the internships of application for the 2017-2018 school year. These future teachers were all in training at the Higher Institute of Physical Education and Sports, in the field of

physical education.

The target population is derived from the general population of physical education teachers in Brazzaville according to the statistical criteria of selection [13]. To determine the size of the student trainee sample, out of a population of 223 trainee students, a 1/3 draw was conducted. This draw enabled us to retain 74 students (26 women and 48 men) enrolled during the 2017-2018 academic year at the Higher Institute of Physical Education and Sports, particularly in the third year of the first year and 2nd Master of the Physical Education and Sports Course. All the subjects were in a situation internship in the selected high schools (for the practice of internships), during the course of their training course for professional preparation.

3.3. Investigative Tools

The tools of investigation were of two types: maintenance and didactic observation.

1) The interviews

In order to understand the intrinsic logic of the trainee teacher in the development of his skills (or his professional knowledge), anxious to find the best way to activate the reflexivity of students, interviews were conducted with them, in margin of the questionnaire, around nine (09) concepts. It was:

- 1) Adapting to unforeseen circumstances based on trainee teachers' skills, routines, experience and preparation. Indeed, the strong uncertainty associated with the physical education session, which forces the teacher to frequently use structured improvisation, is well identified in the literature [14] [15];
- 2) Winning tasks (a task that the trainee teacher likes to teach, which students love, who succeed each time). According to the work of Florence, Brunelle and Carlier [16], these tasks, simple, stimulating and evolving occupy a major place at the beginning of the courses. They are defined according to five (05) qualitative criteria: dynamism, originality, emotional charge, openness essence;
- 3) Exchange with students [the exchange having an anthropological connotation: "to give, to receive, to return"];
- 4) Language (or mode of verbal and non-verbal communication to the trainee teacher and students);
- 5) "Fetish" tasks ["self-help" tasks that the trainee teacher teaches with pleasure and brilliance];
- 6) The whiteness of knowing [what the teacher does not know (do or do-it-do) whether or not it is avowed];
- 7) Of the self-will [knowledge, skills or attitudes considered by the teacher as (to be) normal in the pupils, or conversely by the pupils in the teacher's home];
- 8) Unable to support [defined as the "subjective threshold of tolerance of the teacher for indiscipline, inactivity and/or unlearning of students". It can be transposed to students' experiences with the teacher [10];

9) The routine (habits, even intervention automatism specific to the teacher, assimilated by the students).

The choice of these concepts was guided by the work of Amade-Escot [17], Brunelle and Brunelle [18], Durand [19], Loizon [20] and Saujat [21]. This proven eclecticism of knowledge was intended to offer each trainee teacher the opportunity to find the most unique entry to report his intervention closer to his sensitivity. This option paid particular attention, without a doctrinal bias, to the theoretical currents likely to inspire in a composite way a humanistic physical education, centered on the needs of the pupils in accordance with the personality of teachers [22].

These interviews with trainee students took place during last two weeks of the internship. Each concept was the subject of a comment from each subject surveyed. The corpus of this part of the study was thus constituted of $74 \times 9 = 666$ stories bearing the title of concept concerned.

2) Didactic observation

The observation focused on seven common skills that seem to us to be priorities in initial training [23], as these indicate the priority objectives to be attained during the training and determine the minimum required for a future teacher. It was:

- Competency 1: communication in the various contexts related to the teaching profession;
- Competence 2: the design of teaching and learning situations for content to be learned;
- Competence 3: piloting teaching and learning situations;
- Competence 4: evaluation of the progress of learning and the degree of acquisition of skills for content to be learned;
- Competency 5: the ability to plan, organize and supervise the functioning of the group-class in order to promote student learning and socialization;
- Competence 6: commitment to an individual and collective approach to professional development;
- Competence 7: the choice to act ethically and responsibly in the performance of his duties.

Each of these skills has been determined by five specific indicators.

3.4. Experimental Procedures

The field study was conducted throughout duration of the professional internship conducted from January 12 to April 30, 2018. During pre-survey, we have: 1) visited schools (high schools) in which were assigned the student physical education trainees to meet them; 2) maintained these students in order to explain to them the purpose and interest of our work for them as well as for the whole nation; 3) put at the disposal of 5 educational tutors the investigative tool in a perfect collaboration. It was an observation grid relating to the reference system of professional skills of teachers. This grid was designed in the form of

the Likert assessment scale ranging from 1 to 5 relative to the evaluation of the student trainees' professional skills indicators.

The scale was validated through the determination of the internal consistency of the responses to the questions by the Cronbach coefficient ($\alpha = 0.72$).

The survey consisted of an assessment of professional skills of 74 trainee students by 19 educational tutors who were responsible for supporting the student trainees during the courses of responsibility (1 educational tutor to follow 4 student trainees for the four groups and 1 tutor pedagogical to follow 3 trainee students for the 5th group). This evaluation was made by observation.

The observation was made during three lessons randomly selected by the five observers. The analysis of Cohen [23], Bakerman and Gottman's kappa coefficients (κ) [24] revealed a homogeneity of inter-observer coding between 0.60 and 0.80 for the different indicators specific to the selected competencies.

The vocational skills assessment indicators for these trainee students were evaluated using a Likert scale ranging from 1 to 5 [25]. Indeed, have an average of:

- 5 points means that the skill has been largely mastered (very mastered = LM),
- 4 points means that the trainee's competence is clearly assured (insured = CA);
- 3 points is the average value and this means that the trainee's competence is acceptable (acceptable = AC);
- 2 points is to say that the competence of the trainee student is little developed (undeveloped = UD);
- 1 point means that the quality of competence is very little developed (very little developed = VLD).

3.5. Statistical Analysis

The rating of the professional skills of trainee students made it possible to transform qualitative data into quantitative data. Thus, the statistical analysis of results focused on the calculation of mean (\bar{x}) and standard deviation (SD). The average work skills of these student trainees were compared using the Student test using SPSS software version 23.0.

4. Results

4.1. Questionnaire Data

1) Competence 1

Table 1 reports the results on the quality of ownership of the indicators related to competence 1.

The analysis of the data in **Table 1** reveals that the future teachers of both genders used a varied and well-spoken language in their teaching and in their interventions with the students (indicator 1), as well as in the relations with their colleagues, the management, partners (indicator 2). They similarly corrected students' errors in motor reproductions (Indicator 3) and articulated their ideas

clearly and articulately in a variety of contexts (Indicator 4). In addition, they made good use of the technical vocabulary specific to their discipline (indicator 5).

2) Competence 2

Table 2 reports the results on the quality of appropriation of indicators related to competence 2.

Table 1. Results obtained on the quality of appropriation of the various indicators relating to competence 1.

| | Male (n = 48) | Female (n = 26) | p |
|--|------------------|--------------------|-------|
| | $\bar{x} \pm SD$ | $\bar{x} \pm SD$ | |
| Use of oral language in teaching and in its interventions with pupils (/ 5) | 2.96 ± 0.77 | 2.77 ± 0.82 | 0.327 |
| Use of a varied and neat oral language in its relations with colleagues, management and partners (/ 5) | 2.60 ± 0.96 | 2.46 ± 0.90 | 0.536 |
| Correction of errors (/ 5) | 2.69 ± 1.29 | 2.58 ± 1.08 | 0.710 |
| Clear and articulate expression of ideas in various contexts (/ 5) | 2.77 ± 0.95 | 2.50 ± 0.95 | 0.246 |
| Proper use of the technical vocabulary specific to his discipline (/ 5) | 2.35 ± 0.93 | 2.00 ± 0.85 | 0.112 |
| Average score of skill 1 (/ 25) | 13.37 ± 2.58 | 12.31 ± 2.51 | 0.091 |

Table 2. Results obtained on the quality of appropriation of the various indicators relating to competence 2.

| | Male (n = 48) | Female (n = 26) | p |
|---|------------------|--------------------|--------|
| | $\bar{x} \pm SD$ | $\bar{x} \pm SD$ | |
| Prediction of learning situations favoring the active participation of pupils (/ 5) | 2.73 ± 0.87*** | 1.96 ± 0.82 | 0.0001 |
| Prediction of returns with students on the learning done (/ 5). | 2.25 ± 0.73 | 2.62 ± 0.85 | 0.057 |
| Prediction of various organizations in relation to individual differences of pupils (/ 5) | 2.33 ± 0.78 | 2.11 ± 0.82 | 0.263 |
| Accuracy of evaluation criteria | 2.48 ± 0.74 | 2.35 ± 0.98 | 0.514 |
| Planning additional consolidation driving situations (/ 5) | 2.23 ± 0.69 | 2.62 ± 0.80* | 0.034 |
| Average score of skill 2 (/ 25) | 12.02 ± 1.33 | 11.65 ± 1.44 | 0.274 |

*: $p < 0.05$; ***: $p < 0.001$.

The values in **Table 2** indicate that the male respondents were more likely ($p < 0.001$) to have active learning experiences (Indicator 1) than their female counterparts. However, there was no significant difference between the two sexes in the prediction of feedback on learning outcomes (Indicator 2), as much in the forecast of various organizations that took into account individual student differences (indicator 3) only in the precision of the evaluation criteria (indicator 4). However, women planned better ($p < 0.05$) for additional motor consolidation (Indicator 5) than their male counterparts.

3) Competence 3

Table 3 reports the results on the quality of ownership of the indicators related to competence 3.

The analysis of this table shows that the future physical education teachers of both sexes explained in a comparable way ($p > 0.05$) the task to be performed by using the gestural demonstration or by repeating the explanation by a student. (Indicator 1), and told students what resources they had access to for learning (Indicator 2). In addition, they ensured that students were adequately organized by moving between groups (Indicator 3), while respecting the intentions of their plans (Indicator 5). As for Indicator 4, the ladies differed from men in their ability to better encourage students with discreet gestures or words relative to men ($p < 0.01$).

4) Competence 4

Table 4 reports the results on the quality of ownership of the competency indicators.

With regard to competency 4, the data in **Table 5** indicate that the trainee teachers surveyed, regardless of sex, used official tools (observation charts, variation list, descriptive evaluation grid) to support students and evaluate the progress of their learning (indicator 1). They used feedback to help students become aware of their strengths, weaknesses and attitudes (Indicator 2). They made an assessment of the learning done by the students in order to make a judgment on the level of proficiency (indicator 3). In addition, all the interviewees supported students' personal initiative on approaches, learning strategies and skills, using a self-assessment grid, the logbook (indicator 4). This approach resulted in students explaining their successes or difficulties, and encouraging the effort, method, attention and personal attitudes (Indicator 5).

5) Competence 5

Table 5 reports the results on the quality of ownership of competency indicators.

The results presented in **Table 5** show that prospective male teachers clearly maintained a climate conducive to learning by fostering student-to-student (rather than competitive) co-operation (indicator 4) compared to female students ($p < 0.001$). On the other hand, there was no significant difference between the two sexes in how to manage student or team behaviors. This finding was found in the use of discrete gestures or measures planned with students (indicator 1)

and visual monitoring of students during work at the various tasks (peripheral vision) (indicator 2). They involved students in the establishment of classroom operating standards (Indicator 3), while ensuring a shared responsibility for the proper functioning of the classroom to students and verifying the existence of sharing between them.

Table 3. Results obtained on the quality of appropriation of the various indicators relating to competence 3.

| | Male (n = 48) | Female (n = 26) | p |
|---|--------------------------|----------------------------|----------|
| | $\bar{x} \pm SD$ | $\bar{x} \pm SD$ | |
| Explanation of the task to be performed using gestural demonstration or repeat of the explanation by a student (/ 5) | 3.25 ± 0.91 | 3.31 ± 0.93 | 0.797 |
| Accuracy to students of the resources they have access to for learning (/ 5) | 2.44 ± 0.71 | 2.11 ± 0.71 | 0.067 |
| Verification of the students' organization by moving between the groups (/ 5) | 2.48 ± 0.80 | 2.35 ± 0.98 | 0.530 |
| Encouraging students with discreet gestures or words (/ 5) | 2.56 ± 1.00 | 3.19 ± 0.80** | 0.008 |
| Respect of planned intentions (/ 5) | 1.87 ± 0.76 | 2.04 ± 0.82 | 0.394 |
| Average score of skill 3 (/ 25) | 12.60 ± 1.57 | 13.00 ± 1.06 | 0.253 |

** : $p < 0.01$.

Table 4. Results obtained on the quality of appropriation of the various indicators relating to competence 4.

| | Male (n = 48) | Female (n = 26) | p |
|---|--------------------------|----------------------------|----------|
| | $\bar{x} \pm SD$ | $\bar{x} \pm SD$ | |
| Use of official tools for student support and assessment of learning progress (/ 5) | 2.08 ± 0.77 | 1.96 ± 0.72 | 0.508 |
| Use feedback to help students become aware of their strengths, weaknesses and attitudes (/ 5) | 2.21 ± 0.80 | 2.54 ± 0.81 | 0.096 |
| Assessment of students' learning for judgment on the level of proficiency (/ 5) | 2.42 ± 0.89 | 2.11 ± 0.65 | 0.102 |
| Supporting students' personal initiative on approaches, learning strategies and skills through the use of a self-assessment grid and the logbook (/ 5) | 2.06 ± 0.75 | 2.42 ± 0.81 | 0.060 |
| Conduct students in explaining their successes or difficulties and the reasons that depend on them alone (/ 5) | 2.29 ± 0.74 | 2.08 ± 0.69 | 0.227 |
| Average score of the skill 4 (/ 25) | 11.06 ± 1.29 | 11.12 ± 1.07 | 0.859 |

Table 5. Results obtained on the quality of appropriation of the various indicators related to competence 5.

| | Male (n = 48) | Female (n = 26) | p |
|---|------------------|--------------------|--------|
| | $\bar{x} \pm SD$ | $\bar{x} \pm SD$ | |
| Management of student or team behaviors by discrete gestures or by planned measures with students (/ 5) | 2.52 ± 0.77 | 2.27 ± 0.92 | 0.215 |
| Monitoring students during work on various tasks (peripheral vision) to ensure that they remain focused on the work to be performed (/ 5) | 3.06 ± 0.98 | 3.19 ± 0.80 | 0.564 |
| Student participation in the establishment of classroom operating standards (/ 5) | 2.40 ± 0.71 | 2.11 ± 0.81 | 0.127 |
| Maintaining a climate conducive to learning by fostering cooperation between students rather than competition (/ 5) | 2.08 ± 0.77*** | 1.38 ± 0.50 | 0.0001 |
| Sharing with students and with each other responsibilities for the proper functioning of the class (/ 5) | 2.40 ± 0.71 | 2.42 ± 0.50 | 0.862 |
| Average score of the skill 5 (/ 25) | 12.46 ± 1.27*** | 11.38 ± 1.02 | 0.0001 |

***: $p < 0.001$.

6) Competence 6

Table 6 reports the results on the quality of ownership of the indicators of competence.

Reading **Table 6** shows that trainee teachers, regardless of gender, construct a portfolio in which we find various examples of the skills they develop (indicator 1). They exchanged ideas with their colleagues on the relevance of their pedagogical and didactic choices (indicator 2), while identifying the strengths of their interventions and explaining their successes by targeting their professional skills, their personal qualities (indicator 3). In addition, they recognized areas for improvement in their interventions and analyzes, their difficulties in proposing relevant explanations (Indicator 4); to do this, they sought out and found solutions to the problems experienced, which allowed them to propose adjustments to be put in place during their next intervention (indicator 5).

7) Competence 7

Table 7 reports the results on the quality of ownership of the competency indicators.

Table 7: Results obtained on the quality of appropriation of the various indicators relating to competence 7 Reading **Table 6** shows that trainee teachers, regardless of gender, construct a portfolio in which we find various examples of the skills they develop (indicator 1). They exchanged ideas with their colleagues on the relevance of their pedagogical and didactic choices (indicator 2), while identifying the strengths of their interventions and explaining their successes by

targeting their professional skills, their personal qualities (indicator 3). In addition, they recognized areas for improvement in their interventions and analyzes, their difficulties in proposing relevant explanations (Indicator 4); to do this, they sought out and found solutions to the problems experienced, which allowed them to propose adjustments to be put in place during their next intervention (indicator 5).

Table 7 reports the results on the quality of ownership of the competency indicators.

Analysis of the data in **Table 7** reveals that male trainee teachers were more likely to avoid any form of discrimination against students, parents, and peers (Indicator 2) than their female counterparts ($p < 0.01$). They maintained better a positive attitude toward school principals (Indicator 5) compared to future physical education teachers ($p < 0.05$). On the other hand, future physical education teachers differed from men in their more positive attitude towards their colleagues (indicator 4) ($p < 0.05$). With regard to their behavior in classrooms or workshops (Indicator 1), the average scores recorded between men and women were comparable in terms of the prominence of the democratic spirit; the same was true for maintaining a positive attitude towards all students (Indicator 3).

Table 6. Results obtained on the quality of appropriation of the various indicators relating to competence 6.

| | Male (n = 48) | Female (n = 26) | p |
|--|------------------|--------------------|-------|
| | $\bar{x} \pm SD$ | $\bar{x} \pm SD$ | |
| Construction of a portfolio containing various examples of skills to develop (/ 5) | 2.14 ± 0.77 | 2.19 ± 0.80 | 0.808 |
| Exchange of ideas with colleagues on the relevance of his pedagogical and didactic choices (/ 5) | 3.33 ± 0.93 | 2.92 ± 0.80 | 0.061 |
| Identify the strengths of his interventions and explain the successes by targeting his professional skills, his personal qualities (/ 5) | 2.35 ± 0.60 | 2.61 ± 0.70 | 0.096 |
| Recognition of areas for improvement in its interventions and analysis of difficulties by proposing relevant explanations (/ 5) | 2.37 ± 0.67 | 2.42 ± 0.86 | 0.791 |
| Resolving the problems experienced by students and proposing the adjustments to be put in place during his next intervention (/ 5) | 2.54 ± 0.90 | 2.27 ± 1.11 | 0.257 |
| Average skill score 6 (25) | 12.75 ± 1.36 | 12.42 ± 1.90 | 0.395 |

Table 7. Results obtained on the quality of appropriation of the various indicators relating to competence 7.

| | Male (n = 48) | Female (n = 26) | p |
|--|-------------------|--------------------|-------|
| | $\bar{x} \pm SD$ | $\bar{x} \pm SD$ | |
| Adoption of democratic attitudes in class or in workshops (/ 5) | 2.27 \pm 0.76 | 2.46 \pm 0.71 | 0.297 |
| Avoiding any form of discrimination against students, parents and peers (/ 5) | 2.35 \pm 0.67** | 2.88 \pm 0.71 | 0.002 |
| Maintaining a positive attitude towards all students (/ 5) | 2.37 \pm 0.76 | 2.15 \pm 0.78 | 0.242 |
| Maintaining a positive attitude towards colleagues (/ 5) | 3.04 \pm 0.92 | 3.50 \pm 0.99* | 0.049 |
| Maintaining a positive attitude towards school management (/ 5) | 2.71 \pm 0.92* | 2.15 \pm 0.78 | 0.011 |
| Average score of the skill 7 (/ 25) | 12.75 \pm 1.51 | 13.15 \pm 1.57 | 0.282 |

*: p < 0.05.

In short, our results show that students in physical education at the end of their training, during the internships, have weaknesses in language level with their students to communicate their message (in their interventions with students, relationships with their students), towards their colleagues, school management and partners and especially in correcting learners' mistakes. In addition, the feedback between them and the students, the accuracy of the evaluation criteria and the explanation of the task to be performed using the gestural demonstration or the repetition of explanation by a student were not developed during courses. The same is true for the explanation of the task to be performed by using gestural demonstration or repetition of explanation by a pupil, as well as for the verification of the students' organization. The trainees were able to maintain a climate conducive to learning by fostering cooperation between students rather than competition, and avoiding any form of discrimination against students, parents and peers. However, student trainees have mastery in the prediction of learning situations by promoting the active participation of students. In addition, there has been an improvement in the planning of additional consolidation motor situations and the encouragement of students. In addition, the assessment of student learning for judgment on level of proficiency was inconclusive, and student supervision during work at the various tasks (peripheral vision) to ensure that they remain focused on the work to be performed has not been effectively ensured.

5. Discussion

The analysis of the results obtained in this study focused on the relationship to knowledge (professional skills) of trainee teachers at the end of their training at

the Higher Institute of Physical and Sports Education with regard to their internship experience. The data of the tables, the decryption of the video images and the corpus of the interviews have particularly highlighted different themes and sub-themes related to the epistemic dimensions (relation to school knowledge and knowledge), identity (relation to oneself as trainee in physical education) and social (mainly in relation to students).

5.1. Representations of Trainee Teachers and Acquired during Traineeships

In more than one respect, the stories that trainee teachers give about their activity are similar to the characteristics of the “do-it-yourselfer” described by Dupont-Beurier [26]. Indeed, this philosopher defines as follows the activity of the handyman: “It is a know-how, understood not as a general knowledge that one applies to particular cases but as an abundance of particular knowledge that allows to treat in any case in general. The handyman is forced to combine several techniques and an abundance of special knowledge. His activity consists of recipes, tricks, tricks, ploys, tips and tricks. Nothing is codified in advance: it adapts. He practices intelligence by trial and error. The preparation of the work envisages, not the real, but the possible. The do-it-yourselfer sees the approximate way of proceeding but does not know what the completed works will look like. The organization of the task anticipates “in case”. The do-it-yourselfer does not go through a learning phase: he is immersed in the complexity situated. Finally, he ignites when presenting his work. He wants her to be recognized. He works because he knows what he must do to be” ([26], 108).

This analog model corresponds quite well to the training ideal of the novices we recommend. He removes the classic model of the expert. On the basis of the Bui-Xuan’s conative curriculum [27], the interpretation of the subjects’ statements in the light of the experience can only be experienced by those concerned. On the other hand, an acceptance of the expertise as defined by Visioli and Ria [28] is appropriate to name the privileged situations related by the subjects: there would be “moments of expertise considered as a collective property of teachers and pupils, emerging from more or less expert situations” ([28], p.27).

5.2. Competences of Trainee Teachers and Related Concepts

The list of 9 concepts available to students refers to professed theories and known paradigms. It gives rise to reminiscences, more or less precise or vague, according to the depth of their integration. But more than anything, the proposed concepts bring out the implicit and subjective theories of these novices [29]. These appear in formulations that alternate the use of the personal pronoun “I” and the general speech in the name of “the epistemic teacher” or “teachers”. Is this distinction conscious for them? The granulation of the analyzed discourse does not make it possible to know more about the level of reflexivity to which the trainee teachers are made.

Nevertheless, it appears that, depending on the case, the “four step reflexive

approach” proposed by Smyth [30] is found in more than one narrative, in an incomplete way, obviously. Indeed, there is first question of describing: what am I doing? Second, it’s about finding the meaning: what does it mean? Then comes the time to confront: how did I become who I am? How did I come to act this way? Finally, it is about transforming: how can I act differently? How can I change? In varying doses, these four types of knowledge (the essence of the reflexive approach) emerge in the stories of trainee teachers, reflecting a (not insignificant) part of the hidden knowledge of their professional action [31].

More than once, trainee teachers make connections between concepts, noting that they are not waterproof. On the contrary, the relative porosity of some of them (accentuated by the brevity of the definitions provided) facilitates the evocation of the teaching activity in its complexity. The most revealing concept in this respect is structured improvisation, not only because it is the most commented on, but because it is mentioned many times in the comments of the other concepts.

5.3. Positions of Trainee Teachers in Relation to Stories

The stories tell how and what trainee teachers learn at the training sites. Their testimonies meet the criteria identified by Eraut [32] to qualify learning in the workplace: “to do things faster, to improve the quality of the process or the communication related to the task, to combine the tasks more efficiently, to recognize possible problems more quickly, to increase the difficulty of the tasks to be performed or to juggle with more difficulties” ([32], p.2). Inserted in a prescriptive context that leads to the certification evaluation of the internships, these learning are certainly formal and expected: application of the instructions of the academic leader, observance of the instructions of the educational advisor, deliberate setting of personal goals for progress. But they are also (and above all?) Informal and unpredictable, thanks to unforeseen management and interactions with students.

The possibility offered to trainee teachers to select and comment on five concepts makes it possible to explain their repertoire consisting of knowledge close to the context of the practice (the arts of doing) and their “subjective theories” [33].

In writing, trainee teachers reveal their professional identity in construction. It is either perceived, with reference to their own trajectory in the world of sport and animation, either attributed by students, colleagues and the pedagogical adviser, or desired in the prospect of landing a future job. The authors seize the opportunity to state their values and beliefs. They outline the aspirations of a professional project, during the story of their activity.

This writing exercise did not allow trainee teachers to show their activity. Only the training supervisors and the supervisors had access to this demonstration. On the other hand, it was the occasion to tell and to comment essential parts of their training experience, in a form communicable to others, with a degree of

freedom encouraged by the instructions and exploited by the authors.

Since writing is personal and singular, since it can stand apart from the illustration (of the application?) Of scholarly knowledge and professed theories, it leaves room for the expression of emotions. Among other things, the pleasure of the students and that of the trainee teacher is often mentioned, frequently invoked and (one guesses it), repeatedly summoned in practice and in interactions. Trainee teachers who echo this seem to appropriate the aphorism of Haye [34]: in physical education, “pleasure is not a problem, only its absence is one” ([34], pp. 15-16).

5.4. Epistemic, Identity and Social Dimensions of the Achievements during the Internships

In terms of the relation to school knowledge and knowledge (the epistemic dimension), the trainee students interviewed testify to their attachment to the understanding of the concepts taught in physical education. This element is also present in the other two dimensions under study (identity and social). In addition, some trainee students evoke the idea of an active construction of knowledge by the learner in interaction with others, statement generally associated with a socioconstructivist epistemology. To achieve this, trainees use variety of teaching practices, including debate, discussion and questioning. On the other hand, other trainees believe that knowledge lies in an external authority responsible for transmitting it, which can be associated with a realistic paradigm. Such results testify to the tensions that exist among future teachers with regard to the epistemological postures that they develop during their training. As mentioned above, the socio-constructivist paradigm has largely penetrated, at different levels, the Congolese system of teacher training in physical education (in texts, affirmed intentions and training practices), which is not without influence the relation to the knowledge of the trainees and possibly their teaching practices. However, it must be remembered that multiple perspectives on knowledge coexist, both at the Higher Institute of Physical Education and Sport and in the classes of internships, which could explain the presence of various, sometimes contradictory, influences in the discourse students surveyed.

These tendencies are also observed within the identity dimension (the relation to oneself). Indeed, many participants value the understanding of knowledge, but especially the critical spirit. In their eyes, it is essential to use critical judgment with regard to the knowledge drawn from programs and textbooks in a practical context. This element is particularly present in their speech. In contrast, and sometimes for the same participants, it is better to rely on the textbooks or the associate teacher, particularly because of the evaluation context that seems to modulate activities and relations with the teacher associate. Moreover, on this point, one should read more a report to power than report to knowledge. It should also be noted that very few trainees allow themselves to act as interpreters of knowledge objects, seeking to make them more meaningful and socially relevant in the eyes of learners, towards a cultural enhancement [35]. Although

they recognize the importance of being critical of school knowledge, they do not mention that they can provide an interpretation of it. Such results provide some understanding of how professional competence # 1 works for future teachers, according to which they must act as heirs, critics and interpreters of knowledge objects.

As for the social dimension (the relationship to others), the different roles and status conferred by student participants (high school students in our case) are similar to those they grant themselves as trainees. For example, the critical spirit is valued both for them and their students, which reflects a certain coherence in their speech. The analysis of the social dimension would also yield interesting results with regard to the relationships that trainees have with associate teachers. Although this aspect has not been addressed in this work, several studies show that there is also a tension: although the trainee teachers recognize the expertise of the associated teachers, acquired through the accumulation of years of teaching experience trainees maintain critical distance from them [36] [37]. For some, the approaches and methods of associate teachers break with those favored by trainees for teaching the subject disciplines, which makes it difficult to develop a personal pedagogical approach. Others testify to the openness shown by associate teachers in the implementation of teaching/learning situations in internship classes.

Like other studies carried out in the context of teacher training [38], our research seems to indicate that some trainees “import” the epistemological stance that is valued at university during internships. Indeed, the analysis of the epistemic dimension (the relation to knowledge and knowledge) reveals that socio-constructivist conception of knowledge would have penetrated the discourse of certain number of future teachers of physical education in our sample, either about a third. However, the fact remains that the relationship with knowledge analyzed in this study refers to the declared practices of trainees. Also, it is necessary to wonder about the way in which a relation with the knowledge of this kind acts on the observed practices, which could reveal certain gaps or make emerge other epistemological postures. In this respect, we begin an out-of-thesis research aimed at examining how the relation to knowledge, epistemological beliefs and conceptions of teaching and learning are tested by the conditions of practice of the profession, the latter being likely to encourage more traditional pedagogical practices among novice physical education teachers. In addition, the question of the interrelations between the relationship to the knowledge of physical education trainees and their teaching practices is not well documented [39]. The reciprocal influences between the relation to the knowledge of future teachers and the pedagogic practices deployed during the internship therefore remain to be explored.

5.5. Limitations of Study

The only use of interviews to characterize the relationship to the knowledge of

future teachers is one of the limits of our research. The use of sample of student volunteers is second another element to consider would be the person of the researcher who represents, for a trainee, a certain conception of training and the relationship to knowledge. Part of social desirability is not negligible. In an attempt to address this, future research would benefit from case study methodology that facilitates the use of questionnaires and interviews, classroom observation and situation planning analysis. teaching-learning. Such an approach would deepen our understanding of the experience of trainees in teaching, so as to identify the different facets of their relationship to knowledge as well as the implications on pedagogical practices. It would also be relevant to take up work centered on the analysis of the real activity of teachers, in the context of curricular reforms [40].

In the light of the results obtained, it seems appropriate to use a frame of reference structured around the notion of relation to knowledge, drawing both sociological and didactic perspectives, in order to apprehend the experience of teaching trainees of physical education. In addition to informing us about the relation to the knowledge of student trainees, such a framework informs us about certain relationship to teach it, in connection with didactic and psychopedagogical knowledge, bringing out various pedagogical practices. Through this research, the impacts of initial training on the professionalization process of the teacher cannot be identified accurately, positively or negatively. However, this allows some reading of the student's experience during internships, as part of a training pursuing an ambition of professionalization.

For example, the importance given by some future teachers to socioconstructivist theory (in connection with the epistemic dimension) and to critical judgment (linked to the identity and social dimensions), valued by several students, can constitute a contribution current master's programs in physical education (initial training), but without being able to establish direct relationships. In other respects, the analysis of the relation to the knowledge of trainees in teaching reveals certain tensions: 1) first of all epistemological tensions, where relatively opposite conceptions of knowledge coexist (oscillating for example between a socioconstructivist vision and a realistic vision); 2) secondly, tensions in terms of the teacher-trainee relationship, which is based on an evaluation-control report and on the recognition of expertise. This is of primary importance to teacher educators at the Higher Institute of Physical and Sports Education who must be concerned about the evolution of their students' thinking and their professional development.

6. Conclusions

The results obtained during this study on the construction of vocational skills of trainee teachers in situation validate the hypothesis of the study regarding the relevance of aid situations to transform their activity. The training provided at the training institute was not limited to the acquisition of knowledge for the ac-

tion that everyone would come to seek to solve its difficulties. The trainees' participation went beyond this because they quickly perceived the potential richness of three of the artifacts mobilized: a collective activity subject to a demanding semantics to integrate a community of practice, the video to hire a car -analysis and compass to overcome moments of crisis. They highlighted the benefits of participating in a collective that helped them overcome work-related challenges in and outside the classroom but also dared to demonstrate ingenuity and innovation.

Such observations seem to point to the need to help trainees in training to build their teaching posture by using, in particular, analyses of practices that promote awareness of the tensions to which they are subjected. More generally, it is therefore a question of leading the students in training to analyze their practice by always putting in tension the pragmatic stakes (to rotate the class) and intersubjectives (place and role of the teacher, relations with the pupils) with the epistemic stakes (to make learn).

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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